

# Metaphorically Speaking

*New technique uses multidisciplinary ideas to improve qualitative research.*

*By Gerald Zaltman*

**R**esearchers often are stymied by the "outside-in inside-out paradox." We know much more about how to tell things to consumers (getting the outside in) than about helping them tell us about their internal state of mind (getting the inside out). Put differently, firms are much better at helping consumers understand product and service offerings than they are in helping consumers express deep, latent, and emerging thoughts and feelings.

Yet these deep thoughts and feelings should, ultimately, be the basis for a manager's marketing decisions, so it is essential that we find better ways to get the "inside out."

Unfortunately, knowing how to represent the external world (e.g., product attributes, brand images) to consumers does little to help them represent the inside world of their thoughts and feelings to researchers. The two processes are not symmetrical.

Coupled with the need to elicit consumer knowledge better is the need to present such findings to users in a manner that is helpful and involving. Perhaps most important is that the findings be presented in a manner more consonant with how the "data" are experienced by consumers.

## THE BIRTH OF ZMET

The Zaltman Metaphor Elicitation Technique (ZMET) is the child of many parents. It is a patented process built on current research and thinking in such diverse fields and sub-fields as cognitive neuroscience, neurobiology, art critique, literary criticism, visual anthropology, visual sociology, semiotics, the philosophy of mind, art therapy, and psycholinguistics.

The power of this new tool derives, in part, from its being rooted in major advances in other fields.

It combines knowledge from the social sciences, biological sciences, and the humanities, as well as certain computer technologies, to address the outside-in inside-out paradox.

### Key Ideas From Other Disciplines

Major advances in understanding human thought and behavior are occurring in various disciplines which, collectively, may revolutionize how we inquire about thinking and action among consumers.

**Most social communication is nonverbal:** Although estimates vary, there is general agreement that at least two-thirds of all social meaning is exchanged nonverbally. This is consistent with the finding that two-thirds of all stimuli reaching the brain is visual. Facial expression, physical gesture, physical space, attire, scent, and frequency of touch, are among the many nonverbal systems of communication. Nonverbal communication also includes paralanguage: the timbre, resonance, pitch, tempo, syllabic duration, rhythm, and other speech qualities that determine whether we mean what we say. Frequently, these qualities of communication will convey the opposite or something different from the words we say.

Paradoxically, the great majority of all market research techniques is verbo-centric, i.e., they rely on literal, verbal language. Literal verbal language is certainly important. The task facing market researchers is how to deal with both verbal and nonverbal language more effectively.

**Thoughts occur as images:** Thought occurs in the form of images and involves the ability to display and order images. These neural representations are visual, auditory, tactile, mathematical, and so on. Only infrequently are these images words.

Brain researchers believe memory storage areas

behind the temple activate the mind's eye at the back of the brain. The images are interpreted at this site at the back of the brain and the resulting information is moved to the brain's language centers. Verbal descriptions are then added and the thoughts are moved to the location where decisions about action are made.

When customers are able to represent their images in nonverbal terms, they are closer to the state (topologically arranged neural patterns/activity in certain brain sites) in which thoughts occur and, thus, we can learn more about them.

Verbal language is an indispensable part of this process; it helps customers convey their internal representations or meanings to researchers. When linked with nonverbal images, however, the communication is both deeper and more varied than verbal language alone permits.

**Metaphors are central to cognition:** Metaphor, the representation of one thing in terms of another, is fundamental to thinking and knowing. We cannot know anything unless it is perceived as an instance of one thing and not another. Metaphors are not only ways of hiding or expressing thoughts, they actively create and shape them.

Thought is more inherently figurative than it is literal. People use, on average, nearly six metaphors per minute of speech. Consequently, by paying more attention to the metaphors customers use, we can learn more about their thoughts and feelings.

**Cognition is grounded in embodied experience:** Abstract thought is shaped by perceptual and motor experiences. There are fascinating demonstrations of the neurological and cognitive bases for this important premise and its implications for interpersonal communication.

Basically, metaphorical understanding and associated mental models are grounded in bodily experience. This is evident in everyday expressions such as, "She's really feeling down," "That's a hot property," "That sounds fishy," and "Do you get the point?"

There are also profound orienting metaphors involving balance, physical movement, and touch. This suggests that metaphors involving various senses and the interactions among them should be used to probe deep thought structures.

**Reason, emotion, and experience co-mingle:** Ample evidence suggests that healthy decision making depends equally on emotion and reason. Emotion, logical inference, and embodied experience are mutually dependent, perhaps even inseparable.

As leading brain theorist Antonio Damasio puts it, "Emotion, feeling, and biological regulation all

play a role in human reason. The lowly orders of our organism are in the loop of high reason." Neurological descriptions of the hard-wired interactions among three partnerships—the body/brain, brain/mind, and mind/body—are quite convincing.

**Deep structures of thought can be accessed:** It is possible, within the time and budgetary constraints faced by researchers and managers, to delve more deeply than is customary into the content of customer thought. All customers have relevant thoughts that can be fully articulated with special help.

Additionally, all customers have relevant hidden thoughts: ideas they are not aware of possessing but are willing to share once discovered. A variety of techniques such as those used in art therapy, and especially phototherapy, can be very effective in surfacing such thoughts.

Mental models guide the ballistic (nonrandom) nature of saccadic eye movement. For instance, what is noticed in a picture mirrors the inner maps people use unconsciously to structure and comprehend experience. ZMET uses special questioning procedures with consumers' images to elicit these maps or models.

## HOW ZMET WORKS

Each consumer participating in the study is asked to collect a minimum of 12 images representing their thoughts and feelings about the research topic. Considerable care is required in framing the project question for consumers. Topics might include what they think of a particular brand or company, how they experience a purchase setting or a buying process, how they use a product or service, or how they think and feel about a product concept. The images selected contain metaphors of thoughts and feelings residing in neural activity.

Later in the interview, people are asked for representations involving other senses to express their thoughts and feelings about the research topic. Eliciting metaphors helps researchers explore ideas that are deeply held as well as surface ones.

Participants have seven to 10 days prior to their interview to collect the images they bring. The images can come from any source such as a family album, catalog, magazine, or a photograph taken specifically for the interview. It is critical that consumers collect their own images as opposed to selecting from researcher-provided images. Much more accurate information is gained this way. Also, if the topic involves automobiles, for example, par-

ticipants are expressly asked not to use pictures of cars. This pushes their use of metaphors deeper.

Most participants spend about six hours over several days thinking about the assignment and selecting pictures. They report a high degree of involvement in this activity and arrive for their interview at an advanced stage of thinking about the topic.

The one-on-one interview takes approximately two hours. Nearly 2,000 very diverse consumers have gone through the process, and it is rare that anyone has difficulty with the assignment. The personal interview involves several steps carefully designed to engage different aspects of a consumer's reasoning and emotional processes. This allows opportunity for deep, latent ideas to emerge as well as for the expression of a wide range of relevant ideas.

Each step also provides a degree of overlap with at least one other step. When convergence across steps occurs for certain ideas, we can be more confident about their importance. For example, the brain works differently with moving images than with still images. The vignette step (moving images) and digital image step (still image) yield some constructs that are the same and some that are unique to each step.

A step is considered sound when it produces some results that converge with other steps. If the digital image step yields the same constructs other steps do, we can be confident that those constructs are important. If the results of one step are validated by others and also produce unique ideas, we can have greater confidence in those unique ideas because of the validity of the originating step.

The architecture of the interview, then, increases the likelihood that important ideas will not be missed, provides convergent validity for key constructs, and assesses the salience to individuals of these constructs. The process is designed to delve deeply enough into the consumer's mind to engage fundamental and often hidden thoughts and feelings that frequently go unspoken.

Deep thoughts and feelings are likely to be socially shared; that is, the factors that create similarities within market segments produce shared cognitions. People in common situations share common knowledge and reasoning processes. These socially shared cognitions are important from a marketing standpoint because they are the underlying basis for appealing to otherwise diverse consumers.

ZMET steps are described only briefly here. (An example application can be found in a *Journal of Advertising Research* article I coauthored in

1995 with Robin Coulter.) The specific steps and precise way they are used vary according to the project focus. However, the typical project involves most of the following activities.

### The Interview

A project topic might concern attitudes toward a company, experiences of product use or purchase, or perceptions of a product concept. Participants begin the one-on-one interview by telling a story of how each picture relates to the project topic, describing relevant images they could not locate, discussing the most representative picture, and describing an image that conveys what *is not* expressive of the concept.

Moving further into the interview, the Kelly Repertory Grid and laddering techniques are used with the images to elicit key ideas in yet a different way. The participant selects three images at random and is asked how any two are similar and yet different from the third. A person may indicate that two pictures are similar because they express a feeling of trust. The interviewer then uses a questioning process (laddering) to find out what leads to trust and what consequences trust may have within the context of the project topic.

This triadic sorting process and laddering on key constructs is repeated with several sets of randomly selected pictures.

A variety of photo and art therapy techniques are used to explore selected images from other perspectives. For instance, participants might be asked to widen the frame of a picture and describe what enters, or to step into the picture and describe their thoughts and actions, or possibly to tell secrets the picture might be holding about the topic. This often provides new ideas and richer information about thoughts expressed during the Kelly Grid and laddering process.

Next, we ask about nonvisual sensory images or metaphors. For example, we ask what is and is not the touch, taste, and smell associated with the project topic. Sometimes we focus this questioning on a salient aspect of the topic such as their most- or least-liked aspect of a shopping experience or brand. Certain probing techniques are used to help customers link these sensory images to the topic.

Following this, participants are asked to create a 30-60 second mind's eye video involving some of the more important ideas they have expressed. Sometimes, participants are also asked to create a diagram involving the key constructs that have surfaced thus far in the interview.

Finally, participants are asked to use digital imaging techniques to create a collage summarizing their thoughts and feelings. New ideas often arise during this activity. At the beginning of this step, participants are told about the digital imaging software capabilities. A specialist in computer graphics serves as their "hands" to help create on screen whatever they wish.

These specialists also are trained in all facets of the ZMET interviewing process. The participant chooses which images to include from the pictures he or she brought to the interview, and these are scanned into the computer. The participant then directs the graphic specialist in the design of the collage. When finished, the participant tells the story behind the digital image.

All interviews are tape-recorded and transcribed. Normally, between 15 and 20 participants are interviewed from the target consumer group. A project takes approximately six weeks. A written report, videotape, and interactive CD are deliverables.

#### Constructs and the Consensus Map

A construct is an abstraction created by the researcher to capture common ideas, concepts or themes expressed by consumers. For example, *ease of use* might be a construct capturing such consumer statements as "simple to operate," "works without hassle," and "you don't really have to do anything." It would also include statements such as "too cumbersome to use" and "unwieldy." The context in which such statements are made is important in determining the construct to which it belongs. A construct could be a value, such as *emotional comfort*, or a specific attribute such as *sleek*.

A major outcome of ZMET is a consensus map that normally contains between 20 and 30 constructs. These consensus maps usually represent over 80% of all constructs mentioned by any one participant. A verbal and visual dictionary for each construct is provided.

An example of a consensus map, referring to the thoughts and feelings customers have about a utility company, is shown in Exhibit 1. Although individual constructs have meaning, their real significance is found in the relationships between them. For example, responsiveness has added meaning when considered in relationship to appreciation, reliability, employees, and emotional comfort. The connections between constructs represent reasoning processes that are of primary concern when developing and implementing marketing strategy.

The map was based on a study of 20 consumers from a specified market segment. To appear on this

map, a construct had to be mentioned by at least nine participants and be directly connected by at least five participants to another construct mentioned by a least half the sample. The key constructs represent 87% of all constructs mentioned by participants.

When coding is completed, files are selected at random and the number of constructs mentioned in successive files, but not mentioned by previous files are noted. That is, we answer the question, "How many new constructs are added by each file selected randomly?" We repeat this procedure several times.

In this example, between three and five files (or participants) were required to generate all constructs. Essentially, the remaining 15-17 files serve to validate the ideas contained in the first three to five files. This same pattern occurs in all ZMET projects.

#### Presenting Results to Research Users

An important barrier frequently arises between researchers, managers, creative staffs, and others in the presentation of research results. Researchers often present findings in one way while those responsible for developing marketing strategy, creating product concepts and positioning, designing products, choosing point-of-purchase settings, and designing advertising, often think and ultimately must act in other ways.

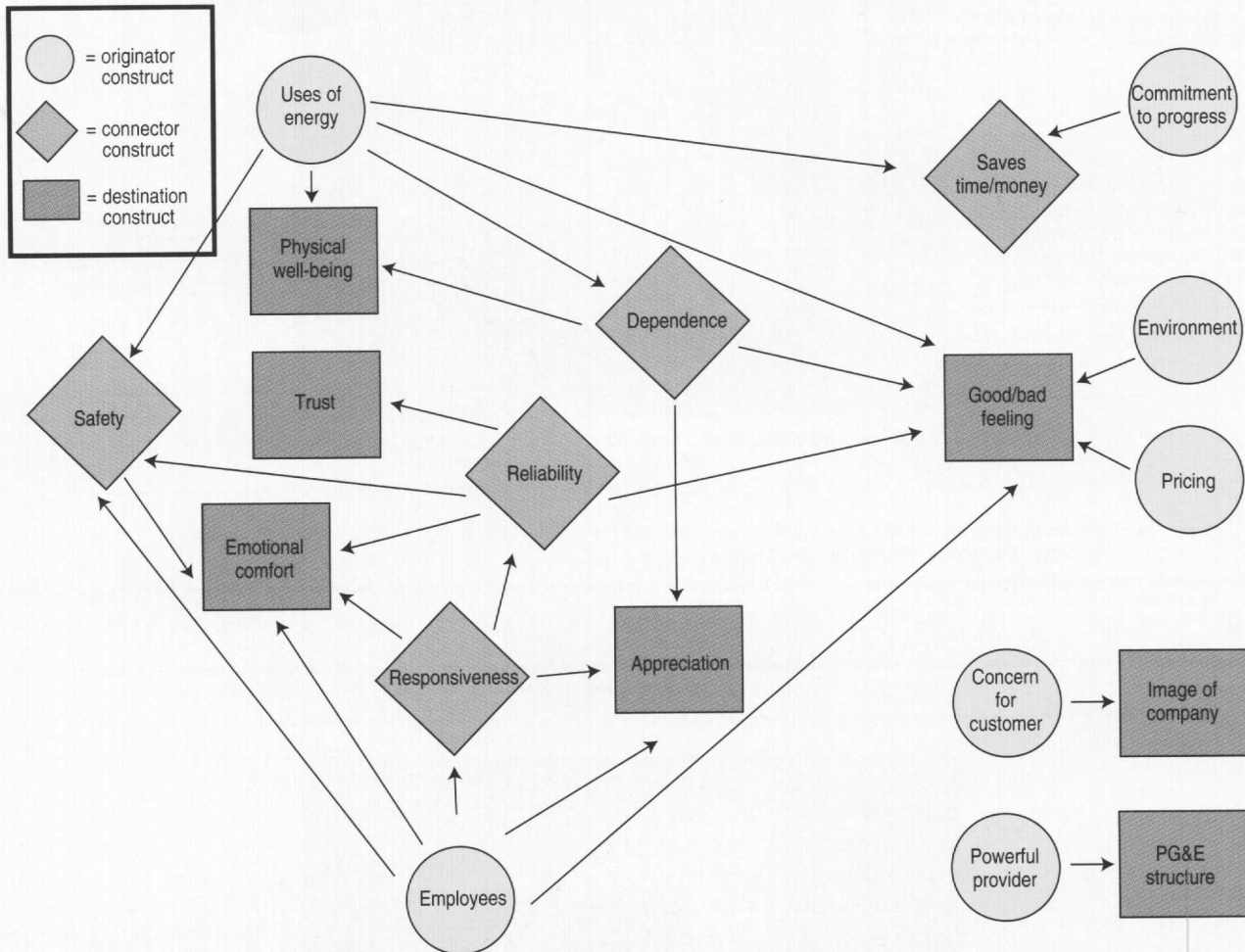
ZMET addresses this issue by creating interactive, multimedia reports for managers and other research users. Selected screen shots from a non-proprietary project about how senior executives approach ill-structured or messy problems are provided in Exhibits 2-5 on pages 18-19. These exhibits are presented with the navigational aids that are provided as hard copy.

A user can access the data in multiple ways. For example, as shown in Exhibit 2, the user might identify participants, click on a rollover button, and have that person's digital image appear (see Exhibit 3). Again, this is a collage-like image created with a computer at the end of the interview to summarize the participant's thinking. An audio description, taken directly from a tape recording of the interview, accompanies the image to preserve the participant's paralinguage. In most projects, the key constructs elicited by the image are identified on the computer screen.

Another way to access the data in this example is to go directly to the Thought Leader button, which brings the user to Exhibit 4. In selecting a thought leader, one views a sample of the visual and other sensory images that he or she used to express his or her approach to ill-structured problems during the

## Exhibit 1

### Consensus map: Customers' experience of a utility company



interview. Clicking on one of these images brings it to the full screen where that person's voice is heard describing the relevance of the metaphor.

Many other features are presented as well. Exhibit 5 is a frame from a QuickTime movie based on one participant's vignette representing how she views ill-structured problems.

These interactive efforts reduce barriers in several ways:

- They are user-inviting and meet one of the first design considerations for any information system: It must be fun to use.
- They preserve the original data and allow man-

agers more direct access to consumers' thoughts and feelings.

- Exposure to the original data facilitates managers' use of their accumulated knowledge and links their interpretations to those of the researchers.
- They clarify how researchers develop their interpretations.
- Managers can access information in multiple ways, thereby avoiding constraints on engaging the data that result from the linearity of written reports and videotape.

## Exhibit 2

### Main menu

When you roll over these buttons they give you information about that participant. When you click one of these buttons, you will see and hear their **digital image**.

By clicking on the "Module Info" button you will have a choice of seeing the **letter that the participants received, module information, or the full list of thought leaders** who participated.

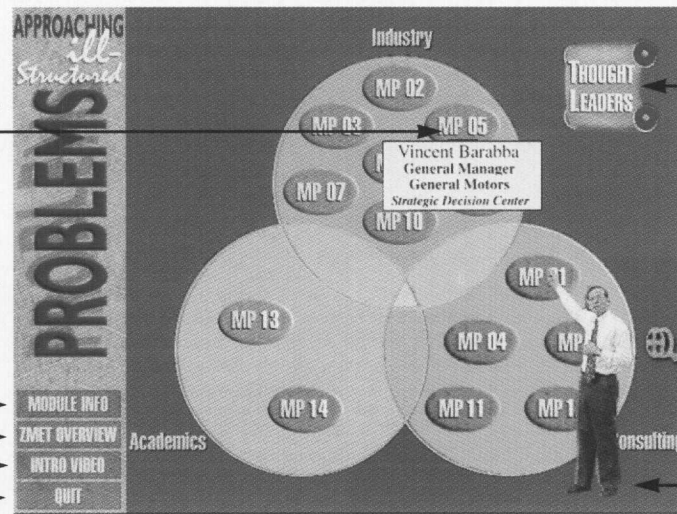
If you would like to **exit** the interactive at any time, click on the "Quit" button.

By clicking on the "Intro Video" button, you will see **Jerry's Introduction** to the exercise.

By clicking on the "ZMET Overview" button, you will be able to view a Quick Time movie about the **Zaltman Metaphor Elicitation Technique**.

The "Thought Leaders" button will take you to a **scrolling list** of the participants.

Click on the "Vignettes" button to view animated interpretations from the vignette section of the participant interview.



## Exhibit 3

### Digital images

Throughout the interactive, if you click on the "Main Menu" button, you will **go directly to the main menu**, pictured in the screen above.

The left arrow will bring you to the **previous digital image**

Click this **hear** sounds and **play** movies throughout the interactive.

The right arrow will bring you to the **next digital image**.

Adjust your **volume** with this.

The researchers **appear randomly** throughout this section—when they do, click on them and you will hear their **comments** to help you think about the digital image in a new way.

The "probes" button will take you to a general set of questions about the ideas expressed by the participants.

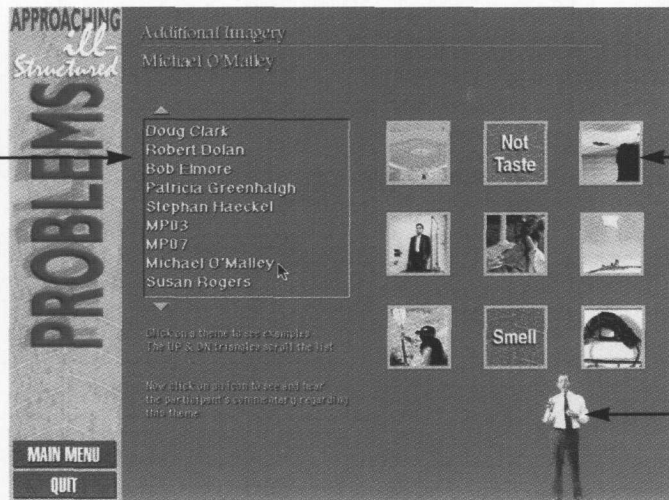




Exhibit 4

Scrolling list of participants

This is a scrolling list of the participants. When you **click on a participant's name**, their additional **images show up on the right**. Use the arrows above and below the names to scroll the list.



These icons of additional images addressed by this participant. Clicking on one will bring you to that **image**, where you can listen to the participant's thoughts and feelings about the topic.

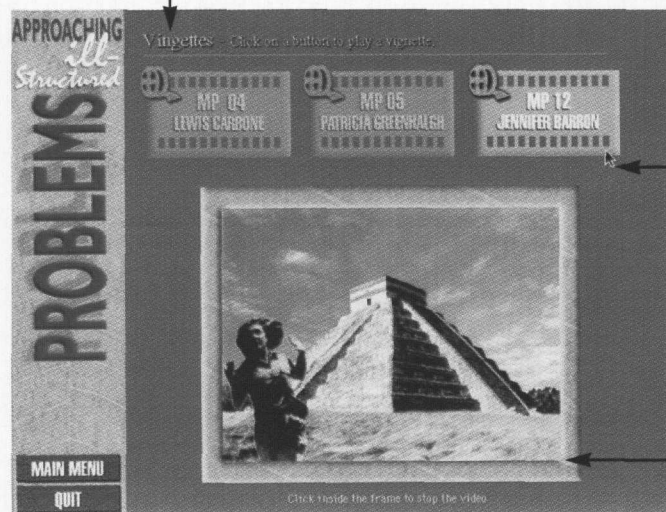
Professor Zaltman randomly appears throughout the interactive offering guidance.

Exhibit 5

Vignette section

The vignette section shows the researcher's creation of selected participant's vignettes.

The participant has created a 30 to 60 second video in their mind during the Vignette Step of the ZMET interview.



Click on a button to view a participant's vignette.

When a vignette has been selected, a **Quick Time movie plays in the frame**, as pictured here.

The researchers use video, images, and sounds to animate the participant's 30-60 second vision. The participant's audio describing the vignette narrates the movie as it is being viewed.

- Other interactive capacity allows managers the option to record reactions and share these selectively with other users.
- Researchers are able to present issues or thought probes about important findings that managers can access and attend to.
- Recent technological advances permit distribution of the interactive report directly over the Internet, by-passing the need to create and distribute CDs, have CD players, and coordinate platforms for using CDs.

#### PAST AND FUTURE USES

ZMET has been developed and refined in the past few years in diverse projects conducted with over 20 firms, including AT&T, Coca-Cola, DuPont, Eastman Kodak, General Motors, Lifetime Television, Monitor Co., Pacific Gas and Electric, Polaroid, and Reebok. Several early pro-

jects were conducted as validation studies, and applications have ranged from the meaning of a specific candy bar to the approach senior executives use when considering ill-structured or messy problems.

The technique is now being modified for use with multi-member units of analysis such as married couples and management teams. Early results from these efforts are very encouraging. **MR**

#### ACKNOWLEDGMENTS

The author would like to thank the Division of Research of the Harvard Business School for its continuing support of this project and the Marketing Science Institute for its past support. Special credit is due to Marion Finkle and Nicole Raynard who are the primary architects of the interactive reports illustrated by the exhibits.

#### ADDITIONAL READING

- Bickerton, Derek (1990), *Language and Species*. Chicago: The University of Chicago Press.
- Burgoon, Judee K., David B. Buller, and W. Gill Woodall (1989), *Nonverbal Communication: The Unspoken Dialogue*. New York: Harper and Row.
- Damasio, Antonio (1994), *Descartes' Error: Emotion, Reason, and the Human Brain*. New York: G.P. Putnam's Sons.
- de Sousa, Ronald (1987), *The Rationality of Emotion*. Cambridge, MA: The MIT Press.
- Edelman, Gerald M. (1992), *Bright Air, Brilliant Fire: On the Matter of the Mind*. New York: Basic Book.
- Gibbs, Raymond W. Jr. (1994), *The Poetics of Mind: Figurative Thought, Language, and Understanding*. Cambridge, MA: Cambridge University Press.
- Johnson, Mark (1987), *The Body in the Mind: The Bodily Basis of Meaning, Imagination, and Reason*. Chicago: The University of Chicago Press.
- Kosslyn, Stephen M. and Olivier Koenig (1992), *Wet Mind: The New Cognitive Neuroscience*. New York: The Free Press.
- Lakoff, George (1987), *Women, Fire, and Dangerous Things: What Categories Reveal about the Mind*. Chicago: The University of Chicago Press.
- Lakoff, George and Mark Johnson (1980), *Metaphors We Live By*. Chicago: The University of Chicago Press.
- Pinker, Steven (1994), *The Language Instinct: How the Mind Creates Language*. Cambridge, MA: The MIT Press.
- Poyatos, Fernando (1993), *Paralanguage: A Linguistic and Interdisciplinary Approach to Interactive Speech and Sound*. Philadelphia: John Benjamins Publishing Co.
- Schacter, Daniel L. (ed.) (1995), *Memory Distortion: How Minds, Brains, and Societies Reconstruct the Past*. Cambridge, MA: Harvard University Press.
- Schank, Roger C., (1990), *Tell Me A Story: A New Look at Real and Artificial Memory*. New York: Charles Scribner's Sons.
- Varela, Francisco J., Evan Thompson, and Eleanor Rosch (1991), *The Embodied Mind: Cognitive Science and Human Experience*. Cambridge, MA: The MIT Press.
- Weiser, Judith (1993), *Photo-Therapy Techniques: Exploring the Secrets of Personal Snapshots and Family Albums*. San Francisco: Jossey-Bass Publishers.
- Zaltman, Gerald and Robin H. Coulter (1995), "Seeing the Voice of the Customer: Metaphor-Based Advertising Research," *Journal of Advertising Research*, 35 (July/August), 35-51.



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