COMMUNICATION CONCEPTS

This series reviews enduring concepts that have guided scholarly inquiry in communication, including their intellectual evolution and their uses in current research. Each book is designed to provide organized background reading for those who intend further study of the subject.

COMMUNICATION CONCEPTS 1

Explication

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Foreword

This is the first volume in a series devoted to concepts in the study of communication. While each volume that follows will be devoted to a particular concept, this book is concerned with the process of conceptualizing itself. And while other books in this series will be prefaced by an Editor's Introduction, this Foreword will serve that purpose here—as well as introduce the series as a whole.

Making a concept explicit is, in a broad sense, a purpose of all discourses on communication concepts. The purpose of this volume on explication is to formulate some of the common principles that guide this practice as it is followed by many communication researchers.

Each scholar, myself included, has a somewhat specialized view of explication and what it helps us accomplish. Among those who have read and commented on earlier drafts of this book are Charles Berger, Glen Broom, Richard Carter, Robert Davis, Jose Gaztambide-Geigel, Dennis Kinsey, Hye-Ryeon Lee, Debra Lieberman, Matthew Lombard, Jack McLeod, Geetu Melwani, Peter Monge, Clifford Nass, Zhongdang Pan, Byron Reeves, David Ritchie, Donald Roberts, Caroline Schooler, Pamela Shoemaker, and Valerie Sue. Unfortunately, I cannot hold any of my helpful colleagues responsible for errors that remain despite their best efforts to improve what I've said.

Explication is an intellectual process to be applied to any concept one intends to make the focus of planned research, or to discuss seriously. Much will also be said here about communication, through examples of conceptual aspects of research with which I have been associated. Examples could as easily have been found in other areas of communication research. The field is growing rapidly, and my hope that this book will prove useful extends to all branches of communication inquiry.

The intended audience is people who plan to study communication, especially in the empirical tradition, and those who need

to understand how that tradition of scholarship works. This includes those who, in their expository writing, discuss communication concepts; critics of empirical approaches; and students who want to acquire an understanding of the academic literature of this field. Much of the content here is introductory, but it is hoped that the experienced scholar too will find new ideas, and clarification of old ones, in these pages. The same hope extends to the other volumes that will follow in this series.

The material in this book comes from many sources, collected over some three decades of studying and teaching communication research. My intellectual debts are too numerous to detail; certainly the references in the text to particular published sources are wholly inadequate to this purpose. The subject matter here overlaps both communication theory and research methods, and is best read in conjunction with textbooks and other materials on those subjects. I have tried not to duplicate what is readily available elsewhere.

One feature of this series is that each volume in it is to be brief—short enough to be used both by students as an introduction to a subject and by researchers for easy reference. Hence this book condenses much that is philosophically ponderable and pragmatically arguable, glossing over entire bodies of important literature so it can get on with its own central task. Trusting that others will readily provide them, it arrives unadorned by the usual academic qualifications, caveats, and cavils.

—Steven H. Chaffee, *Series Editor*

EXPLICATION

STEVEN H. CHAFFEE

1. Concept Explication: An Overview

This book is about a way of thinking. It is concerned with the disciplined use of words, with observation of human behavior, and especially with the connection between the two. Communication research mostly takes the form of words, although it is often presented through numerical entries in tables and graphs as well. But numbers and words are of little interest unless they can be translated back into conceptual terms. Those concepts are our way of organizing and clarifying what we observe.

An instance of communication is not, in its entirety, observed directly. Some aspects are always imagined, by the participants and by anyone attempting to study communication. When we think about communication we use concepts, in verbal form to represent what we observe and imagine; these conceptual terms, from which we build theories, carry meanings. Without conceptual definition, the words we use to describe and discuss communication are mere words—no improvement over mere numbers.

Many components of the communication process can be experienced directly, such as the words we say or read, and some of the reactions we and others have to them. These real-life perceptions provide the occasion, and the raw data, for our theorizing about communication. Concepts establish the linkage between communication perceptions, which everyone has, and theories, which communication scientists and critics build and test. Every-

one has at least implicit theories about communication; we could not function very well in life without them. But often what we imagine fails to match what we experience in our own communication. Sometimes labeled "a failure to communicate," this problem might more properly be seen as a failure of our theories.

My purpose here is to improve the quality of conceptualization by scholars who undertake to study human communication formally. Concept explication can strengthen the ties among theory, observation, and research. To the extent that it helps other educated people sharpen their tools for thinking, even if they are not themselves communication scientists, this book will have succeeded beyond its particular purposes. Although improved understanding of communication, either by researchers or by people in general, is not the immediate goal here, it too would be a welcome by-product.

"Things Are Not as They Seem"

Twentieth-century social and behavioral science, of which communication is a fairly recent branch (Schramm, 1963), grows out of a loose assumption about the relationship between science and society. Two of the best-known exponents of this view were Karl Marx and Sigmund Freud. Their research has largely passed from active science into the literary canon, but the implicit philosophical message they popularized remains: "Things are not as they seem."

There are underlying causes of social and behavioral phenomena, but according to this assumption, they are not to be understood by observing the surface of human events. What we think we see happening in everyday experience is actually a result of unseen forces. For example, Marx pointed out the realities of society in the Industrial Revolution, in ways that were not easily recognizable in a worker's daily life. Freud searched for explanations of both ordinary and bizarre behavior deep in the unconscious. To formulate these explanations, Marx and Freud invented new concepts, such as their definitions of *class struggle* and *capital*, *ego* and *id*, respectively. Many of their best-remembered writings concern the meanings of these ideas, and their relationships with other ideas in elaborate conceptual schemes.

These intellectual giants were also dogged empiricists. Marx (1867) devoted many pages to analyses based on statistical reports

of the British royal commissions on the new industrial working class. Freud spent many of his working hours interviewing clinical patients according to new protocols he had developed. These methods—statistical interpretation, clinical interrogation—remain among the standard tools of the social and behavioral sciences today. The methods, though, are not scientific unless they are used in the service of a theory, to pursue a conception of things as they "really" are rather than as they might seem on the surface of one's casual experience. Marx and Freud had very strong theories about unseen processes, and that was the central reason for their introducing new concepts.

Communication research provides latter-day examples of both kinds of thinking. Tichenor, Donohue, and Olien (1970) took a page from Marx by conceiving of the "knowledge gap" that results when a public information campaign succeeds in informing some people—but at the cost of exacerbating the disparities in knowledge between society's haves and have-nots. Schramm (1949) relied on Freud's dualism of *the reality principle* and *the pleasure principle* in deriving a typology of mass media use (see also Schramm, Lyle, & Parker, 1961).

It is not to the scientific methods nor even the particular theories of Marx or Freud, though, that today's communication scientist owes the greatest debt. It is to their more general working assumption that we must look beneath the surface of life as we normally experience it, beyond our personal perceptions, to comprehend "what is really going on." McLuhan (1964) is among those who have pursued this assumption in mass media studies, with his contention that television has restored Western thought to a pattern of simultaneity after centuries of linear thinking patterns due to the dominance of print media.

Communication practitioners, philosophers, and scientists alike think and write a great deal about the manifest world of communication. What sets the scientist apart is the formal conceptualization of processes that are not obvious, coupled with a determination to bring them into view in an equally formal manner. Analytic description, classification, and criticism of communication institutions and products are all worthy forms of intellectual effort, but this volume is directed especially toward those who take a scientific approach, in a broad sense of that term.

Observation: The Empirical Base

Research on human communication demands a lot of work in the creation and collection of data. To say that this is an empirical field of study means that it is based on the plentiful evidence we observe in the real world. The student of communication spends a great deal of time observing human events—people sending one another messages, mostly. But we would never learn very much about communication by simply observing what goes on around us. Communication scholars go to great effort to gather evidence that would not ordinarily enter their lives. One can find, somewhere, on practically any given day, a student of human communication engaged in such otherwise odd behaviors as the following:

- reading through very old newspapers, and keeping a careful record of the occurrence of certain kinds of statements;
- hiding behind a one-way mirror, watching children watch television;
- editing a video presentation that incorporates material from several different sources, to be shown in an experimental laboratory to college students;
- calling telephone numbers, selected randomly, and asking the adult who has had the most recent birthday what he or she thinks about current issues in the news;
- sitting in the corner of a meeting room, making notes on who says what to whom while a group of people at the table tries to solve a problem it will never encounter again.

These might be judged as strange behavior patterns, in and of themselves. Explication is the intellectual process that links such activities to broader propositions about communication. These and thousands of other examples of research work are undertaken because each is thought of as an *operational definition*. That is, they all entail operations on the day-to-day world, painstakingly arranged by the investigator because of an explication that connects them with a concept. An operational definition is often not of much interest in and of itself. Most of our propositions about communication are statements about general concepts, but empirical research can only be about operational definitions. Explication, then, consists of the thinking that relates

theory with research. All research is in this sense *qualitative*, regardless of whether it is *quantitative*.

Most communication researchers devote a large portion of their time to activities whose import lies in an operational definition of a larger concept. Coding content, running subjects in an experiment, and interviewing respondents in a survey are time-consuming forms of work. Whether they are worth the effort put into them depends on the quality of thought that has gone into the concept's explication. A thousand hours spent coding utterances of husbands on TV, or measuring the pulse rates of sophomores who are being shown an erotic film, or asking people how they plan to vote, may be time wasted if the resultant data do not serve a conceptual purpose. Explication, then, can save hours and deserves some investment of time itself.

This is not to say that communication can or should be entirely an empirical field. No science relies solely on what is readily observable. We must begin any attempt to study human communication with the understanding that much of it lies beyond direct human observation, even though it may be only imagined. Communication involves mental events that are very difficult to observe. We surely cannot see someone else think, and it is not much easier to observe our own communication experience as individuals—much less as part of a larger society.

Any operational procedure falls far short of observation of the whole process of any rich communication phenomenon. By scientific norms, our evidence has an inherent make-do quality, although we continue trying to improve on operational methods. The more fundamental critique of communication research is to be lodged at the conceptual level, by working out the relations between the meanings of concepts, not just the relations between empirical variables. Our measures will be improved more by evaluation of what they are intended to measure then by technical tinkering. Explication should tell us, among other things, the extent to which we are falling short of studying what we really intend.

The process of explication embraces both the conceptual world and the real world, crossing those lines repeatedly as the student attempts to improve conceptualization through research. This

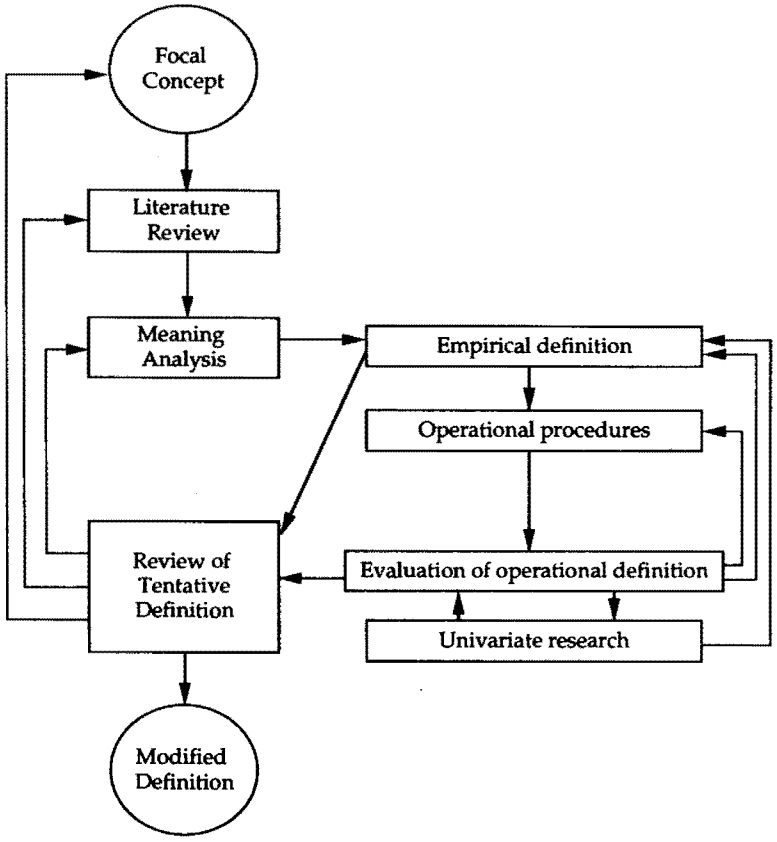

Figure 1.1. Concept Explication as an Iterative Process

ongoing dialectic between operational and conceptual scholarship (Blalock, 1982) cannot be overemphasized here. What follows is a series of steps, in a logical sequence, to which the investigator can refer at various stages in a program of research on a concept. This is not, however, a recipe through which one proceeds step-by-step in the sense of the investigator "being done" with one stage once he or she has moved on to the next. Often research begins with a fuzzy idea or a topical term and its conceptual development can never be considered complete. The assiduous investigator can return to various points in this

outline from time to time, comparing evidence to ideas in an ongoing process that will last as long as the concept continues to generate interest. This circularity of the explication process is diagramed schematically in Figure 1.1. For some scholars this can last a lifetime; rarely does it end with the completion of a single study.

Primitive and Derived Terms

Conceptualization is built of words, and we must start somewhere. In any conceptual scheme there are some *primitive terms*, which are accepted as commonly understood or as given (Hempel, 1952). The existence and acceptability of these concepts is assumed, which means they are not questioned within the framework of research built upon them. In other work, the primitive terms of an established tradition may very well be challenged, though. A "paradigm shift" to a new scientific tradition (Kuhn, 1970) is often based upon rejection of one set of primitive terms and its replacement with a new set.

The primitive terms of communication research are not always the same. Most commonly, though, one essential given is the individual, or person. While the conceptual or operational definition of a human being might be quite controversial in, say, zoology or medical ethics, it is rarely a matter of much dispute in human communication research. To get on with our work, we need to assume that people exist and we know them when we see them.

Some branches of communication research assume as well the existence of supra-individual entities, such as families or organizations or societies. In some scholarly traditions these terms are defined by specifying what persons constitute the larger entity, but not always. It is possible to speak of television, for example, without reference to any individual or group of individuals. Philosophical disputes naturally arise in some research contexts over the meaning of such a term; at that point it has become too problematic to be a primitive.

Time, which is a primitive term in some sciences, is often treated that way in communication as well. We define people in relation to one another in time, often implicitly. For example,

when we say that two people constitute a couple, we assume without thinking much about it that they have been communicating over some extended period. The assumption that we know what time means in this context is a convenience. We would be foolish to expend a lot of effort on its definition; it would then cease to be convenient—and no longer a primitive term. Still, there are situations in which we can benefit from conceptualizing time-related concepts (see Chapter 11).

A *derived term* is built of primitive terms. A couple, a group, a family, a community, and a society, are examples of derived terms. Each is made up of specifiable relations between persons. As a second example, if *word* is a primitive term, it is possible to define such entities as a sentence, a chapter, or a scene in terms of words.

Explication becomes important when concepts are being derived from primitive terms. Even seemingly simple statements relating persons to time, for example, may benefit from analysis. The concept of *college freshmen* refers to a particular set of persons, but only for a particular time (the freshman year). In a later time (next year) they will be replaced by an entirely different set of persons. The concept, though, will be unchanged. When time is invoked as part of an observation about an aggregate like this, quite different meanings can result. Consider, for example, the following statements: "College freshmen are becoming more liberal" and "College freshmen are becoming more conservative." Depending on the time frame of reference and whether it is meant to apply to one freshman or to the aggregate, each statement can be valid. The first is usually the case for *individual* students *during the freshman year;* most college students come from relatively conservative home backgrounds, and they become more liberal over time. But the second statement can also be true, at the *aggregate* level *across years;* during the Reagan-Bush Administration, for example, each succeeding group of freshmen held somewhat more conservative views than did the previous year's incoming class.

Mental events are also conceptualized in derived terms built on primitive terms. One mentalistic distinction common in research is that between *objects* and their *attributes.* Data are often organized as a series of objects on which several attributes have been observed. If the objects are persons, for example, their attributes might be gender, reticence, and self-esteem; if the objects

are messages, then the observed attributes might include length, bias, and persuasiveness.

How are the terms *object* and *attribute* derived? Carter (1965) proposed that an object is "anything that exists psychologically for a person." This means that objects include not only rocks and other people, but also abstract notions: states, such as love; institutions, such as television; stages, such as childhood. Use of *object* as an empirical term would require not just the assertion that these ideas can exist psychologically, but also some showing that they do exist for the people being studied. This might be accomplished through content analysis of their statements, perhaps in response to open-ended questioning. A derived term is not a primitive; it requires evidence.

The concept of *attribute* is built, in turn, upon that of *object.* An object usually has a number of properties, or attributes, such as size or color, usefulness, dynamism, and so on. Research on human personality, for example, focuses on the collection of attributes that make up a particular type of individual. At the individualistic extreme, Allport (1955) suggests that personality researchers focus on the uniquely integrated configuration of attributes that explains "the 'Johnian' quality of John's behavior."

Carter (1965) points out, though, that attributes are also important in discriminating between objects. We evaluate objects in our environment in terms of their similarities and differences on specific attributes. We also communicate a lot about those discriminations, and we build up mutual understandings in this way. In discussing politics, one person may say, "I side with the Democrats on domestic policy, but with the Republicans on foreign policy." A second person may agree with this set of discriminations, even though the two of them support opposing parties, that is, one is a Democrat and the other a Republican. It is through comparison of two objects (e.g., parties) that the attributes become the basis of communication in this model.

Consumer researchers often analyze people's decision processes in terms of the attributes used in comparing brands (objects) in a product category (Jacoby, 1975). For instance, some people buy the cheapest brand they can find, others the most expensive. Still others try to decide which looks nicest, or to find

out which one is most durable. Ray (1973) notes that people often make very casual decisions when there are few discriminations between alternatives. When voters do not see major policy differences between candidates, they may just go for the name with which they are most familiar. Similarly, consumers who might put a lot of effort into choosing between competing brands of stereo equipment may readily buy whatever brand of soap they have seen advertised most often.

This usage of *attribute* corresponds closely to the term *variable* in communication research. Variance, the defining characteristic of a variable, is central to much of quantitative research. If a concept does not vary, there are no comparisons to make, and no purpose for most kinds of statistical analysis. Still, non-variable concepts can be quite useful in theory building, both as the basis for developing variable concepts (Hage, 1972) and as a subject of research in their own right. Theories of homeostasis and equifinality in communication, such as "balance" models of attitudes (Heider, 1959) or the notion of functional equivalence in people's use of mass media (Parker, 1963), proceed from the observation of a state that remains constant even when conditions seem to be changing. A condition that remains stable even when it could, and perhaps should, change suggests to some theorists that it is of the highest importance.

The general point of this rather lengthy consideration of primitive terms is that we must begin by using some concepts that are not defined, so that we can define others. The terms noted here—person, object, time, and so on—are common but by no means universal in communication research. What is important is to recognize which terms we are assuming as primitive, and which other terms these enable us to explicate.

Validity

Validity is the governing criterion of communication research. When we use a concept in research, we are constantly concerned with the match between its meaning in relation to our other concepts, and its *operational definition* in a particular study. Explication is a method of keeping track of these two definitional activities together. Does the operational definition represent the

concept as we have meant it at a more abstract level? The concept of *intelligence*, for example, is usually explicated as including verbal, quantitative, analytic, and other abilities; operationally it may be represented by an IQ test score. This score can be satisfactory for many purposes, but it does not represent all we might mean by *intelligence*. On the other hand, one might not even need a precise IQ score for some research uses. Hovland, Lumsdaine, and Sheffield (1949), for example, found that simply knowing the highest grade in school a person had completed would provide sufficient data to predict very different responses to contrasting versions of a propaganda film. They decided that the slight gain in validity to be derived from looking up everyone's intelligence test scores was not worth the extra effort.

Validity should not be equated with "truth." Disappointing as this may sound, the philosophical concept of truth is not a usable criterion for a communication scientist. A meaning can be assigned and an operational definition concocted that might seem a valid representation for one purpose, but not for another; the most that can be said of "truth" in this rather common circumstance is that it could be evaluated according to a limited set of premises. Many debates over what constitutes "true intelligence," for example, are arguments over the proper premises. Some teachers complain about intelligence testing because they want a measure of the capacity to comprehend new ways of thinking, rather than of the ability to learn established ways quickly.

Although we all should hope our conclusions are true, their evaluation is guided by validity judgments; only after much research has been completed does a statement come to be viewed in the scholarly community as true—a status very few communication theories are ever likely to reach. Even then, the truth value is to be found more in the degree of agreement among scholars, an intersubjective criterion, than in any ultimate reality. When an accepted "truth" is called into question, research should begin anew, renewing the search for validity. In any science, when a statement is accepted as true, it is not subjected to continued research.

The concept of *opinion leaders* may be an example of an idea whose time has come and gone. Early research on election campaign effects (Lazarsfeld, Berelson, & Gaudet, 1944) found

that mass media influences were filtered to some extent through peers. This discovery led to a de-emphasis of mass communication for several decades, but today we see relatively little concern with opinion leaders in respect to the dominance of television in politics. These ups and downs do not mean that the concept of opinion leader is true or untrue; to say that it has been true in some instances (which is true) adds little. A valid conceptual purpose for these observations is needed, and *opinion leaders* no longer seems to fulfill that scholarly need.

MacCorquodale and Meehl (1948) proposed the term *intervening variable* to refer to a concept that has been validated through an extended program of research; earlier, when that same concept was mainly an idea without much surrounding evidence, its status would have been that of a *hypothetical construct*, implying lesser validity. While research is bringing a concept along from its introduction as a hypothetical construct to the empirical position of an intervening variable, its truth value does not change, but its validity in the eyes of the scholarly community does. As an example, Krugman (1965) suggested the hypothetical construct of *low involvement* to explain why television advertising works as well as it does. Several decades later the variable of involvement is routinely used as an intervening variable in persuasion studies of all sorts—although there remains considerable ambiguity over its meaning (Roser, 1990; Salmon, 1986).

It is not so hard to abandon truth as one's ideal in explication as it is in other aspects of theorizing. Most of us can accept the assumption that there is no one "true" operational definition for a concept, no observation or event that represents the more abstract concept more "truly" than others. An explication of a concept specifies the operations a scientist must perform to produce an instance of the concept; validity is the general criterion by which we assess the adequacy of that operationalization once we have established our explication. A unit of measurement may be valid for one scholar's purposes but not for another's. For example, in survey research on cultivation Gerbner, Gross, Morgan, and Signorielli (1980) measure exposure to television in units of hours; in laboratory experiments on brain wave activity, Reeves, Thorson, and Schleuder (1986) sometimes use units of a fraction of a second. Each metric seems valid for its specific purpose, but

would be a foolish choice for the other purpose. (Both measures are "true" regardless of purpose.) Some procedures for validation are discussed in Chapter 10.

The relationship between validity and reliability is also confusing for some. Reliability is implied in validity, but they are not the same concept. Validity refers to the relationship between the conceptual definition and the operational definition, whereas reliability has to do with operational definitions. Formally, reliability consists of freedom of an operational definition from random error. Put a different way, unreliability consists of random error in a set of observations and measurement procedures; invalidity grows with unreliability, regardless of the other merits of a measure.

Put yet another way, all operational definitions are subject to two kinds of error, random and systematic, both of which threaten validity. To the extent that random error is controlled or minimized, an operational definition is deemed reliable; to the extent that it also avoids systematic error (constantly representing some other concept besides the one intended), the measure is valid. If a measure is not reliable enough to capture what we want to measure, there is no point in inquiring further into its validity, so we should think of reliability as a necessary condition for validity.

Reliability and validity are sometimes thought of as being pitted against one another in decisions regarding operationalization. A common example is the choice between open-ended and fixed alternative question formats in interviewing people. When we want to know about people's communication experiences, we may have to ask them. Should we ask highly specific questions, which improve reliability by cutting down on totally irrelevant responses? Or, in the interest of other aspects of validity, should we ask a very general question, with repeated non-directive probes, to find out as much as possible about what the person has to tell us? There is no general answer to this dilemma. The goal, after all, is to maximize all aspects of validity, including reliability. But when choices must be made, the place to find guidance is in the explication.

Only if there is a clear conceptual definition of what we wish to know about can we assess the validity of the answers elicited by any method. Validity is evaluated in terms of the explication, not in terms of the raw phenomenon of communication the interview might evoke. If we have established what we want to know about, the more reliable operationalization is of course preferable.

Validity is an inference, a tentative conclusion that is constantly evaluated by the researcher. It is not an unarguable fact, reducible to precise quantitative terms. When research is presented to the scholarly community, fresh conclusions about its validity will be made by the researcher's colleagues. The best defense of a researcher's work is constructed in advance, through explication.

Procedures and Queries in Explication

In communication research we use many words, many meanings, and many pieces of evidence. The connections are not often clear, and the purpose of explication is to make them as clear as we can at each stage in research. Without explication, our words are nothing more than words, and our data add nothing to them. Theory, or more exactly *theorizing*, consists of an interplay among ideas, evidence, and inference. This transaction is conducted mostly in verbal forms, such as propositions, observations, and conclusions. Observation, as Charles Darwin remarked, "must be for or against some view if it is to be of any service" (Selltiz, Jahoda, Deutsch, & Cook, 1964).

The steps outlined in Chapters 2 through 8 should be covered in an explication, although not always in the order given. It is often necessary to cycle back to preliminary phases, such as the literature search, after evaluating a concept at a more advanced stage. What is presented here can serve as a checklist for the researcher explicating a concept, but it is not a recipe that guarantees results. It is a way of organizing the ongoing dialectic between theorizing and research that is the essence of communication inquiry.

2. *Focal Concept*

Most researchers begin by focusing in a preliminary way on one interesting condition and giving it a tentative name. This

becomes a starting place, the focal concept. One basic question to ask is whether the concept is a *variable*. (If not, could one or more variables be derived from it? Consult Hage, 1972, Ch. 1-2.) What we can study about a concept depends a great deal upon whether it is actually a variable. Consider television viewing. Americans spend so much time watching TV that we sometimes speak of a television addict. At the other extreme on the scale of TV use is the non-viewer. Neither TV addict or non-viewer is a variable, but the viewing scale on which they differ is; all three are concepts. A researcher might begin work by focusing on either TV addicts or non-viewers. Before long, either idea leads to the overall variable of television use.

Variables are essential to many kinds of research because most theories about communication are about relationships between variable concepts. Theories of communication effects, for example, often propose that an increase in some kind of communication produces a corresponding increase in some outcome that can be attributed to the communication. Correlational theories, such as those that associate two different kinds of communication with one another, require variance in each concept if the covariance is to be demonstrated. Lacking variance, we may still employ a concept, but not in this way. For example, either a kind of communication that is always present or one that is always absent may have effects, but they are not testable in terms of variance.

Planned Use

Once a focal concept has been identified, further key questions can be addressed: How will this concept be used in research? From the outset, a researcher should have some idea whether the concept is to be studied by itself, or in association with other concepts. If the latter, would he/she study its antecedent causes, its subsequent effects, or its mediating role? If it is a constant, is it to be studied in conjunction with variable concepts? The kind of variable the researcher needs depends to some extent upon the kind of theory he/she expects to involve it in.

Unit Definition

Empirical research is built upon observation of objects, each of which is treated as a unit. The units of discourse, of observation, and of data analysis should be the same if the research is to match the meaning intended. In quantitative research, the problem of unit definition is succinctly captured in the question, "What is one?" Common units in communication research include the individual, the dyad (pair of interacting persons), the message or part of a message or a series of messages, the community, the medium (e.g., newspaper), the network of interacting persons, and so forth.

Unit definition may seem simple at the outset, but in practice it is no easy matter to remain consistent. Newspaper consumer research, for example, generates data on reading (an attribute of an individual), subscription (an attribute of a household), penetration ratio (an attribute of a community), and street sales (an attribute of a newspaper). It is not easy to put these bodies of data on a common footing.

In studying families it is hard not to shift between attributes of the family as a unit and attributes of its individual members. For example, cohesion is an attribute of the family, while feeling hurt is an attribute of one family member at a time. One common inconsistency in communication research is the "ecological fallacy" of drawing psychological inferences about individuals from observing patterns in larger units such as communities. Somewhat the reverse problem is the treatment of individual observations as if, when added up, they represent some higher-order entity (e.g., public opinion polls).

Units of study, then, are themselves concepts in need of explication. We need to define what constitutes a group before we can define interaction within or between groups; we need to define television in the course of conceptualizing its audience. Relationships, such as interactions between people, or consumption of mass media by their audiences, are sometimes treated as objects in data analysis, sometimes not. The main point for the moment is that unit definition is rarely straightforward or widely agreed upon; nor can one slip past the question by stipulating a simple assumption. As soon as a researcher begins either comparing or counting units, the issue

of unit definition (and its relationship to the discourse in question) arises. This is the starting point of explication within empirical research.

Relationship to Time

Given the definition of a unit and the primitive assumption of time, two possibilities arise regarding variation. A variable in communication usually varies across units (e.g., persons) at a given time (*cross-sectional variance*). It is less certain that the concept also varies across times for a given unit (*process variance*). Many communication behaviors vary cross-sectionally but not over time for a given individual. For instance, while there is a lot of cross-sectional variation in habits of newspaper reading (or non-reading), only a small percentage of people change over even an extended period of time (Chaffee & Choe, 1981). Social attitudes are often defined as *enduring predispositions*, meaning we should not expect to find much process variance; the popular persuasion research concept of *attitude change* would by that definition of attitude be self-contradictory.

Time-related concepts are more difficult to specify when a researcher's unit of study is a social entity—a society, an electorate, a student body, an organization, a family, and so on. When such units are studied by sampling their membership, which is a common survey research method, change can occur for many reasons. The composition of the unit can change (old members leave or die, new ones are born or join); everyone in the unit can change at a constant rate; some members can change while others do not; or different individuals can change in different ways or at different rates. The development of methods to distinguish among these many possible processes is highly complex (see for example, Monge, 1990; Rogosa, Brandt, & Zimowski, 1982). Before adopting a particular statistical model, it is essential for the researcher to specify how he/she thinks his/her concept varies.

Cross-sectional variance among persons is often called *individual differences*, and is the subject of much research on personality and the cultural factors that help account for such differences.

Social entities can also vary cross-sectionally, but only if more than one unit is being studied; otherwise, there is no variance. Many theories closely identify communication with change and therefore with process variance. Unfortunately much exploratory work is limited to cross-sectional survey research, which is incapable of distinguishing between the results of change versus stable differences between individual units.

Conceptualizing the type of variance to expect should occur early in the process of empirical research. If, as may happen, a researcher expects change over time within individuals, but the study shows that the concept is extremely stable for the same people over a long period, it needs to be reconceptualized as a cross-sectional variable. This may in turn lead to designing a different program of research from the one originally planned. This was the experience of Ritchie, Price and Roberts (1987) in a longitudinal study of the impact of television on schoolchildren's reading skills. After a 3-year examination they found reading skill differences so stable—meaning that everyone was improving at about the same rate—that they recommended an entirely different approach to research from the one they had been pursuing.

3. *Literature Search*

Once we have formalized our ideas of the concept at a preliminary level, we can begin organizing the scholarly literature that deals with it. We need to find studies that either (a) involve the term we are using, even if its meaning is not the same as ours, or (b) involve the concept we are using, even if its name is not the same as our concept's. It is not necessary—nor often possible—to track down every existing study. But the literature search will be more productive if it ranges widely, finding examples of the full variety of meanings of our concept that are in use. Here, then, are some useful questions to ask while examining the literature that is found:

- What are the different conceptual meanings that have been assigned to this term, and what (if any) are their research purposes? What confusions do these ambiguities cause?
- What are the different operational definitions that have been used? Which research purposes do they serve? Which of these are related to our purposes?
- What are the usual names for these operational definitions? Are different names needed to make differences in meaning clear?
- What, considering its intended research purpose, seem to be the most promising definitions of the concept?

Operational Contingencies

Each study found in the literature has been conducted under specific conditions, such as details of time, place, and persons involved. These are contingent conditions for doing the study at all, and for the findings reported in it. Such operational contingencies, while not part of the concept per se, constrain the operational definition of each concept in a study.

Our concept will, as a rule, be intended to apply more broadly than its meaning in any specific context. For example, if we are interested in some effect of viewing television, we will find very different operational measures—in studies of children versus studies of adults, and in studies conducted during the 1950s versus those during the 1980s. Sorting out results according to these operational contingencies is one useful step in comprehending the literature. Often it can help in adjudicating conflicting findings we might encounter.

Hovland (1959) noted that controlled communication experiments often produce rather strong attitudinal effects, whereas field survey studies suggest only minimal influence. One major difference between these groups of studies is that experiments are mostly performed on students, who are much less involved in the topics under study than are the adults who are usually interviewed in surveys. Hovland suggested that adults resist media influence more than do students, which would make mass communication seem more powerful in experiments, overall, than in surveys. The operational contingency of units (students versus adults) helps to explain the differences between the experimental and survey literatures.

As operational contingencies change historically, a whole program of study may shift. An example in our time has been the concept of selective exposure to mass communication. Studies on political effects of media began in the 1940s (Berelson, Lazarsfeld, & McPhee, 1954; Lazarsfeld, Berelson, & Gaudet, 1944), when newspapers were the dominant news medium and television was in its infancy. Scholars of that time (see Klapper, 1960) concluded that "selective exposure" to media—meaning highly partisan newspapers—restricted communication impact because people were mostly reading what they already believed. In recent decades television has become the dominant medium of politics, perhaps partly because it makes selective exposure less possible. Televised partisan commercials reach a TV viewer at unpredictable times. So does news that might favor one party or candidate. When candidates debate on TV, voters are exposed about equally to the one they support, and to the opponent (Katz & Feldman, 1962). Meanwhile, major newspapers have become less partisan. Selective exposure to congenial political messages is not a ready option today, and the concept has receded to a minor position in the literature on media impact (Chaffee & Miyo, 1983). Where the operational conditions that enable an audience to select congenial messages continue, such as in specialized magazines or religious broadcasting, the behavior persists. But its relevance to the larger mass audience is diminished, and consequently so is its centrality in research conceptualization.

Operational contingencies vary across studies, but not within a given study. Indeed, within a study its contingencies of time, place, and persons are often taken for granted, given little note because they are not variable for that author. The identification of operational contingencies related to different meanings of a concept is, then, a product of the literature review. But a researcher must organize that literature in these terms. To paraphrase many studies one by one, or even to organize their titles by keywords, will not help in identifying operational contingencies that may divide the literature.

Operational contingencies are not the same as operational definitions. The operational definition of a concept is part of its explication and is selected from among a number of potential operational definitions of that concept. Operational contingencies are not concept-specific, although they can affect results that

get interpreted in relation to a researcher's concept. Operational contingencies might be thought of as part of the empirical view, but not of the conceptual vision, whereas operational definitions are both.

Often the researcher has little or no practical choice of operational contingencies. Lazarsfeld, for example, decided to study the 1940 election simply because that was the time he found himself in, and he wanted to examine the role of media in an election campaign. Having limited resources, he chose one county; in 1948 he replicated the study in a second county (Chaffee & Hochheimer, 1985). Similarly, a persuasion effects experiment may be conducted on college students because they are conveniently available to the investigator, not because they are the most varied or representative target audience. Only after studies have accumulated over some years, in various locales and with different kinds of people and communication media involved, can a literature review make evident what differences these contingencies have made in the meaning of the concepts at stake.

Analysis and Synthesis

The literature review is often a study in itself. Some of the most useful advances in communication research have been analytic literature reviews. A prominent example is Rogers's *Diffusion of Innovations* (1964, 1983). By organizing and synthesizing several thousand studies of diffusion around a set of conceptual distinctions and empirical generalizations, Rogers founded an entire sub-discipline within communication research.

Another kind of literature review, and one that can be equally ground-breaking, is the critical analysis of an accumulated body of studies. Sears and Freedman (1967) reviewed several experiments that tested motivational theories of self-selection to messages that match people's pre-existing opinions. The authors explicated selective exposure by dividing the literature between studies of "voluntary exposure" and those of "de facto exposure." Their analysis of the evidence led them to conclude that the concept of voluntary selective exposure was a myth. They also concluded that people do tend to be exposed de facto to messages they agree with, but not because they particularly

seek those messages for that reason. Separate studies suggest that the concept of deliberate avoidance to protect oneself from uncongenial messages is likewise a myth (Carter, Pyszka, & Guerrero, 1969). It appears that the mass communication industry is responsible for providing people with messages they approve of, without their actively doing much to affect that de facto pattern.

A literature review extends well beyond explication per se. Practically everything that follows in this outline, particularly empirical description (see Chapter 9), presumes that a literature is constantly in process. In practice the scholar begins reading prior studies, moves to various steps in the explication process, refines the preliminary definition, and then returns to the literature search with a sharpened definition. To read first the entire body of work generally related to a topic is usually much too time-consuming to be practical. One important purpose of explication is to delimit the work that needs to be done, by focusing on those studies that are relevant to the concept being formulated—and only those.

4. Processing the Literature

The literature review should yield several kinds of ideas and evidence. Primarily, it provides a picture of the variety of conceptual and operational definitions the concept has been given. These will be dealt with later in connection with meaning analysis and the design of actual research procedures. But the literature also provides descriptive information regarding the researcher's concept. This can be useful throughout conceptualization, guiding the imagination in formulating ideas, and providing expectations of what will be found in a later study.

Keep track of empirical findings while analyzing various kinds of studies. Note, for example, the distribution of values the concept seems to take on in different populations. Is it common

or rare, normally distributed or skewed? How does it vary over time, or is it highly stable? What are its correlates? Is it limited to certain situations or groups (e.g., elites), or to certain periods in history or societal development (e.g., times of rapid change)?

The value of keeping track of contextual information is illustrated by Martin, McNelly, and Izcaray's (1976) study of relationships between use of different mass media. They divided the studies they found into two groups based on the correlations between media. Some surveys reported high correlations among reading newspapers, watching television, attending films, and listening to radio; further, each of these measures was correlated with the person's education and income. They put into a second group those studies where correlations among use of the different media were low, and in which education and income were not particularly associated with radio, film, or TV use. Divided in this way, the first subliterature turned out to consist almost entirely of rural surveys in Latin America, whereas the low-correlation samples were all urban and were not geographically concentrated. The authors built on this background to devise a test of the theory that media use is constrained by socioeconomic status at the low end (rural populations), but that different media are somewhat interchangeable in the typical urban condition, where structural constraints on expensive and demanding forms of media use are not so stringent. This hypothesis, which was supported, in effect modified their conceptualization of media use.

Rarity of a phenomenon can be useful in evaluating a conceptual literature. Traditional treatments of mass media effects (Katz & Lazarsfeld, 1955) emphasized the idea of a two-step flow from media to opinion leaders and thence to the public at large. But news diffusion does not work this way; most people get most of their news most of the time directly from mass media (Deutschmann & Danielson, 1960). The emphasis on personal influence in mass communication theory has declined, partly on these simple empirical grounds; in some situations it is too rare to merit special theoretical attention. In less developed countries, on the other hand, the literature still points to interpersonal channels as a major locus of influence (Rogers, 1983).

The purpose of the literature review is to guide conceptualization. All three components of the literature—meanings, operational definitions, and empirical findings—should be kept

ready for reference as the researcher works through the process of explication.

5. *Levels of Definition*

Hempel (1952) distinguishes three levels of definition in empirical science: nominal definition, meaning analysis, and empirical analysis. These are of progressively greater utility for research in the physical sciences. For communication research, however, meaning analysis is the more central kind of work; empirical definition is an important consideration, but literally to analyze a concept's full meaning in empirical terms, as a physicist might, is highly unlikely.

This outline will follow Hempel's three levels of definition. The reader should not assume, though, that all explication leads eventually to empirical analysis in the sense that a concept can eventually be reduced to a satisfactory operational definition. Definitions in communication study are much more various, and conceived differently within separate theoretical contexts, than is the case with the physical sciences. Still, there is much to be done.

Nominal Definition

Names are often assigned to objects (e.g., *The New York Times*, Stephen, or the Sears Tower) and to classes of objects (e.g., child, memo). These nominal labels are perfectly serviceable in everyday conversation, but when applied to the more abstract ideas of communication (e.g., information, understanding, reticence) they are helpful only to the extent that they are accompanied by mutually understood linkages between the label and the object. A nominal definition is an arbitrary name that lacks linking statements; meaning analysis provides that kind of specification. A nominal definition is adopted as a convention; an empirical definition makes distinctions apparent. For example, we may

consider *The Wall Street Journal* a newspaper because most of us agree that it is one (nominal definition), or because it meets certain defined criteria that distinguish newspapers from other entities.

Nominal definitions can become problematic when carried beyond their original context. For example, when electronic calculating machines were first built it seemed natural enough to call them computers. Today, though, the term *computer* doesn't describe very well what these machines do for most of us most of the time. To a young student who is learning to "write on the computer," we may have to explain a bit of history (and quite a bit about the many uses of the computer) so the conventional name is understood. Industrial etymologies account for the persistence of many now-confusing concepts in communication, such as terms from printing (e.g., the press, lower case). Words that once referred to concrete entities have become abstractions whose meanings exist independent of those roots. The basic point here is that giving some object, or idea, a name is not a definition of a concept that will carry its meaning into other contexts.

Meaning Analysis

The process of analyzing the meaning of a concept may be approached in two ways: by distillation and by list. In either case, it is useful to organize our thinking into lower-order and higher-order concepts. Lower-order concepts are closer to the world of observation, either in everyday life or in a contrived laboratory setting. A higher-order concept subsumes several lower-order concepts, and the hierarchical organization of this structure of meaning can be imagined as a definitional "tree." The trunk of this tree is the singular concept we are explicating; branching immediately from it are a few higher-order concepts; each of these can branch further into several lower-order concepts; each of these may sprout one or more operational definitions. Meaning analysis is largely an intellectual process, occupying the trunk and major branches of this structure—without totally losing sight of operationalization.

Distillation of the abstract meaning of a concept begins with reading what many different investigators have said about it.

This is followed by an intellectual process of boiling the idea down to its essential elements. What, at heart, do various writers mean by the term? The goal might be to find the central meaning of the concept, but this is rarely achieved in practice because few concepts have a single meaning that is agreed upon by all scholars. Instead, the typical product of this kind of analysis is several meanings, each of which is used by some writers.

An example of distillation is provided by Carter's (1962) identification of three different meanings of the concept of *stereotyping*. He noted that different writers used this term to refer to the polarization, fixedness, or homogenization of attitudes. In his study of an election campaign's effects, he found that only homogenization increased in relation to mass communication.

Many two-word concepts carry two (or more) meanings, but that is not always obvious in discursive writings. An example is *social reality*. McLeod and Chaffee (1972) distilled dozens of writings in which the term *social reality* was employed, usually without explicit definition. They found two quite different, in some respects opposite, meanings in this literature, which they called social REALITY (sR) and SOCIAL reality (Sr). The first (sR) gives the concept the status of an objective reality, referring to "the real social situation," a true state of affairs the writer assumes to exist even though the people in that situation might not see it. This usage of social reality is akin to the Marxist concept of *false consciousness*, in which the individual is unaware of his true, oppressed status in a stratified society. The other meaning (Sr) emphasizes instead the *un*reality of the world as it is socially defined (Berger & Luckmann, 1972). When people agree that something is so, even though it is not, they behave as if it were, and so the socially agreed-upon version of reality becomes real in its implications for people's actions. Communication is central to both concepts, sR and Sr, and they are probably best understood as intertwined with one another even though they carry different meanings. This is often the case with two-word concepts; the ambiguity becomes part of the larger concept, as in the terms *public opinion* and *mass media*. Unpacking these multiple meanings is essential if one's research is to do justice to a complex idea.

Different meanings for the same term usually come from different literatures. This is fairly common in communication, which is not always a coherent body of knowledge. Sometimes

communication research is a gathering place (Schramm, 1963), a locus of overlap for several social and behavioral sciences, and for writers in literary and polemic traditions as well.

Dependency is an example of a term that means several different things within the literature of communication. Sociologists Ball-Rokeach and DeFleur (1976) use dependency to refer to a general view of mass media effects, which they suggest will be maximal on topics for which the person has no other communication source; the audience depends on the mass media. Other media researchers measure television dependency, the extent to which people who do not read print media are dependent upon television specifically for their information (e.g., McLeod & McDonald, 1985). At a more macroscopic level, Third World critical scholars see imbalanced international communication flows as part of a pattern of dependency of the less-developed nations on the Western powers (Elguea, 1984). These three distinct usages of the word *dependency* are not used in the same study, but they can easily show up on different pages of the same journal. Literature reviews in communication need to attend to meanings, not just terminology.

Definition by list consists of identifying all the lower-order concepts that constitute your higher-order concept. The definitional tree is an organized list; the Linnaean classification system in biology is a prominent example.

The concept of mass media is usually defined by list rather than by distillation of its core meaning, which is ambiguous. (Does *mass* refer to mass production, or to a conception of the audience as a mass, or to both?) Grammatically, *media* is a plural noun (the singular is *medium*), and the basic list is fairly well known. It includes newspapers and books and magazines, television, radio, and films. Most of the time such a list suffices, and it can be broken down into a tree form, such as division between print and audio-visual media; or within, say, television, division into broadcast, video, and cable. An economist trying to estimate the contribution the mass media make to Gross National Product (e.g., Machlup, 1962) might spend some time creating a more satisfying list, but a simple one would meet most scholarly needs.

A crisis can occur in a definitional list when a new item appears that might belong on it. A distillation of meaning may be demanded, where an agreed-upon list had sufficed before. At

one time, for example, there was no need for the term *mass media*. The concept of printing sufficed until about a century ago; *mass media* was created as a concept to accommodate twentieth-century innovations. Is it still useful in our era of new communication technologies? Cable television and video rentals seem easily added to the mass media list. But inclusion of interactive systems (e.g., videotext, videodisc) would depend a lot on one's definition, which in turn depends on its purpose. Electronic mail, for example, would not belong on most lists, but for some purposes it might be included. If it is, a new distillation—and perhaps a term other than *mass media*—will be needed. A list is mainly a convenience to the user, but scholars are interdependent and their conceptual decisions can affect one another.

A list does not simply expand over time. Old forms may die out and vanish from the list. For instance, such mass communication forms as the *broadside* and the *newsreel*, which today's list-makers might ponder where to put, no longer exist in sufficient prominence to be worth the trouble. A list, although an imperfect method of concept explication, is often productive enough. It is not necessary to think in an organized way about all the forms a concept might take, just to study one or a few of them. In other words, when a list will do, let it do.

Definition by list might appear at first blush to be easier to achieve than the more abstract distillation, with its demanding program of reading and analysis of disparate statements about a concept. But the two procedures are not distinct. In the process of organizing a list, such as a definitional tree, one begins to formulate at least an implicit set of empirical rules.

Definition by list alone, even if it is a very thoughtful and defensible list, is isolated between two important limitations. Behind it lies the problem of explaining what rules have been followed in building the list. In effect, to make a list we must have some implicit attribute(s), which is to say a theoretical analysis. Thus a list that is built *after* an explication is much more useful than a list that is simply cooked up for the immediate occasion of providing examples or grouping them.

A second limitation of a list is that it is time-bound, always subject to change. Any given list is limited to the reality of what exists at the moment. In the absence of further definition, there is no way of knowing whether an innovation should (or could) be added to the list. For instance, the concept of *network evening news* in the United States was for some years represented by a list of three broadcast networks: NBC, CBS, and ABC, each with a national news program at approximately the dinner hour. Then Cable News Network was formed, transmitting news around the clock. One question for the scholar is whether *evening* has been merely a convenient part of the name (i.e., a nominal definition) or if presentation of news in the early evening is of particular interest. The list alone does not tell you why it includes what it does.

Nor does a list inspire the imagination. Inventions, such as an around-the-clock news channel, are evoked by conceptualization—not by a mere listing of what already exists. Likewise in research, a new concept can open the path to discovery.

A *typology* is an organized list based on two or more attributes, hierarchically ordered. A rule is used to apply an attribute to the task of classification, so a typology can be thought of as a list based on several rules. A list based on only one rule, then, consists of the representations of a single attribute, and can be thought of as an index. In some studies *mass media use*, for example, is represented by a single index; while in others, it is analyzed as a typology built on several attributes.

Empirical Definition

Hempel (1952) considered empirical analysis of a concept the ultimate goal of explication in the physical sciences. He envisioned the formation of concepts that, through empirical research, would eventually be specified in operational terms. The concept of *hardness*, for example, was operationalized by the scratch test: If one material can cut a scratch in another, it is harder—both by definition and in fact.

No such hard-and-fast definitions are at hand in the study of human communication, nor are they likely to be. Despite considerable enthusiasm for "communication science" (Berger & Chaffee, 1987), attempts to reduce any concept in communication to a set of empirical referents have met with frustration. Human beings are too various, in their behaviors and their meanings, for us to arrive at a single fully satisfactory operationalization of any important concept.

We do, however, have empirical definitions of a more modest kind. An empirical definition of a concept enables us to conclude whether an event we encounter is an instance of that concept or not. This means that the definition tells us what to look for to make decisions about both inclusion and exclusion. Empirical rules specify conditions that researchers require so that when they discuss their research, their evidence coincides with their meaning. The empirical referents are part of the concept, but not identical with it. Just as an instance is only part of a concept (and vice versa), empirical research is only part of a body of conceptual discourse (and vice versa). As Blalock (1968) puts it, we have *auxiliary theories* linking our concepts with our measures; these measurement theories are tested as part of the test of a substantive theory that includes them. Research may also be designed to test the measurement theory itself.

Empirical definition is a goal toward which explication works. The assumption is that the more clearly researchers can specify what their concept means in the world of human experience, the more they know about it and the more knowledge they can contribute to others. This assumption has proven itself worthwhile in a thousand and more programs of communication research.

An example of research working toward an empirical definition is found in Festinger's studies on the psychological concept of *cognitive dissonance.* He originally defined dissonance quite broadly, as a noxious state that can be aroused in a person who holds two cognitions "one of which implies the obverse of the other" (Festinger, 1957). Dissonance theory became for a time highly productive, generating many experimental tests related to communication (Brehm & Cohen, 1962); but in experimental situations where the subjects had not yet acted, researchers often failed to find hypothesized effects. Festinger, not wanting to abandon an idea that had served well, decided that a demarcation was needed between dissonance and a related concept, *cognitive conflict.* So he proposed *decision* (or public commitment to a decision) as his new boundary (Festinger, 1964). Up to the point of decision, the person can experience conflict; only after a decision is made would the same person experience dissonance. Although it cut back Festinger's concept of cognitive dissonance from the broader sweep it had once seemed to offer, this boundary preserved it. Dissonance theory came to be viewed as applicable to a narrower range of behavior than originally envisioned, but within this reduced domain the concept remained viable. The point here is that the rule concerning decision was an empirical one.

Rules that can be applied to many phenomena have a number of advantages. They do not change historically the way lists do. They can even be applied "in theory" to events that have never occurred, providing a guide to experimental creation of unique conditions. But empirical rules are not easy to come by. They grow out of a sustained program of research, so early on they are heavily dependent upon meaning analysis. When first conceived, a rule is tested as a hypothesis, and only if it passes its test is it likely to become a definitional proposition that other scholars will adopt.

Required observations. How does a researcher decide when to infer that the concept exists? An empirical definition specifies the observations that are required. This involves several steps already covered here, such as unit definition, specification of attributes, and time points or other comparisons that must be made.

Just as units of observation may be either individual or relational (e.g., "husbands" are defined only in relation to wives), attributes may be conceived as either properties or relationships. Most variables in communication are measured in a relative fashion; to say that a person is "intelligent," or "conservative," for example, usually describes that individual's location in a distribution for a large population. What is less obvious, and more critical conceptually, is that many communication attributes are relationship *concepts,* not just relational measures. For example, to be "persuasive" a person must persuade someone else; to be a "conformist" one must conform to some social norm; in these cases, either the other person or the general norm is part of the concept, not just the operational definition. In specifying required observations, these components of the meaning need to be retained in the empirical definition.

One way of phrasing the problem of empirical definition is in terms of the criteria that must be met before we would infer that the concept exists in a particular case. These include criteria of both necessity and sufficiency, which are related to the terms *necessary and sufficient conditions* in causal inference.

A necessity is a criterion that must be met, or else the existence of the concept is impossible. Showing empirically that something is necessary is no simple matter, and attributes that are literally necessary are rare in communication study. More often, we set sufficiency as our criterion, in that any of several observations might satisfy our meaning of the concept. Sufficiency implies that the concept in question *does* occur if the criterion is met, which is often what is tested in empirical research.

There may be a number of different conditions under which the concept is instantiated, and each may be sufficient. No one of them is necessary. For example, viewing Channel 2 news is sufficient as an instance of the concept "viewing of TV news" but it is not a necessity; observing that a person instead views news on Channel 5 or Channel 7 would satisfy the concept just as well. This is an example of the kind of empirical definition that emerges from a meaning analysis that consists of a list of lower-order concepts.

Analysis by distillation generally leads toward higher-order concepts. Sometimes the concept is overly abstract and cannot be satisfactorily explicated in terms of required observations. For example, we might define the concept *relational communication* as requiring two persons (A and B), and a relationship (AB) between them. Relational communication occurs when A acts in a way that B interprets as signaling what A's perception of the AB relationship is. Many conceptual decisions need to be made about the observation of A and B. Must A have a perception of the AB relationship? Must A's signal match it? Must B's interpretation of it match as well? Must this affect B's perception of the AB relationship? If so, must B's perception change in a direction closer to A's? Only if most of these questions are answered positively could we define relational communication as a process of convergence of perceptions in an AB relationship. But if we do answer them positively, and if we take literally the idea of empirical definition, we would be faced with many, probably too many, observations to make. An empirical definition should not place an impossible burden on the empirical investigator.

Some researchers use only part of a full concept to identify their required observations. For example, one might be satisfied to infer that relational communication has occurred if A and B converge over time in their perceptions of the AB relationship.

When this convergence does not occur, though, the researcher is left to wonder which elements were missing—and which were necessary to the concept in the first place. A different researcher might instead be satisfied with observation of overt messages about the AB relationship (e.g., "I like you," "We're really communicating," or, "Leave me alone"). A third might want to include nonverbal cues (e.g., dress, body position, eye contact). Each researcher is changing the definition in substantial ways by deciding what is to be observed, and each specific definition drives a particular study. The closer a researcher's empirical definition gets to operational definition, which is to say the more that a higher-order term is replaced with a lower-order term, the narrower his/her concept becomes. At this point in this example, each researcher should sense that the starting concept of *relational communication* is too broad, and some qualifying terminology is needed so that the different usages in these projects are not confused.

Formal operations. The term *formal* refers here to formulas for mathematical operations that are performed on empirical data. These procedures are part of the operational definition of a concept, so they should be carefully designed to conform to the conceptual definition. Formal procedures include at least three steps: measurement, scaling, and statistics.

At each step, it is important to keep in mind the concept that is under study. Formal operations are themselves mindless; they are purely formulaic and can have no idea what the researcher is trying to accomplish. Measures, scales, and statistical procedures are tools, but they do not in themselves represent concepts. The researcher is responsible for selecting those tools that suit the task at hand.

Measurement consists of the assignment of symbols, typically numbers, to observations. Numbers are much easier to work with than are the observations themselves. Even purely qualitative, unordered attributes are assigned categorical numbers (e.g., 0 = male, 1 = female) so that they can easily be converted to percentages, or added to other qualitative categories to create quantitative indices. The advent of computers has strengthened the clerical tendency to replace qualitative meanings with numbers; it is all too easy to lose track of these meanings when one is scanning computer output.

In replacing a set of observations with a set of numbers, be sure to retain all the information that the concept requires. The explication should specify what this includes; if it does not, it needs more work. Spending time "up front" on explication can help avoid losing key information because the researcher failed to anticipate the need for it.

Coding of communication content is a popular measurement activity that is common to the study of interpersonal interactions, mass media messages, and open-ended responses in survey interviews, for example. Explication should be an ongoing process throughout; preliminary classification rules become refined as a researcher progresses through practice coding. Much communication content is available in precoded form, but other people's codes have been designed for their purposes and will rarely fit someone else's. Reeves (1989) notes that, for example, traditional categories of television programs (e.g., news, entertainment, advertising) do not necessarily correspond to the variables that affect psychological processing.

A single set of messages can be classified in many ways, and the few categories chosen need to be defined carefully. The three general principles for coding are as follows:

a. There should be a place for everything; this is often called the principle of *collectively exhaustive* categories.
b. There should be only one category for each unit; this is the principle of *mutually exclusive* categories.
c. Each set of categories should be defined according to a single classificatory rule.

The first two principles are addressed by preliminary formulation of categories, partly through trial and error. Coding is to some extent inductive; if a type of item occurs with unanticipated frequency, it may even lead to a new focal variable. Reformulation proceeds until coders largely agree on the classification of items. The third principle is the most intellectual task in content coding. It does not mean that only one attribute can be used; but it does mean that each attribute used to form a typology should be separately explicated.

A coding scheme requires explication not only of the rules for classification (i.e., the dimension along which items vary) but also

of the boundaries between categories. For example, Butler and Paisley (1980) created a feminist "Consciousness" scale for coding sexism in the mass media. Their lowest level is called "Put her down"; the highest is "Recognize that she is non-stereotypic"; in between are other categories: "Keep her in her place," "Give her two places," and "Acknowledge that she is equal." These categories are treated as mutually exclusive, arrayed in an ordinal scale; the boundaries are substantively significant, not merely convenient.

Scaling evolves from measurement when decisions are made about the numbers to assign to observations. In the classic typology of scales (Stevens, 1946), every scale is at least nominal, which is to say any measure gives a unique name (or number) to each category into which units are classified. Successively higher forms of order are possible: ordinal scales, equal-interval scales, and ratio scales. The choice should be based on explication, particularly a simultaneous consideration of the latent continuum and the operational scale.

In explication consider first whether to treat the concept as either a continuous or a discrete variable. A continuous variable has an infinite series of values; personal intelligence is an example. A discrete variable is a set of categories that are inherently discontinuous; one cannot shade into the other. Two common discrete variables in everyday life are pregnancy and death. We even have little jokes (an acceptable adjunct to explication, if apt) to describe the discreteness; one cannot be "a little bit pregnant" or "slightly dead."

Although we think of some concepts as continuous variables, none of our operational scales can be. Measures consist entirely of discrete categories, even though some analog devices come close to continuous measurement. We conventionally break down distance, for example, into arbitrary categories, such as inches, miles, or light-years. These are discrete categories; if the latent variable is continuous, some instances will be classified together that are technically different.

Refining categories for exact classification can be a costly effort, and there is no point in being more precise than the research problem requires. The span represented by a scale interval should be fine enough to detect differences the researcher expects to be meaningful in the phenomena being studied. Reeves, Thorson, and

Schleuder (1986) considered this issue in the measurement of time concepts in communication.

An ordinal scale may be created from observations of either continuous or discrete phenomena, as long as each succeeding level can be conceived as "greater than" the last. Most scales in communication research are ordinal, which makes them compatible with theoretical statements of the popular form, "The greater variable X, then the greater variable Y."

Dichotomous (but ordinal) categories can be combined to create a more extensive ordinal scale. For example, the two dichotomies "pregnant-nonpregnant" and "alive-dead" could be combined to track the history of one man from before the time his mother became pregnant (0), to when he was a fetus (1), to the "lifetime" between his birth and his death (2), to the time after he died (3). These categories are ordinal, but the intervals are clearly not equal; indeed, the two extreme categories (0 and 3) have no outer boundaries.

Equal-interval scaling consists of assigning numbers such as 0-1-2-3-4-5 and then treating them in statistical analysis as if the distances between adjacent numbers were equal. That is, it is assumed that 5-4 = 4-3 = 3-2 = 2-1 = 1-0. When the underlying variable is a continuum (e.g., time) this is usually appropriate. But those conditions are not often met, and treating an ordinal scale as an equal-interval scale often creates error.

An equal-interval scale may also be a ratio scale, which means that it has a true zero point. Only when intervals are equal, and where zero really means the total absence of the condition, can one perform the full range of mathematical operations. Formally, a ratio scale is so called because ratios that appear algebraically equal are in fact equal. That is, for example, $1/2 = 2/4 = 3/6 = 40/80$, and so on. Mathematically, a ratio constitutes division; this is another way of saying that any formal operation that involves division requires a ratio scale.

Ratio scales are often hard to justify in communication research because they assume a zero point as well as equal-interval properties. For many of our concepts the variation is from "more" to "less" but the notion of "zero" would be hard to define.

Rescaling, or transformation of a scale by a mathematical formula, is one method of correcting for the common problem of a ratio scale whose numerical intervals do not correspond to its

conceptual intervals. Logarithmic transformations are often used for this purpose. The log of income, for instance, is a better representation of functional differences between strata than is income expressed in raw dollars. It can be ludicrous to equate the difference between two people who make $10,000 and $20,000, respectively, with the difference between two who make $510,000 and $520,000. But if we convert the dollar scale to a positive logarithm, the latter difference becomes properly trivial. Conclusions based on logarithmic (or other) transformations should be couched in appropriate terms; the analyses involved are not valid for the original (raw data) scale.

One of the earliest attitudinal scaling methods started with paired comparisons (dichotomous ordinal data) and combined them to yield an equal-interval attitude scale (Thurstone & Chave, 1929). For a description of this method, consult Edwards (1957). Multidimensional scaling, which is extensively used in the measurement of communication variables today, also begins with paired comparisons data.

Sometimes the research purpose calls for breaking down a single ordinal continuum into two variables. Newspaper reading habits provide an example. Some people never read a newspaper (many because they cannot), while others read one or more every day; still others read occasionally or often, which are intermediate categories. This is certainly an ordinal continuum, but depending on what we want to study, it may represent two concepts: reading (dichotomous), and amount of reading (continuous). If the purpose is to analyze differences between nonreaders and readers, the higher categories on the full scale might well be merged into one (all "readers," regardless of frequency). If, on the other hand, the search is for explanations of the amount of reading, it might be advisable to eliminate people who never read a newspaper from your study entirely.

Statistical analysis begins with descriptive statistics such as those of central tendency and dispersion of the variable's distribution. What is to be described depends not only on the measure itself, but also on its conceptual definition. Bivariate analyses too should be anticipated conceptually, and selection of a statistical model is governed partly by the kind of scale created. Use of statistical analyses in evaluating an operational definition is discussed in Chapter 9.

Formal operations, such as measurement, scaling, and statistical techniques, do not constitute definitions of concepts in themselves. It is safe to assume that no statistical formula was ever created with a concept of human communication in mind. Explication puts the researcher in the position of determining conceptually what formal procedures are appropriate for the concept, rather than attempting to find meanings that might express the results of a particular formula.

6. *Review of Definition*

The steps covered to this point produce a preliminary definition of the researcher's concept, from meaning to observation to formal operations. This is a start, but not in itself an explication. It is now time to apply vocabulary criteria to our preliminary definition. After reviewing the principles and queries in this section, it is quite likely that we will decide to revise the definition.

Specificity

One straightforward criterion for evaluating the preliminary definition is the degree of specificity it embodies. In general, be specific. For example, operational definitions of "television viewing" are more specific than those of "media use," and time spent in public affairs discussion "yesterday" is a more specific measure than "daily." One good reason for specificity is that researchers can always combine data from several specific measures to create an estimate of a more general concept, but the reverse is not true. An operational definition that tried to cover too much under one indicator cannot be broken down into its constituent parts after the fact. For example, if we measure "media use" and do not get the result we expect from it, there is no way to ascertain where the fault lies—in our conceptual definition, or our operational definition of it. It may be that the hypothesis tested was

accurate for, say, "newspaper use" but not for "TV use"; only if we have a more specific measure for each can we check out this possibility. If this suspicion turns out to be correct, it should lead to explication of these more specific concepts.

Reification

To reify is to treat an abstract concept as a thing. We often use terms, such as *group mind, momentum,* or *mental set,* to represent conditions that may not exist except in our imagination. It is easy to reify with words, which once spoken make it seem as though the term has existential import. Explication should alert us to this kind of verbal trap.

Communication itself is a potential reification, and so are many of the terms related to it. The essential question to be asked here is whether we have evidence—other than our own belief—that the concept has empirical referents.

A surprising number of terms used in everyday discourse about communication may not pass this simple test. One of the most common terms in the history of persuasion research, for example, is *attitude.* No one has ever seen an attitude, although our belief in its existence may be strong. Methods to measure attitudes are among the earliest empirical traditions (e.g., Thurstone & Chave, 1929). Extensive explications have been devoted to this concept (e.g., Edwards, 1957; Green, 1954). But unless we assume that either a widespread belief in a concept or a technique of measurement is evidence of existence, then the concept of attitude remains on shaky ground.

To call into question the existence of a concept is not to say it does not exist, but simply to make that an empirical question. In public opinion research, for example, there is a natural skepticism about the opinions people express in polls: Did they have opinions before they were asked? When operational definitions, such as question wording or sequence, differ from one survey to the next, there is a pragmatic approach to the reification issue. If the distribution of pros and cons on a public question is about the same even when the question is asked in very different ways, these opinions are probably real enough. Opinions on abortion of a fetus with birth defects are not much affected by question

order, but asking this item influences later responses regarding abortion if the woman "does not want any more children" (Bishop, Oldendick, & Tuchfarber, 1985; Schuman, Presser, & Ludwig, 1981). On the latter issue, a lot of people seem not to hold a settled opinion. If the proportion endorsing an opinion statement shifts dramatically with only minor variations in question order or wording, the data may represent little regarding public sentiment (Payne, 1951).

A sound approach to reification is to attempt to establish the existence of the attribute in question before conducting research that assumes it. Consider Iyengar's (1987) work on people's interpretations of causality in TV news about societal problems. He began by asking people simply to describe their thoughts about such news topics as poverty and unemployment. More than half the time, respondents said they thought of these as problems and they also thought about what causes those problems. With the existence of such causal thoughts established, Iyengar then went on to experiment on the effects of different versions of newscasts on these causal perceptions.

Invariance of Usage

We do not use every word to mean the same thing every time; our language is much too rich, and our lives much too varied, for that. One long-run goal of concept explication is to establish a scientific meaning for each term. It follows, then, that we should use that term consistently to refer to that concept, and not to conflate it with related concepts or alternative usages of the term. If we are not consistent in our application of scientific language, it is unlikely that anyone else will be. The converse does not hold, of course; being consistent ourselves is merely a small step, not one that guarantees emulation unless we demonstrate to others in our discipline that our usage pays intellectual dividends.

The criterion of invariance would be trivial if applied only to ourselves. It is also a test to apply to others: Which writers use the concept consistently? Intellectual work is fragmented into schools of thought, and we can examine the literature to see which usages are common—and consistent—within various

traditions. Some groups of scholars are more cohesive than others in matters of definition.

If a term is used casually to mean different things by people who cite one another frequently, there may be a need for continued explication. In mass communication the term *knowledge gap* refers to a process of widening social differences as a result of an information campaign (Tichenor, Donohue, & Olien, 1970). Perhaps because the term itself sounds like a static condition, however, it sometimes gets diminished to mean little more than a predictable difference in information levels between social strata. The powerful conception of the knowledge gap as a process, and as an inadvertent societal dysfunction that a campaign might be designed to avoid (Rogers, 1976), gets lost. To some extent this is due to a purposeful ambiguity in the term, but variance in usage is a risk of ambiguous terminology.

Some writers delight in using an ambiguous term to point up a number of thoughts at one time. There is nothing wrong with this practice—and it often makes for delightful reading—but it should not be confused with explication of a concept. It is an exercise in the variousness of meanings, but not an attempt to focus upon a useful one for further study.

In qualitative studies of communication—itself something of a misnomer since all communication research relies upon qualitatively defined concepts—Christians and Carey (1981) argue for the utility of "sensitized concepts" (see also Blumer, 1954) rather than explication. A loosely defined idea has the value of sensitizing the researcher to many possible instances of it. This approach calls for a different kind of specification, leaves open the issue of reification, and intentionally makes room for considerable variance in usage. Christians and Carey give examples of provocative phrases, such as Veblen's concept of *conspicuous consumption*, which suggest certain kinds of phenomena but do not narrowly define what to observe. An extreme form of ambiguity is the oxymoron, a compound term whose parts seem inherently at odds with one another. Riesman's *lonely crowd* is a good example. The point Christians and Carey are making is that one should not attempt to define these terms with great specificity, lest they be stripped of their sensitizing capacity. This approach is independent of explication. A sensitizing concept is speculative, a

way of "seeing with new eyes," and could well be a tool in an early stage of scientific investigation.

Invariance of usage, then, is relative in some degree to the stage to which a program of research has progressed. In early stages there is likely to be a good deal of ambiguity and flexible usage, as part of an open-minded orientation to phenomena to be studied. Theories about communication come not only from participation and observation, but also from thinking about those experiences. If, however, variance within the same writer or the same intellectual tradition does not at some point begin to shrink so that meanings become focused, we should suspect that rather little progress is being made toward understanding.

No concept in communication research is likely to refer to identical operations and meanings across the full range of investigators, theorists, writers, and users of knowledge. A kind of discipline can be said to exist, though, when there is a group of scientists who use a set of terms consistently—even if most people do not. In physics, for instance, the terms *energy* and *work* have quite explicit meanings; they are definable in terms of simple formulas, which every physicist understands within a clearly bounded theoretical system. Those who have not studied physics often do not understand these meanings and may use these same words in many other ways. The word *mass* in mass communication, for example, has rather little to do with its meaning in physics.

Invariance of usage of a term across a large number of scholars and scientists cannot be accomplished by fiat, despite the hopes of some dictionary writers in circumscribed disciplines. In the long run consistency grows out of need when a large number of studies point in the same direction. Scientists have to communicate their research to one another without extensive face-to-face conversation. Concept explication, from the specification of criteria to the standardization of formal operations, helps a great deal toward this end. If we find scholars using the same term to mean quite different things, or using different words to refer to the same concept, we can conclude that the explication process has yet to be achieved at the level of the discipline as a whole.

7. *Modified Definition*

Having evaluated our definition according to the criteria in Chapter 6, we may wish to rethink our explication. Often a scholar gets to this point and decides to start over, recognizing the pitfalls of what seemed at the start like a good idea.

The next step in explication is to set forth boundaries for the concept; the observations that need to be made to instantiate it; and the formal operations that are to be performed on these observations. The careful scholar returns to these considerations often, working between meaning and observation to formulate a tentative, modified definition for further research.

8. *Operational Procedures*

Deciding what to do empirically is a critical point in any research project, and a very unsettling time if we are doing the job properly. Large decisions face us. Textbooks on research methods typically frame these as choices among major classes of methods, such as content analysis, sample survey, or laboratory experiment. But those are venues for observation, and first we need to know what we are trying to observe. That has been the purpose of our explication. The choice of method should flow from the definition we are reaching.

The operational definition should take precedence over other decisions regarding operational procedures. In principle, we seek to study people and contexts that are most appropriate to our concept, not vice versa. In practice, there is a good deal of compromise at this stage. We study communication because we are interested in the people and the contexts, and some are more interesting to us than others. But there is a difference between studying college students because our concept is particularly

suited to them, and because they are easily available to us. At the least, we must take care that the real-world settings we select for study do not constrain the variation we are seeking to capture in our operational definition.

Research methods are not intended to be covered fully or systematically in this book. There are many texts on research design, data collection, statistical analysis, and other features of operational research. Here we will touch on these matters only as they bear upon concept explication. References will be limited to methods that are fairly standard within traditional communication study. The reader interested in other methods will, it is hoped, carry conceptual concerns into those domains.

Passive Versus Active Observation

A first-order question to consider is whether the observations our explication requires already occur. If not, we may have to make them occur, that is, create them. Communication is often conceived as a way of making some other condition occur; if that occurrence is not easily observable, the investigator may have to either create novel communications or impose exposure to specific, selected communications for the people in whom the condition is to occur. This procedure is common in experimental research on communication effects. The principle extends to any condition required according to the concept explication. The general question for the investigator is whether to adopt a passive observer's role, or to take an active part in creating the conditions necessary for observation.

A great deal of work in communication research consists of active observation in this extended sense. Archives, for example, are created for use in research. There are stacks of newspapers and private collections of videotapes all about. To create an archive suitable for systematic content analysis, though, is expensive, laborious, and space-consuming, an ongoing activity to which only a very few research libraries commit themselves.

Record keeping is another common form of data creation. People communicate thousands or millions of times (depending upon the explication) a day, but neither they nor others keep many records of those events. Indeed, to keep a thorough

record can constrain the communication behavior so that it would be quite unrealistic as a representation of natural events. Csikszentmihalyi and Kubey (1981) have devised a method of randomly sampling people's communication behavior throughout the day by signaling them with a radio "beeper" each time the person is to fill out a brief self-report form.

Experimentation is built upon actively created data, in the form of the manipulated (independent) variable at least. Events are made to occur so the researcher can be confident of observing them. A subject can be exposed to a message that does not exist outside the experimental laboratory, and responses may be elicited that likewise could not occur anywhere else. For instance, Bandura, Ross, and Ross (1961) compared children's play behaviors after seeing a live or filmed adult "model" attack (punch, kick) an inflatable doll. Later, in a test situation, the child's toys included a similar inflatable doll; the operational issue was whether the children would imitate the model's attack. None of this hitting and kicking, filmed or otherwise, would have occurred were it not for this study, although one underlying reason for the experiment was that in real life some children do all too much hitting and kicking.

The survey researcher may rely on a respondent's ability to recall communication events after some time. Survey interviewers often aid recall with detailed question formats, supplementary diaries, and other devices that help the person succeed as a self-observing participant in the research.

Survey research is an intermediate method with respect to the passive-active observational continuum. That is, surveys often mix both kinds of data. Many interview questions would not occur to respondents who are not in the study; one-quarter of interviewees may give opinions even about fictitious matters unless they are offered a negative cue, such as, "Do you have an opinion on this or not?" (Bishop, Oldendick, Tuchfarber, & Bennett, 1980). The researcher runs the risk of mistaking created data for observed events; all that has been observed, technically at least, is that the person has been asked a certain question and has given a particular response to it on that occasion.

The existential status of actively created data needs to be considered carefully. Active methods for observation are

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