

Information Systems Approach to Organizations

of Karl Weick

My father worked at a large metropolitan newspaper. I was 6 years old when he first took me to experience the final hour before the morning edition was "put to bed." The place was alive with activity—shouted orders, quick telephone calls, and copy boys running last-minute changes to the composing room. The whole scene was like watching a huge animal struggling for survival.

Many systems theorists regard the image of a living organism as an appropriate metaphor to apply to all organizations—one model fits all. Even though mosquitoes, sparrows, trout, and polar bears represent vastly different species in the animal kingdom, they all have systems to provide for nourishment, respiration, reproduction, and elimination of bodily waste.

Karl Weick is uncomfortable comparing organizations to live *bodies*, but he definitely regards organizing as a lively *process*. Weick is the Rensis Likert Professor of Organizational Behavior and Psychology at the University of Michigan. Whether he's examining a publishing company, IBM, the city council, or a local jazz band, Weick focuses on the common process of organizing (verb) rather than the static structure of the organization (noun). He sees his approach as capturing a slice of life; traditional analysis is like performing an autopsy.

Weick equates organizing with information processing; information is the common raw material that all organizations process. But the communication an organization receives is often equivocal. That means a given message has more than one possible interpretation. Weick's model of organizing describes how people make sense out of these confusing verbal inputs.

THE GOAL OF ORGANIZING: MAKING SENSE OUT OF EQUIVOCAL INFORMATION

Weick's idea of organizing as a way to make sense out of equivocal information is conceptually close to Shannon and Weaver's information theory and Berger's uncertainty reduction theory. (See Chapters 3 and 10.) You'll recall that Shannon and Weaver define information as the reduction of uncertainty, and Berger assumes that increasing predictability is our primary concern when we meet someone new. Early on, Weick seemed to use the terms *uncertainty* and *equivocality* interchangeably:

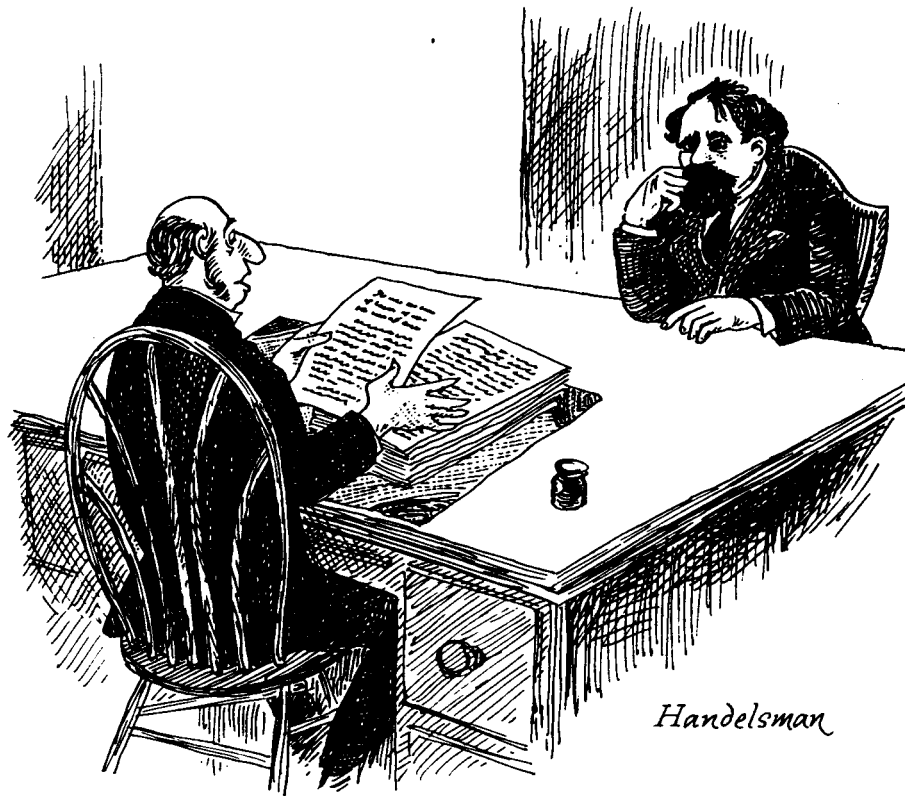
The activities of organizing are directed toward the establishment of a workable level of certainty. An organization attempts to transform equivocal information into a degree of unequivocality with which it can work and to which it is accustomed.¹

However, in his more recent book, *Sensemaking in Organizations*, Weick draws a clear distinction between the two ideas.²

As Weick uses the term, uncertainty denotes a lack of information. People who are uncertain look for more facts and a way to interpret them. Equivocality, on the other hand, refers to ambiguity. The problem is one of confusion rather than ignorance—too many possible meanings rather than not enough. When words or events are equivocal, people don't need more information. They need a context or framework to help them sort through the data they already have—a filter to help them screen out interpretations that would turn out to be counterproductive. Let's take a look at a typical example of equivocality in an information-processing system you know well—your college.

Suppose your instructor assigns a term paper in which you are to compare and contrast any two communication theories. By this point in your academic career, you know the ins and outs of writing a term paper, but this assignment is quite ambiguous. Would you be wise to pick a pair of theories that reflect your core commitment to the social sciences or the humanities, or would it be better to select one from each camp? Does your instructor want you to quote extensively from primary sources, or is there a premium on original thinking? Which would be a bigger mistake—a once-over-lightly, three-page analysis or an inflated twenty-page tome that's obvious overkill? You are on your own because the teacher is away at a conference until the night before the paper is due. Besides, in response to earlier questions, he or she merely said, "Do whatever you think best."

Faced with this highly equivocal situation, you'd probably start by spending as much time checking with other students in the class as you would in the library checking out the readings I've listed in the "Second Look" section. Class members who are in touch with each other would probably coalesce on a way to approach the assignment. Weick cites the words of communication specialists George Huber and Richard Daft to show how important this kind of face-to-face interaction is in any organization:



"I wish you would make up your mind, Mr. Dickens. Was it the best of times or was it the worst of times? It could scarcely have been both."

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When confronted with an equivocal [ambiguous, confusing] event, managers use language to share perceptions among themselves and gradually define or create meaning through discussion, groping, trial and error, and sounding out.³

I'll continue to use life at a college or university to illustrate Weick's model of organizing as a system of processing equivocal information.

THE UNIVERSITY AS A LOOSELY COUPLED SYSTEM

Over fifty years ago, University of Chicago Chancellor Robert Hutchins bemoaned the chaos that confronts the young adult who steps onto the university campus. There are courses running from art to zoology, but Hutchins claimed that neither the students nor the professors can integrate truths presented within a department, much less between separate disciplines. Weick agrees that

"university organizations have *goals* that are inconsistent, ill defined, and loosely coupled; *technology* that no one understands; and *participants* who vary in how much time and effort they invest in the organization."⁴ But he doesn't share Hutchins' pessimism.

Weick believes that the degree of complexity and diversity within the organization needs to match the level of ambiguity of the data it processes. He calls this "requisite variety." Since university students and faculty are dealing with vast amounts of confusing information, Weick is convinced they will fail to accomplish their varied tasks of "sensemaking" unless they organize in a complicated array of interpersonal networks. He advises deans and department heads not to panic in the face of disorder. Instead, he encourages members who are working in an equivocal information environment to "complicate themselves." Most organizations function quite well even though no one person knows for sure what's going on.

Business consultants often describe organizations according to the mechanistic approach—employees are cogs in a corporate machine which is geared to produce widgets. Weick adopts the general systems approach, but he thinks the principles of mechanical engineering have little to offer the student of organizational life. Rather than using a mechanical model, he prefers a biological one, the same type used in the Bible to describe relationships in the early Christian church:

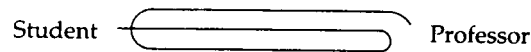
For the body does not consist of one member but of many. . . . If the ear should say, "Because I am not an eye, I do not belong to the body," that would not make it any less a part of the body. If the whole body were an eye, where would be the hearing? . . . God arranged the organs in the body, each one of them, as he chose. . . . There are many parts, yet one body. The eye cannot say to the hand, "I have no need of you."⁵

The passage illustrates the interconnectedness that Weick regards as the primary feature of organizing life. Sometimes the bonds are tight. For example, McDonald's quality-control directives ensure that the french fries you get near campus will taste like the ones served under the golden arches in your home neighborhood. In other cases the linkage is quite loose. A drought in Idaho may adversely affect the taste of potatoes served in McDonald's *and* the student union cafeteria. But almost all events are coupled to each other in some way.

In order that you might experience loose coupling firsthand, Weick urges you to tour buildings on your campus and note whether there are more statues and busts of college donors than there are of famous people. He claims that this seemingly isolated feature of university life could well be linked with a closed-stack policy in the library, the percentage of the campus budget that goes for beautification, the average distance from faculty offices to washrooms, and whether or not faculty names are printed alphabetically in the college catalog or are listed in order of academic rank.

Weick describes the basic unit of interconnectedness as the *double interact*. A double interact consists of three elements—act, response, and adjustment.

You write a research proposal, the professor says it's too wordy, you cut it down to a single page.



Double interact loops are the building blocks of every organization. These communication cycles are the reason Weick focuses more on relationships within an organization than he does on an individual's talent or performance. He believes that many outside consultants gloss over the importance of the double interact because they depart the scene before the effects of their recommended action bounce back to have an impact on the actor.

The university is a prime example of double interacts in a loosely coupled system. Loose coupling refers to the fact that feedback loops in the history department have little in common with the double interacts occurring in the school of business, and neither set is tightly linked with the cycles of information within the service department that's responsible for the care and maintenance of the college buildings and grounds. Although Hutchins deplored the absence of common goals and commitment, Weick sees it as a strength. Loose coupling allows the university to absorb shocks, scandals, and stupidity without destroying the system. An incompetent professor, surly registrar, or dull student won't be cause to shut the doors.

THE UNIVERSITY AS A SYSTEM OPEN TO THE ENVIRONMENT

In 1844, Charles Darwin's *The Origin of the Species* presented his theory of evolution.⁶ His survival-of-the-fittest position states that organisms live in a harsh environment. Some are not well suited to survive and thus quickly die. Others have whatever it takes to live, so they reproduce. Natural selection results in a form of life better suited to its surroundings:

Variation → Selection → Retention

Weick applies Darwin's theory to organizations. He thinks we should consider the social-cultural environment as a jungle where survival is the name of the game, an ultimate goal even more important than accomplishing the stated aims of the organization. The March of Dimes is a case in point. That charitable organization was founded for the specific purpose of funding research to discover a way to prevent polio. In 1954 Dr. Jonas Salk discovered a vaccine for the virus, and in 1960 Dr. Albert Sabin developed an effective oral strain that virtually ended the crippling childhood disease. One might think that the charity would celebrate victory and gratefully disband. But the March of Dimes fundraising system proved to have greater resistance to death than polio. The organization adapted to a changing environment by switching its focus to birth defects, and three decades later is still soliciting money.

Weick contends that some people organize in a way better adapted to survive than do others. The fierce competition among schools for new students

and the steady disappearance of small private colleges support his view. Weick notes one major difference between biological evolution and group survival, however. A given animal is what it is; variation comes through mutation. But the nature of an organization can change when its members alter their behavior. University of Colorado economist Kenneth Boulding labeled adaptation through change "survival of the fitting."

My childhood visit to my father's office left a lasting impression of organizational fluidity. He pointed out the official organizational chart that hung on the wall. The bold vertical lines of authority flowing down the pyramid gave the impression of a controlled and orderly flow of communication. But then he pulled his unofficial pencil version from the top drawer of his desk. It was smudged with erasures and cluttered by dotted lines criss-crossing the page. "That's who is really talking to each other this week," he said. Weick would have liked my father's approach. He tells managers to continually "rechart the organizational chart."

THE THREE-STAGE PROCESS OF SOCIAL-CULTURAL EVOLUTION

According to Weick, social-cultural evolution is a three-stage process that begins with enactment:

Enactment → Selection → Retention

Enactment: Don't Just Sit There; Do Something

The term *ivory tower* is often used to suggest that universities are separate and aloof from the world that surrounds them. Weick regards any notion of fixed barriers between an organization and its environment as erroneous. Consider the relationship between a university basketball team and its various publics. In addition to double interacts with the players, the coach has to respond to professors calling for strict academic standards, alumni clamoring for victory, reporters wanting interviews, television's dictates for odd starting times, the administration's demands for ethical recruitment, and the whims of parents and high school coaches who are convinced that their boy is the next Michael Jordan.

The example not only shows the absence of firm boundaries that mark where an organization stops and the environment begins, it is also consistent with Weick's belief that organizations create their own environment. Achieving a slot in the NCAA playoffs will create alumni pride, a climate certain to result in increased giving. In the terms of open-systems theory, the environment is as much an output as it is an input. Through the process of enactment, people organizing together invent their environment rather than merely discover it.

Action is the root idea of enactment. Weick is convinced that the failure to act is the cause of most organizational ineffectiveness. He advises the manager to wade into the swarm of equivocal events and "unrandomize" them. The only way a leader can fail the test of organizing is by doing nothing.

Weick is well known for his counterintuitive maxims for managers:

Act, then think!

Leap, then look!

Ready, fire, aim!

He believes that action is a precondition for sensemaking. He suggests that shy people may be more confused because they are hesitant to act, an inertia that robs them of the opportunity to crystalize meaning. Once people act, they generate tangible outcomes in a social context, and this helps them to look back and discover what is really happening and what needs to be done next.⁷

I recently had the opportunity to watch Weick's advice played out in discussions between the young president of a small church-affiliated college and male students who petitioned the administration for condom dispensers in the dorm. Although the proposal for coin-operated machines in the men's washrooms was specific, the meaning behind the request was equivocal. Did the ad hoc group have a sincere concern about the dangers of AIDS and unwanted pregnancy on campus, or were they using the issue as a way to attack the moral fiber of the school? Was the request an admirable case of student activism or merely a challenge to all authority?

As soon as he heard about the issue, the president, William Hill, set up a series of meetings and informal discussions to clarify the situation. Although talking about the issue may not strike you as bold action, remember that Weick regards processing information as the essence of organizing. Language is action. Whenever managers say something, they are actually creating a new environment rather than merely describing a situation. That's why Weick thinks most organizations need to have more meetings rather than fewer. President Hill's act of initiating honest dialogue created a positive climate among students and gave him a basis for selecting a specific interpretation of their behavior.

Selection: Retrospective Sensemaking

Weick defines *selection* as "retrospective sensemaking," and he thinks the concept is beautifully captured by the response of a little girl who was told to be sure of her meaning before she spoke. "How can I know what I think till I see what I say?" she replied.⁸

Retrospective sensemaking is an organizer's answer to the recurring question of meaning: "Knowing what I know now, should I change the way I label and connect the flow of experience?" But we can only interpret actions that we've already taken. That's why Weick thinks chaotic action is better than orderly inaction. Common ends and shared means are the result of effective organizing, not a prerequisite. Planning comes after enactment.

President Hill received information that he could interpret in different ways (equivocality). He immediately invited the six students making the request to come to his office to talk (enactment). After the meeting was over, he looked back on the dialogue and tried to imagine a reasonable history that led

up to the conference (selection). Weick says that Hill had two organizational tools to help make his selection—rules and cycles.

Assembly *rules* are stock responses that have served well in the past and have become standard operating procedure. Whether codified in oral tradition or stated in the company manual, these rules represent the corporate wisdom about how to process information. Undoubtedly, Hill's school has a pool of guidelines relevant to the student request for condom dispensers:

- All requests should be put in writing.
- Never appear to give in to student pressure.
- In sexual matters, just say no.
- Controversial issues should be sent to the trustees.

Yet each of these rules seems less than satisfying in this many-faceted situation. Weick would claim their inadequacy is due to the ambiguity inherent in the request. Rules are fine when equivocality is low, but they fail to remove uncertainty from a situation when many conflicting interpretations are possible.

The second tool for selection is the act-response-adjustment *cycle* of the double interact. These verbal loops can take the form of interviews, meetings, open briefings, conferences, phone calls, discussions, exchange of memos, working lunches, or chats over the watercooler. Like a full turn of the crank on an old-fashioned clothes wringer, each communication cycle squeezes equivocality out of the situation. Weick claims the more equivocal the information an organization has to process, the more communication cycles it requires to reduce ambiguity to an acceptable level. He postulates an inverse relationship between rules and cycles. As cycles increase to handle complex data, reliance on rules goes down.

A series of communication cycles between Hill and Bob Lott (spokesperson for the petitioning group) went a long way to reduce uncertainty that each had about the other's intent:

HILL: It's great to see that students care about social issues on campus.

LOTT: Thanks for being willing to talk with us right away. The former president would have ignored the issue, and we'd never get a straight answer.

HILL: This one is a tough issue. When it comes to AIDS, there's no such thing as safe sex with more than one partner. Condoms aren't 100 percent effective.

LOTT: We don't want to encourage loose behavior, but sometimes in a moment of passion during dorm visitation a guy and a girl may have sex without taking proper precautions. Chaplain Thurgood at Pinehurst College said, "I'd do anything in my power to prevent one abortion or one case of AIDS." That's how we feel.

HILL: I feel the same way. But I fear that your suggestion would encourage dangerous sex rather than make it safe. Would you guys be willing to cut out closed-door visitation to reduce the risk?

LOTT: (Long pause) We'll have to think that one over.

You may or may not agree with either man's stance, but through this sequence of double interacts both parties eliminated potential misinterpretations of the other's actions. Hill rejected the notion that students were trying to em-

barrass the school, but he also concluded that they weren't willing to sacrifice their visitation rights to achieve public health goals. Hill ultimately decided against installing condom dispensers. Although Hill's decision was not popular with the students, because of his openness to discuss the issue in a reasoned manner, they did not perceive him as a weak leader or an authoritarian prude. The positive cast that each put on the other's behavior is consistent with Weick's preference for affirmation over criticism. In Hill's and Lott's case, the foundation for positive interpretations had been laid through the president's participation in pickup games of basketball in the gym.

Although much of Weick's overall model remains to be tested, two innovative studies confirm that organizational members employ rules to process unambiguous data, but use communication cycles to process highly equivocal information. Organizational communication professors Linda Putnam of Texas A & M University and Ritch Sorenson of Iowa State University designed a sixteen-hour simulation for two imaginary fireworks companies, periodically feeding in messages of varying ambiguity.⁹ Participants applied more rules when the meaning was clear, and fewer rules when the meaning was obscure.

Hofstra University dean and communication professor Gary Kreps ran a field test on the year-long proceedings of a university faculty senate.¹⁰ He gauged the equivocality of twenty-four separate motions and then tracked the debate within the body. As Weick predicted, equivocal proposals generated more double interacts among members than motions that appeared straightforward. Taken together, these studies show that there is an inverse relationship between rules and cycles that varies according to input ambiguity.

Retention: Treat Memory as a Pest

Retention in organizations is like biological reproduction in nature. It's the way systems remember. President Hill's college isn't as loosely coupled as a state university, so his manner of responding to the condom proposal may become a dominant action in corporate policy. But even small schools aren't so tightly knit that a leader's actions and interpretations automatically become the norm for all college staff. Most employees will never hear how the president responded, much less recall it at a later date.

Weick thinks that's fortunate. Too much retention creates a network of rules that reduces a person's flexibility to respond to complex information.

However, Weick recognizes that some degree of collective memory provides stability for people who are working together. What is a corporate image if not a record of interpersonal relationships, causal maps of how things work within the organization, and stories of successful penetrations of the outside environment? That's why universities publicize faculty and student achievements, preserve accounts of experiences on campus, and catalogue the honors received by famous alumni. But the weight of tradition can stifle the flexibility needed to ensure survival in an uncertain future. Weick seeks an ongoing tension between stability and innovation. He fears that managers give too much credence to past experience and suggests they should "treat memory as a pest."

Weick urges leaders to continually discredit much of what they think they know—to doubt, argue, contradict, disbelieve, counter, challenge, question, vacillate, and even act hypocritically. Company manuals are collections of recipes that suggest that each course will turn out right if you follow the rules. Weick prefers the crazed-chef approach, which encourages the cook to make up the recipe as he or she goes along. Organizations fail because they lose flexibility by relying too much on the past.

CRITIQUE: THE PLUSES AND MINUSES OF METAPHOR

Karl Weick manages to do what few systems theorists have done in the past—make a general theory interesting. He accomplishes this through a variety of provocative metaphors, vivid examples, and startling statements. He writes that “all interesting theories share the quality that they constitute an attack on the assumptions taken for granted by an audience.”¹¹ He guarantees attention by continually challenging the conventional wisdom of managers who seek to simplify procedures and minimize conflict.

His sociocultural application of Darwin’s evolution theory shares the advantages and drawbacks of all metaphors. On the positive side, the biological model explains the hard-to-understand concept of systems in terms of something we know intimately—our living body. It also highlights features of organizations that we might otherwise miss—the ultimate goal of survival, the body’s ability to innovate, and especially, its constant exchange with the environment.

Yet the living-information-systems model has its danger. It would be easy to become so caught up in the figure of speech that the metaphor becomes an ideology. Some who regard organizations as actual living organisms have taken the way the body *is* as evidence of how an organization *ought* to be. For example, many apologists for the free enterprise system offer social Darwinism as justification for cutthroat capitalism. Or we might argue that since the healthy body has a functional unity, any conflict within an organization is a sign of illness. Weick, however, doesn’t treat the metaphor as proof, and he shouldn’t be held responsible for the mistakes of people who do.

Some managers do hold Weick responsible for his shoot-from-the-hip advice. They say that it’s easy for Weick to urge a quick-draw managerial response when he’s not the one who will be hurt by stray shots from his “ready, fire, aim” maxim.

Weick answers their criticism with the true story of a small Hungarian army patrol that was lost for three days in the Swiss Alps.¹² The soldiers had given up hope and resigned themselves to dying until one of them found a map in his pocket. With new hope, they used the map to discover their bearings and made it back to their home base. It was only then that they discovered that the map was of the Pyrenees, not the Alps! When you’re lost, says Weick, any old map will do. When you are confused, any strategic plan is better than inaction because it animates and orients people. Act first, think later.

Weick has offered a provocative theory that has stimulated a great deal of discussion. If his theory strikes you as somewhat equivocal, consider the ambi-

guity an occasion for double interacts with your instructor to reduce the uncertainty.

QUESTIONS TO SHARPEN YOUR FOCUS

1. Weick's "Act now, plan later" advice seems to contradict Hirokawa and Gouran's functional perspective, which encourages rational deliberations (see Chapter 15). Can you think of a way that both theorists might be right?
2. Weick says that "meetings make sense." Using Weick's concept of *requisite variety*, can you explain why Weick thinks most organizations need to have more meetings rather than fewer?
3. What organization do you know that is *tightly coupled*? How does it deal with *equivocal messages* from its *environment*? Does this method of *information processing* help or hinder its survival?
4. Does Weick's advocacy of *retrospective sensemaking* apply to your learning in this course? When would *rules* serve well? What opportunities do you have for *double interacts*?

A SECOND LOOK

Recommended resource: Karl E. Weick, *The Social Psychology of Organizing*, 2d ed., Addison-Wesley, Reading, Mass., 1979.

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Rules and equivocal messages: Linda Putnam and Ritch Sorenson, "Equivocal Messages in Organizations," *Human Communication Research*, Vol. 8, 1982, pp. 114-132.

Cycles and ambiguous proposals: Gary Kreps, "A Field Experimental Test and Reevaluation of Weick's Model of Organizing," in *Communication Yearbook 4*, Dan Nimmo (ed.), Transaction Books, New Brunswick, N.J., 1980, pp. 389-398.

Critique of Weick's model: B. Aubrey Fisher, "The Enactment of Communication," Annual meeting of the Speech Communication Association, 1980.