

# **TIME'S ARROW IS BENT INTO A LOOP**

**ENDEL TULVING (1927—)**









## IN CONTEXT

## APPROACH

## Memory studies

## BEFORE

**1878** Hermann Ebbinghaus conducts the first scientific study of human memory.

**1927** Bluma Zeigarnik describes how interrupted tasks are better remembered than uninterrupted ones.

**1960s** Jerome Bruner stresses the importance of organization and categorization in the learning process.

## AFTER

**1979** Elizabeth Loftus looks at distortions of memory in her book *Eyewitness Testimony*.

**1981** Gordon H. Bower makes the link between events and emotions in memory.

**2001** Daniel Schacter publishes *The Seven Sins of Memory: How the Mind Forgets and Remembers*.

**Episodic memory** is made up of events and experiences that are stored in long-term memory.

It is distinct from **semantic memory**, which is our long-term memory store for facts and knowledge.

Memories of our experiences are **associated with particular times and places** and can be triggered by these cues.

Associated **sensory cues** such as a particular song or scent can also help us recall seemingly complete memories of past events.

Only humans can **"travel back in time"** to reflect on their experiences in this way...

**...as if time's arrow is bent into a loop.**

**M**emory was one of the first fields of study for psychologists in the 19th century, as it was closely connected with the concept of consciousness, which had formed the bridge between philosophy and psychology. Hermann Ebbinghaus in particular devoted much of his research to the scientific study of memory and learning, but the next generation of psychologists turned their attention to a behaviorist study of learning, and "conditioning" replaced memory as the focus of research. Apart from a few isolated

studies, notably by Bluma Zeigarnik and Frederic Bartlett in the 1920s and 30s, memory was largely ignored as a topic until the "cognitive revolution" took place following World War II. Cognitive psychologists began to explore the idea of the brain as an information processor, and this provided a model for the storage of memory: it was seen as a process, whereby some items passed from short-term or working memory into long-term memory.

By the time Endel Tulving finished his doctorate in 1957, memory was once more a central

area of study. Forced to abandon the study of visual perception due to a lack of facilities, Tulving turned his attention to memory. The funding deficit also shaped his approach to the subject, designing experiments that used no more than a pen, some paper, and a supply of index cards.

**The free-recall method**

Learning about the subject as he went along, Tulving worked in a rather unorthodox way, which occasionally earned him criticism from his peers, and was to make



**See also:** Hermann Ebbinghaus 48–49 ■ Bluma Zeigarnik 162 ■ George Armitage Miller 168–73 ■ Gordon H. Bower 194–95 ■ Elizabeth Loftus 202–07 ■ Daniel Schacter 208–09 ■ Roger Brown 237 ■ Frederic Bartlett 335

publishing his results difficult. His maverick instincts did, however, lead to some truly innovative research. One hurriedly designed, *ad hoc* demonstration to a class of students in the early 1960s was to provide him with the model for many later experiments. He read out a random list of 20 everyday words to the students, and then asked them to write down as many as they could recall, in any order. As he expected, most of them managed to remember around half of the list. He then asked them about the words that they had not remembered, giving hints such as "Wasn't there a color on the list?," after which the student could often provide the correct answer.

Tulving developed a series of experiments on this "free recall" method, during which he noticed that people tend to group words together into meaningful categories;

































the better they organize the information, the better they are able to remember it. His subjects were also able to recall a word when given a cue in the form of the category (such as "animals") in which they had mentally filed that word. Tulving concluded that although all the words memorized from the list were actually available for remembering, the ones that were organized by subject were more readily accessible to memory, especially when the appropriate cue was given.

### Memory types

Where previous psychologists had concentrated on the process of storing information, and the failings of that process, Tulving made a distinction between two different processes—storage and retrieval of information—and showed how the two were linked.

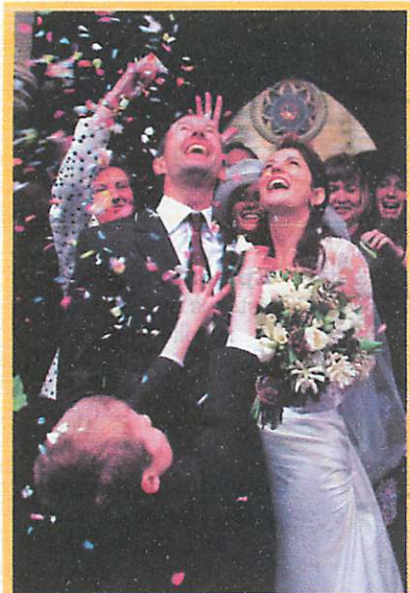
In the course of his research, Tulving was struck by the fact that there seemed to be different kinds of memory. The distinction between long-term memory and short-term memory had already been established, but Tulving felt there was more than one kind of long-term memory. He saw a difference between memories that are knowledge-based (facts and data), and those that are experience-based (events and conversations). He proposed a division of long-term memory into two distinct types: semantic memory, the store of facts; and episodic memory, the repository of our personal history and events.

Tulving's experiments had demonstrated that organization of semantic information, such as lists of words, helps efficient recollection, and the same appeared to be true of episodic memory. But where »

				ANIMALS	FOOD
					
					
					
					
				TRANSPORTATION	TOOLS
					
					
					
					

**In Tulving's free recall experiments,** people were asked to remember as many words as possible from a random list. "Forgotten" words were often recalled using category cues. They were stored in memory but temporarily inaccessible.





Remembering is  
mental time travel.  
**Endel Tulving**

**Emotional events such as weddings** give rise to episodic memories. These are stored in such a way that the person remembering relives the event, in a form of "time travel."

semantic memories are organized into meaningful categories of subject matter, episodic memories are organized by relation to the specific time or circumstances in which they were originally stored. For example, a particular conversation may have taken place during a birthday dinner, and the memory of what was said would be stored in association with that occasion. Just as the category of "city" might

provide a retrieval cue for the semantic memory "Beijing," the mention of "40th birthday" might act as a cue for the retrieval of what had been said over that dinner. The more strongly these autobiographical memories are associated with the time and circumstances of their occurrence, the greater their accessibility is likely to be. "Flashbulb memories," which are stored when a highly

### Endel Tulving



Born the son of a judge in Tartu, Estonia, Endel Tulving was educated at a private school for boys, and although a model student, he was more interested in sports than academic subjects. When Russia invaded in 1944, he and his brother escaped to Germany to finish their studies and did not see their parents again until the death of Stalin 25 years later. After World War II, Tulving worked as a translator for the American army and briefly attended medical school before emigrating to Canada in 1949. He was accepted as a student at the

memorable event—such as the 9/11 terrorist attacks—occurs, are an extreme example of this.

Tulving described recollection from episodic memory as "mental time travel," involving us in a revisiting of the past to access the memory. In his later work he pointed out that episodic memory is unique in featuring a subjective sense of time. Specific to humans, it involves not merely awareness of what has been, but also of what may come about. This unique ability allows us to reflect on our lives, worry about future events, and make plans. It is what enables humankind to "take full advantage of its awareness of its continued existence in time" and has allowed us to transform the natural world into one of numerous civilizations and cultures. Through this facility, "time's arrow is bent into a loop."

### Encoding information

Tulving realized that organization is the key to efficient recall for both semantic and episodic memory, and that the brain somehow organizes information so that specific facts and events are "pigeonholed" with related items. Recalling that specific

University of Toronto, where he graduated in psychology in 1953, and took his MA degree in 1954. He then moved to Harvard where he gained a PhD for his thesis on visual perception. In 1956, Tulving returned to the University of Toronto, where he continues to teach to this day.

### Key works

**1972** *Organization of Memory*  
**1983** *Elements of Episodic Memory*  
**1999** *Memory, Consciousness, and the Brain*



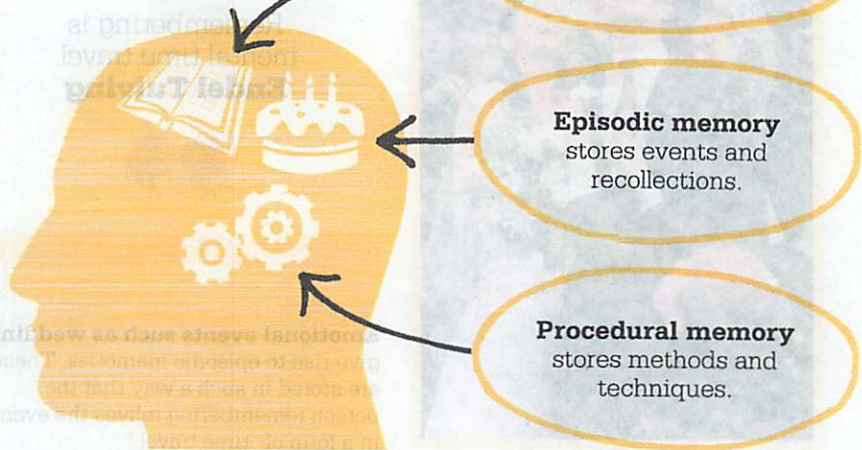
information is then made easier by direction to the appropriate pigeonhole—the brain “knows where to look” for the memory it wants and can narrow down the search. The implication, he believed, is that the brain encodes each memory for storage in long-term memory, so that specific memories can be located for recollection by a more general retrieval cue. The cues that prompt episodic memory are usually sensory. A specific sound, such as a piece of music, or a scent can trigger a complete memory.

Tulving's theory of the “encoding specificity principle” was especially applicable to episodic memory. Memories of specific past events are encoded according to the time of their occurrence, along with other memories of the same time. He found that the most effective cue for retrieving any specific episodic memory is the one which overlaps with it most, since this is stored together with the memory to be retrieved. Retrieval cues are necessary to access episodic memory, but not always sufficient, because sometimes the relationship is not close enough to allow

Relating what we know about the behavior of memory to the underlying neural structures is not at all obvious. That's real science.

**Endel Tulving**

**Different types of memory** are physically distinct, according to Tulving, because each behaves and functions in a significantly different way.



recollection, even though the information is stored and available in long-term memory.

Unlike previous theories of memory, Tulving's encoding principle made a distinction between memory that is available and that which is accessible. When someone is unable to recall a piece of information, it does not mean that it is “forgotten” in the sense that it has faded or simply disappeared from long-term memory; it may still be stored, and therefore be available—the problem is one of retrieval.

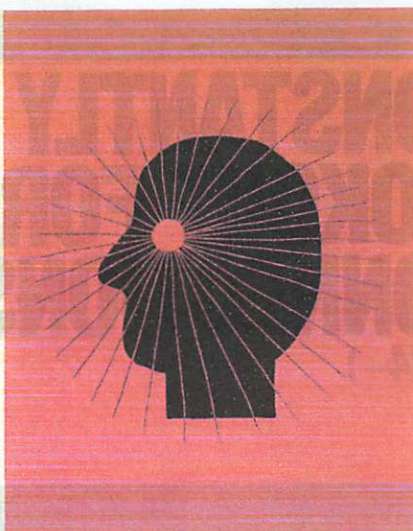
### Scanning for memory

Tulving's research into the storage and retrieval of memory opened up a whole new area for psychological study. The publication of his findings in the 1970s coincided with a new determination by many cognitive psychologists to find confirmation of their theories in neuroscience, using brain-imaging techniques that had just become available. In conjunction with neuroscientists, Tulving was able to map the areas of the brain that

are active during encoding and retrieval of memory, and establish that episodic memory is associated with the medial temporal lobe and, specifically, the hippocampus.

Partly due to his unorthodox and untutored approach, Tulving made innovative insights that proved inspirational to other psychologists, including some of his former students such as Daniel Schacter. Tulving's focus on storage and retrieval provided a new way of thinking about memory, but it was perhaps his distinction between semantic and episodic memory that was his breakthrough contribution. It allowed subsequent psychologists to increase the complexity of the model to include such concepts as procedural memory (remembering how to do something), and the difference between explicit memory (of which we are consciously aware) and implicit memory (of which we have no conscious awareness, but which nonetheless continues to affect us). These topics remain of great interest to cognitive psychologists today. ■





# PERCEPTION IS EXTERNALLY GUIDED HALLUCINATION

ROGER N. SHEPARD (1929–)

## IN CONTEXT

### APPROACH Perception

#### BEFORE

**1637** René Descartes in his treatise *Discourse on the Method* suggests that though our senses can be deceived, we are thinking beings with innate knowledge.

**1920s** Gestalt theorists study visual perception, finding that people tend to view objects comprising composite parts as a unified whole.

**1958** Donald Broadbent's book *Perception and Communication* introduces a truly cognitive approach to the psychology of perception.

#### AFTER

**1986** American experimental psychologist Michael Kubovy publishes *The Psychology of Perspective and Renaissance Art*.

**H**ow the mind makes use of information gathered from the external world has been a major concern for philosophers and psychologists throughout history. Exactly how do we use the information gained through our senses? In the early 1970s, cognitive and mathematical psychologist Roger Shepard proposed new theories of how the brain processes "sense data."

Shepard argued that our brains not only process sense data, but also make inferences from it, based on an internal model of the physical world where we can visualize objects in three dimensions. The experiment he used to prove this, in which subjects tried to ascertain whether two tables—each drawn from a different angle—were the same, showed that we are able to perform what Shepard called "mental rotation:" turning one of the tables in our mind's eye for comparison.

Shepard used a series of optical (and aural) illusions to demonstrate that our brains interpret sense data using both knowledge of the external



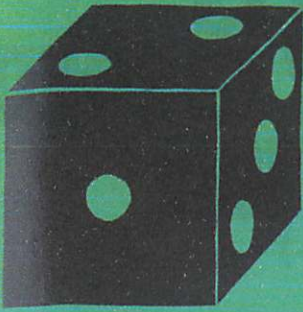
**An optical illusion** creates confusion in the viewer, demonstrating that we are not just perceiving, but also attempting to fit the sensory data to what we already understand in the mind's eye.

world and mental visualization. Perception, Shepard said, is "externally guided hallucination," and he described the processes of dreaming and hallucination as "internally simulated perception."

Shepard's research introduced revolutionary techniques for identifying the hidden structure of mental representations and processes. His work in visual and auditory perception, mental imagery, and representation has influenced generations of psychologists. ■

**See also:** René Descartes 20–21 ■ Wolfgang Köhler 160–61 ■ Jerome Bruner 164–65 ■ Donald Broadbent 178–85 ■ Max Wertheimer 335





# WE ARE CONSTANTLY ON THE LOOKOUT FOR CAUSAL CONNECTIONS

DANIEL KAHNEMAN (1934–)

## IN CONTEXT

### APPROACH

#### Prospect theory

### BEFORE

**1738** The Dutch-Swiss mathematician Daniel Bernoulli proposes the expected utility hypothesis to explain decision-making preferences in situations involving risk.

**1917** Wolfgang Köhler publishes *The Mentality of Apes*—his study of problem-solving in chimpanzees.

**1940s** Edward Tolman's studies on animal behavior open up a new area of research into motivation and decision-making.

### AFTER

**1980** US economist Richard Thaler publishes the first paper on the subject of behavioral economics: *Toward a Positive Theory of Consumer Choice*.

**U**ntil very recently, our perception of risk and the way that we make our decisions was considered to be more a matter of probability and statistics than psychology. However, cognitive psychology, with its emphasis on mental processes, brought the concepts of perception and judgment to the field of problem-solving, with some surprising results.



After observing a long run of red on the roulette wheel, most people erroneously believe that black is now due.

**Daniel Kahneman & Amos Tversky**



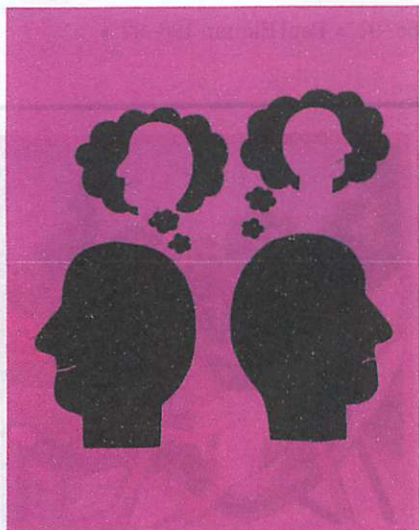
Israeli-American Daniel Kahneman, with Amos Tversky, reexamined theories of how we make decisions when faced with uncertainty, in *Judgment under Uncertainty: Heuristics and Biases* (1974). They found the general belief that people made decisions based on statistics and probability was not true in practice. Instead, people base their decisions on “rule of thumb”—on specific examples or small samples. Consequently, judgments can frequently be wrong, because they are based on information that comes easily to mind, rather than that has actual probability.

Kahneman and Tversky noticed this experience-based method of problem-solving has a pattern: we tend to overestimate the likelihood of things with low probability (such as a plane crash), and underestimate those with a higher probability (such as crashing while driving drunk).

These findings formed the basis of Kahneman and Tversky's prospect theory, proposed in 1979, and led to the collaborative field of psychology known as behavioral economics. ■

**See also:** Edward Tolman 72–73 ■ Wolfgang Köhler 160–61





# EVENTS AND EMOTION ARE STORED IN MEMORY TOGETHER

GORDON H. BOWER (1932–)

## IN CONTEXT

### APPROACH

#### Memory studies

#### BEFORE

**1927** Bluma Zeigarnik describes the “Zeigarnik effect” of interrupted tasks being better remembered than uninterrupted ones.

**1956** George Armitage Miller’s *The Magical Number 7, Plus or Minus 2* provides a cognitive model for storage in short-term memory.

**1972** Endel Tulving makes a distinction between semantic and episodic memory.

#### AFTER

**1977** Roger Brown coins the term “flashbulb memory” for autobiographical memory connected with highly emotional events.

**2001** Daniel Schacter publishes *The Seven Sins of Memory*, which categorizes the ways that memory can fail.

When we are in a **happy mood**, we tend to store in memory the **positive things** that happen...

When we are in an **unhappy mood**, we tend to store in memory the **negative things** that happen...

...because we **pay more attention** to the information that **agrees with our mood**.

**Events and emotion are stored in memory together.**

When we are **happy**, we find it easier to recall memories from a **happy time**.

When we are **unhappy**, we find it easier to recall memories from an **unhappy time**.



**See also:** Bluma Zeigarnik 162 ■ George Armitage Miller 168–73 ■ Endel Tulving 186–91 ■ Paul Ekman 196–97 ■ Daniel Schacter 208–09 ■ Roger Brown 237

**T**he 1950s saw a revival of interest in the study of memory. Increasingly sophisticated models of short- and long-term memory were developed, in order to explain how information is selected, organized, stored, and retrieved. The ways in which memories could be forgotten or distorted were also identified.

### Memory and mood

By the 1970s, the focus in learning theory and memory had moved to investigating why some memories are better stored or more easily retrieved than others. One of the foremost psychologists in the field, Gordon H. Bower, had noticed that emotion appeared to impact on memory. Bower carried out studies in which people learned lists of words while in different moods, and later had to recall them, again when in varying emotional states. He uncovered what he called “mood-dependent retrieval:” whatever a person has learned when unhappy is easier to recall when they are again unhappy. Bower concluded

that we form an association between our emotional state and what is going on around us, and the emotion and the information are stored in memory together. It is then easier to recall facts that we learned when we were in the same mood as we are when recollecting them.

Bower also discovered that emotion plays a part in the type of information that the brain stores. When we are happy, he observed that we tend to notice—and therefore remember—positive things; when we are sad, negative things attract our attention and are committed to memory more easily. For example, Bower found that unhappy people recalled details of a sad story better than those who were happy when they read it. He called this “mood-congruent processing,” and concluded that episodic memory—of events, not just words or facts—is especially linked to emotions. The events and emotions are stored together, and we remember best the events that match our mood, both when they occurred, and when recalling them.



**An idyllic vacation**, according to Bower, is more easily recalled when we are in a happy mood. Bad memories of the trip are likely to be forgotten, or only remembered when we are unhappy.

Bower’s findings led him to study people in various emotional states, retrospectively observing their videotaped interactions with others. Memory and judgement of past behavior varied with current mood. This research helped Bower to refine his ideas about emotion and memory, and inspired further psychological examination of the role emotions play in our lives. ■

### Gordon H. Bower

Gordon H. Bower was brought up in Scio, Ohio. At high school, he was more interested in baseball and playing jazz than studying, until a teacher introduced him to the works of Sigmund Freud. He went on to graduate in psychology at Case Western Reserve University, Cleveland, switching to Yale for his PhD in learning theory, which he completed in 1959.

From Yale, Bower moved on to the internationally acclaimed psychology department of

Stanford University, California, where he taught until his retirement in 2005. His research there helped to develop the field of cognitive science, and in 2005 Bower was awarded the US National Medal of Science for his contributions to cognitive and mathematical psychology.

### Key works

**1966, 1975** *Theories of Learning* (with Ernest Hilgard)

**1981** *Mood and Memory*

**1991** *Psychology of Learning and Motivation* (Volume 27)

“

People who are happy during the initial experience learn the happy events better; angry people learn anger-provoking events better.

**Gordon H. Bower**

”





# EMOTIONS ARE A RUNAWAY TRAIN

PAUL EKMAN (1934–)

## IN CONTEXT

### APPROACH

#### Psychology of emotions

### BEFORE

**1960s** The study of isolated tribal communities by American anthropologist Margaret Mead suggests that facial expressions are culture-specific.

**1960s** American psychologist Silvan Tomkins (Ekman's mentor) proposes his Affect Theory of Emotions, distinct from the basic Freudian drives of sex, fear, and the will to live.

**1970s** Gordon H. Bower uncovers and defines the links between emotional states and memory.

### AFTER

**2000s** The findings of Ekman's work on facial expressions and deception are incorporated into security procedures used by public transport systems.

**E**motions, and more especially emotional disorders, played a large part in psychotherapy from its beginnings, but they were seen more as symptoms to be treated than as something to be examined in their own right. One of the first to realize that emotions deserved as much attention as thought processes, drives, and behavior was Paul Ekman, who came to the subject through his research into nonverbal behavior and facial expressions.

When Ekman began his research in the 1970s, it was assumed that we learn to physically express emotions according to a set of social conventions, which differ from culture to culture. Ekman traveled widely to all corners of the world, first photographing people in the "developed countries," such as Japan and Brazil, and then people in far-flung, cut-off places without access to radio or television, such as the jungles of Papua New Guinea. He found tribespeople could interpret facial expressions as

Emotions can and often do **start before our conscious mind is aware** of them.

Emotions can **override** some of our most **fundamental drives** (disgust can override hunger).

It is therefore **difficult to control** what we become emotional about.

**Emotions are powerful and difficult to hold back, like a runaway train.**



See also: William James 38–45 ■ Gordon H. Bower 194–95 ■ Nico Frijda 324–25 ■ Charlotte Bühler 336 ■ René Diatkine 338 ■ Stanley Schachter 338

### The Six Basic Emotions



Anger



Disgust



Fear



Happiness



Sadness



Surprise

well as anyone in more globally-aware countries, which suggests that facial expressions are universal products of human evolution.

#### Basic emotions

Ekman came up with six basic emotions—anger, disgust, fear, happiness, sadness, and surprise—and because of their ubiquity, concluded they must be important to psychological make-up. He noted that facial expressions linked to these emotions are involuntary—we react automatically to things that trigger these emotional responses—and that this reaction often happens before our conscious

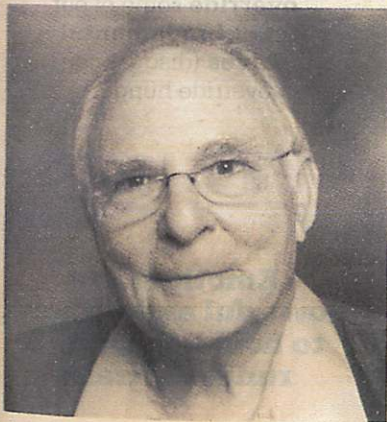
mind has time to register the causes of that emotion. Ekman inferred not only that our faces can reveal our inner emotional state, but that the emotions responsible for these involuntary expressions are more powerful than psychologists had previously thought.

In *Emotions Revealed*, Ekman states that emotions can be more powerful than the Freudian drives of sex, hunger, and even the will to live. For example, embarrassment or fear can override libido, preventing a satisfactory sex life. Extreme unhappiness can override the will to live. The power of the “runaway train” of emotions convinced

Ekman that a better understanding of emotions would help to overcome some mental disorders. We may be unable to control our emotions, but we may be able to make changes to the things that trigger them and the behavior they lead to.

Running parallel to his work on emotions, Ekman pioneered research into deception and the ways we try to hide our feelings. He identified small tell-tale signs, which he called “microexpressions,” detectable when someone is either consciously or unconsciously concealing something. This has proved useful in devising security measures to counter terrorism. ■

#### Paul Ekman



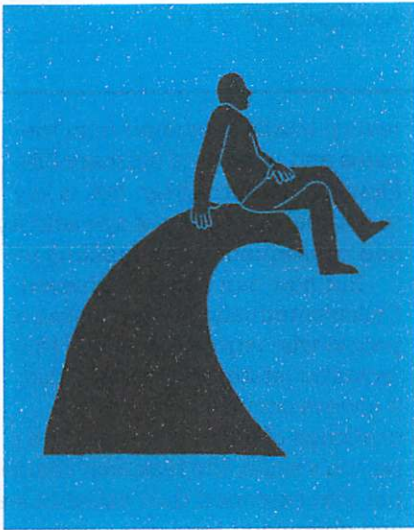
Paul Ekman was born and spent his early childhood in Newark, New Jersey. At the outbreak of World War II, his family moved west to Washington, then Oregon, and eventually southern California. Aged just 15, Ekman took up a place at the University of Chicago, where he became interested in Freud and psychotherapy, and went on to study for his doctorate in clinical psychology at Adelphi University, New York. After a brief spell working for the US Army, he moved to the University of California, San Francisco (UCSF), where he began his research into

nonverbal behavior and facial expressions. This work led to his studies of the concealment of emotions in facial expressions, which in turn took Ekman deep into the then-unexplored field of the psychology of emotions. He was appointed Professor of Psychology at UCSF in 1972, and remained there until his retirement in 2004.

#### Key works

1985 *Telling Lies*  
2003 *Emotions Revealed*  
2008 *Emotional Awareness*





## IN CONTEXT

### APPROACH

#### Positive psychology

### BEFORE

**1943** Abraham Maslow's *A Theory of Human Motivation* lays the foundations for a humanistic psychology.

**1951** Carl Rogers publishes *Client-Centered Therapy*, a humanistic approach to psychotherapy.

**1960s** Aaron Beck introduces cognitive therapy as an alternative to psychoanalysis.

**1990s** Martin Seligman switches from "learned helplessness" and depression to "positive psychology."

### AFTER

**1997** Csikszentmihályi works on The GoodWork Project with William Damon and Howard Gardner, publishing *Good Work: When Excellence and Ethics Meet* and *Good Business: Leadership, Flow, and the Making of Meaning* in 2002.

# ECSTASY IS A STEP INTO AN ALTERNATIVE REALITY

MIHALY CSIKSZENTMIHALYI (1934–)

**D**uring the "cognitive revolution," there was a growing movement in clinical psychology away from seeing patients solely in terms of their disorders, toward a more holistic, humanistic approach. Psychologists such as Erich Fromm, Abraham Maslow, and

Carl Rogers were beginning to think about what constituted a good and happy life, rather than merely alleviating the misery of depression and anxiety. From this grew a movement of "positive psychology," which concentrated on finding ways to achieve this good and happy life.

When we engage in an **activity that we enjoy** and that gives enough challenge to our skills...

...we become absorbed in that activity and reach a **state of "flow"** in which...

...we are  
totally  
**focused.**

...we feel a  
sense of  
**serenity.**

...we feel a  
sense of  
**timelessness.**

...we have a  
feeling of  
inner **clarity.**

Above all, we are **not conscious of ourselves** or the world around us.

Flow is similar to a **state of ecstasy.**



See also: Erich Fromm 124–29 ■ Carl Rogers 130–37 ■ Abraham Maslow 138–39 ■ Aaron Beck 174–77 ■ Martin Seligman 200–01 ■ Jon Kabat-Zinn 210



A good jazz musician will pass into an almost trancelike state when he is playing. Engulfed by the ecstatic feeling of "flow," he becomes totally absorbed by his music and performance.

Central to the new psychology was the concept of "flow," devised by Mihály Csíkszentmihályi in the 1970s, and fully explained in his book *Flow: The Psychology of Optimal Experience* in 1990. The idea came to him from interviewing people who appeared to get a lot out of life, either in their work or their leisure activities—not only creative professionals such as artists and musicians, but people from all walks of life, including surgeons and business leaders, and those who found satisfaction in pursuits such as sports and games.

### Mihály Csíkszentmihályi



Csíkszentmihályi found that all these people described a similar sensation when they were totally engaged in an activity they enjoyed and could do well. They all reported achieving a state of mind with no sense of self, in which things came to them automatically—a feeling of "flow." It starts, he said, with "a narrowing of attention on a clearly defined goal. We feel involved, concentrated, absorbed. We know what must be done, and we get immediate feedback as to how well we are doing." A musician knows instantly if the notes he plays sound as they should; a tennis player knows the ball he hits will reach its destination.

### State of ecstasy

People experiencing flow also describe feelings of timelessness, clarity, and serenity, which led Csíkszentmihályi to liken it to a state of ecstasy (in its truest sense, from the Greek *ekstasis*, meaning "being outside oneself"). A major part of the enjoyment of flow is the sense of being outside everyday

reality, totally separated from the cares and worries of ordinary life. Flow, Csíkszentmihályi felt, is key to optimal enjoyment of any activity, and consequently to a fulfilling life.

But how can flow be achieved? Csíkszentmihályi studied cases of people who regularly reached this "ecstatic" state, and realized that it always occurred when the challenge of an activity matched a person's skills; the task was doable, but also extended their capabilities and demanded total concentration. Only a reasonable balance of ability and difficulty could lead to flow. If someone's skills were not up to the task, this led to anxiety, and if the task was too easily done, it led to boredom or apathy.

Csíkszentmihályi's concept of flow was eagerly picked up by other advocates of positive psychology, and became an integral part of this new, optimistic approach. Csíkszentmihályi himself saw flow as a vital element in activity of all kinds, and thought it especially important in making work more rewarding and meaningful. ■

Mihály Csíkszentmihályi was born in Fiume, Italy (now Rijeka, Croatia), where his father was posted as a Hungarian diplomat. The family became exiles in Rome when Hungary was taken over by the Communists in 1948.

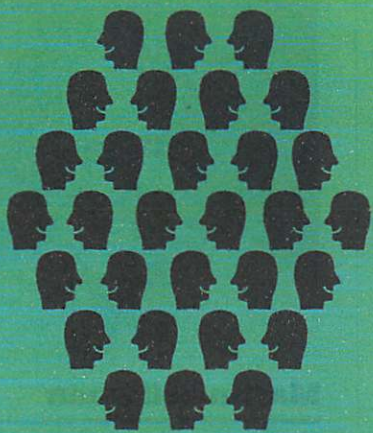
As a teenager, Csíkszentmihályi attended a talk given by Carl Jung in Switzerland, which inspired him to study psychology. A scholarship brought him to the University of Chicago; he graduated in 1959, and received his PhD in 1965. While still a student, he married the writer Isabella Selenga, and in 1968 became a US citizen.

Csíkszentmihályi remained at the University of Chicago, teaching and developing his ideas on "flow," from 1969 to 2000, when he was appointed Professor of Psychology and Management at Claremont Graduate University, California.

### Key works

1975 *Beyond Boredom and Anxiety*  
1990 *Flow: The Psychology of Optimal Experience*  
1994 *The Evolving Self*  
1996 *Creativity*





# HAPPY PEOPLE ARE EXTREMELY SOCIAL

MARTIN SELIGMAN (1942–)

## IN CONTEXT

### APPROACH

#### Positive psychology

### BEFORE

**1950s** Carl Rogers develops the concept and practice of “client-centered” therapy.

**1954** Abraham Maslow uses the term “positive psychology” for the first time, in his book *Motivation and Personality*.

**1960s** Aaron Beck exposes the weaknesses of traditional psychoanalytical therapy, and proposes cognitive therapy.

### AFTER

**1990** Mihály Csíkszentmihályi publishes *Flow: The Psychology of Optimal Experience*, based on his research into the links between meaningful, engaging activity and happiness.

**1994** Jon Kabat-Zinn’s *Wherever You Go, There You Are* introduces the idea of “mindfulness meditation” to cope with stress, anxiety, pain, and illness.

There are three kinds of happy life.

**The Good Life**—pursuing personal growth and achieving “flow.”

**The Meaningful Life**—acting in the service of something greater than yourself.

**The Pleasant Life**—socializing and seeking pleasure.

These **bring lasting happiness**, but this happiness cannot be achieved without social relationships.

**Social relationships do not guarantee high happiness, but it does not appear to occur without them.**

**W**hile experimental psychology after World War II became deeply concerned with the cognitive processes of the brain, clinical psychology continued to examine ways to treat disorders such as depression and anxiety. The new

cognitive therapies still focused largely on alleviating unhappy conditions rather than on creating and promoting happier ones. Martin Seligman, whose theory of “learned helplessness” (the spiral of acquiring pessimistic attitudes in illnesses such as depression) had



See also: Erich Fromm 124–29 ■ Carl Rogers 130–37 ■ Abraham Maslow 138–39 ■ Aaron Beck 174–77 ■ Mihály Csikszentmihályi 198–99 ■ Jon Kabat-Zinn 210

“

Good social relationships are, like food and thermoregulation, universally important to human mood.

**Martin Seligman**

”

led to more successful treatments in the 1980s, believed that what psychology offered was good, but it could offer more. He felt that therapy should be “as concerned with strength as with weakness; as interested in building the best things in life as repairing the worst.” Having studied philosophy, he likened the task of his “positive psychology” to that of Aristotle seeking *eudaimonia*—“the happy life.” Like his philosophical forebears, Seligman found this was not a matter of relieving or removing things that make us unhappy, but of encouraging those things that might make us happy—and first he had to discover what they were.

### “Happy” lives

Seligman noticed that extremely happy, fulfilled people tend to get on with others, and enjoy company. They seemed to lead what he called “the pleasant life,” one of the three distinct types of “happy” life that he identified, the others being “the good life” and “the meaningful life.” The pleasant life, or seeking as

much pleasure as possible, appeared to bring happiness, though Seligman found this was often short-lived. Less obviously, the good life, or being successfully engaged in relationships, work, and play, gave a deeper, more lasting happiness. Similarly, the meaningful life, or acting in the service of others or something bigger than oneself, led to great satisfaction and fulfillment.

Seligman also observed that good and meaningful lifestyles both involve activities that his colleague Mihály Csikszentmihályi had described as generating “flow,” or deep mental engagement. The pleasant life clearly does not involve “flow,” but Seligman did find that all the “extremely happy people” he studied were also very sociable, and in a relationship. He concluded that “social relationships do not guarantee high happiness, but it does not appear to occur without them.” A good and meaningful life may bring *eudaimonia*, but having a pleasant life as well will intensify whatever happiness you achieve. ■



**Enjoying social events** and the company of others may not offer deep intellectual or emotional satisfaction, but Seligman observed that it was an essential part of being truly happy.



**Martin Seligman**


Born in Albany, New York, Martin Seligman took his first degree in philosophy at Princeton University in 1964. He then turned his attention to psychology, gaining a doctorate from the University of Pennsylvania in 1967. He taught at Cornell University, New York, for three years, before returning in 1970 to Pennsylvania, where he has been Professor of Psychology since 1976.

Seligman's research into depression during the 1970s led to a theory of “learned helplessness,” and a method of countering the pervasive pessimism associated with it. But after an incident with his daughter that highlighted his own innate negativity, he was persuaded that focusing on positive strengths, rather than negative weaknesses, was key to happiness. Regarded as one of the founding fathers of modern positive psychology, Seligman instigated the Positive Psychology Center at the University of Pennsylvania.

### Key works

1975 *Helplessness*  
1991 *Learned Optimism*  
2002 *Authentic Happiness*



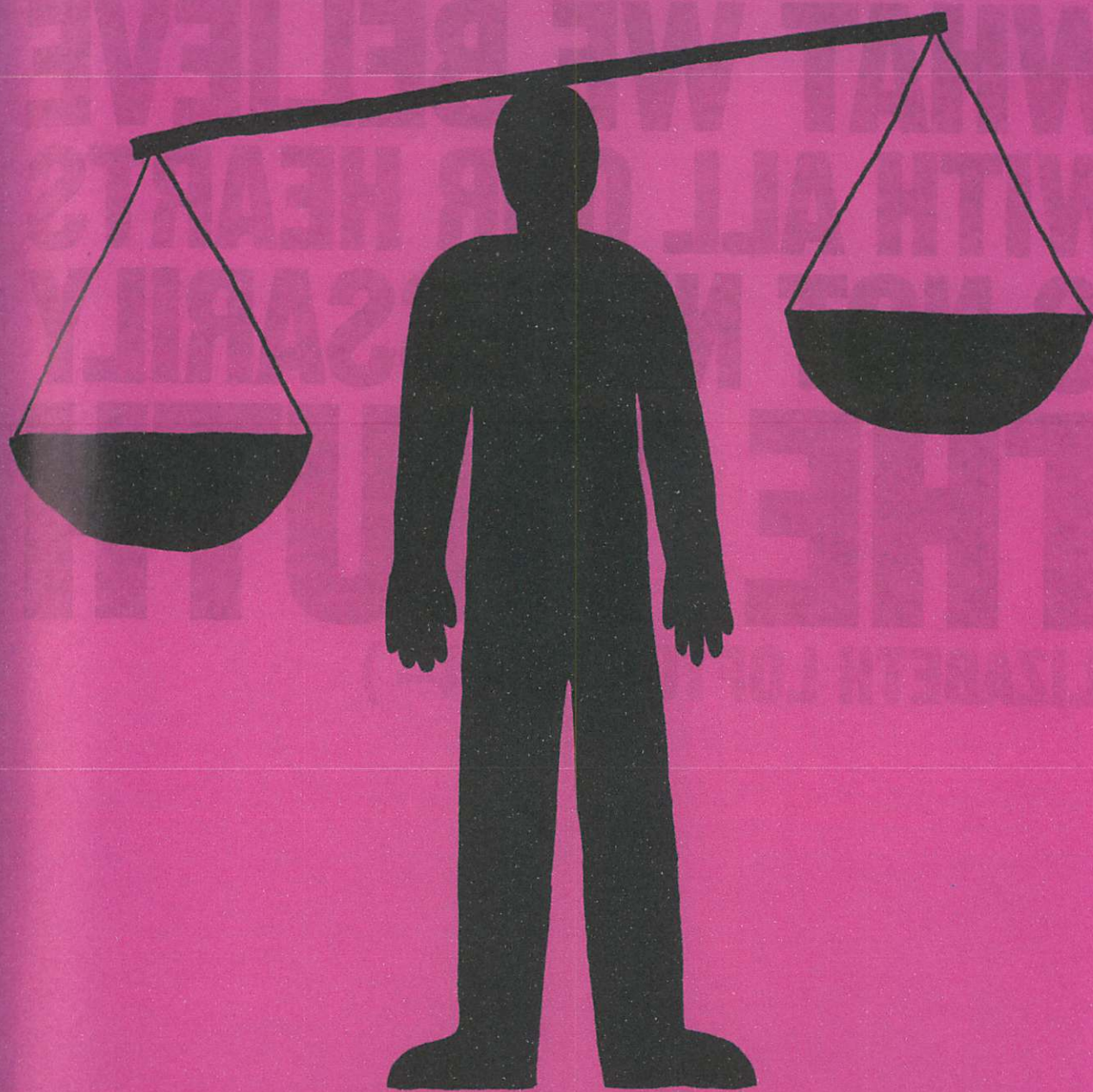


**WHAT WE BELIEVE  
WITH ALL OUR HEARTS  
IS NOT NECESSARILY  
THE TRUTH**

**ELIZABETH LOFTUS (1944– )**









## IN CONTEXT

APPROACH  
Memory

## BEFORE

**1896** Sigmund Freud proposes the notion of repressed memory.

**1932** Frederic Bartlett claims that memory is subject to elaboration, omission, and distortion in *Remembering*.

**1947** Gordon Allport and Leo Postman conduct experiments that demonstrate various types of nondeliberate misreporting.

## AFTER

**1988** The self-help book for sexual abuse survivors, *The Courage to Heal*, by Ellen Bass and Laura Davis, is influential in popularizing recovered memory therapy in the 1990s.

**2001** In *The Seven Sins of Memory*, Daniel Schacter describes the seven different ways in which our memories can malfunction.

**T**oward the end of the 19th century, Sigmund Freud claimed that the mind has a way of defending itself against unacceptable or painful thoughts and impulses, by using an unconscious mechanism that he called "repression" to keep them hidden from awareness. Freud later modified his thinking to a more general theory of repressed desires and emotions. However, the idea that the memory of a traumatic event could be repressed and stored beyond conscious recall became accepted by many psychologists.

The rise of various forms of psychotherapy in the 20th century focused attention on repression, and the possibility of retrieving repressed memories became associated with psychoanalysis so strongly that even Hollywood dramas began to explore the link. Memory in general was a popular subject among experimental psychologists too, particularly as behaviorism began to wane after World War II, and the "cognitive revolution" was suggesting new models for how the brain processed information into memory. By the time Elizabeth Loftus began her studies, long-term memory in

Human remembering does not work like a videotape recorder or a movie camera.

**Elizabeth Loftus**

particular was an attractive area for research, and repressed and recovered memory was about to become a hot topic, as a number of high-profile child abuse cases reached the courts in the 1980s.

**Suggestible memory**

During the course of her research, Loftus grew skeptical about the idea of recovering repressed memories. Previous research by Frederic Bartlett, Gordon Allport, and Leo Postman had already shown that even in the normal working of the human brain, our ability to retrieve

**Elizabeth Loftus**

Born Elizabeth Fishman in Los Angeles in 1944, Loftus received her first degree at the University of California with the intention of becoming a high school math teacher. While at UCLA, however, she started classes in psychology, and in 1970 received a PhD in psychology at Stanford University. It was here that she first became interested in the subject of long-term memory, and met and married fellow psychology student Geoffrey Loftus, whom she later divorced. She taught at the University of Washington, Seattle, for 29 years, becoming professor of psychology

and adjunct professor of law. She was appointed distinguished professor at the University of California in 2002, and was the highest-ranked woman in a scientifically quantified ranking of the 20th century's most important psychologists.

**Key works**

**1979** *Eyewitness Testimony*  
**1991** *Witness for the Defense* (with Katherine Ketcham)  
**1994** *The Myth of Repressed Memory* (with Katherine Ketcham)



See also: Sigmund Freud 92–99 ■ Bluma Zeigarnik 162 ■ George Armitage Miller 168–73 ■ Endel Tulving 186–91 ■ Gordon H. Bower 194–95 ■ Daniel Schacter 208–09 ■ Roger Brown 237 ■ Frederic Bartlett 335–36

information from memory can be unreliable; Loftus believed that this must also be true of the recollection of events that are so traumatic that they are repressed—perhaps even more so, given the emotive nature of the events.

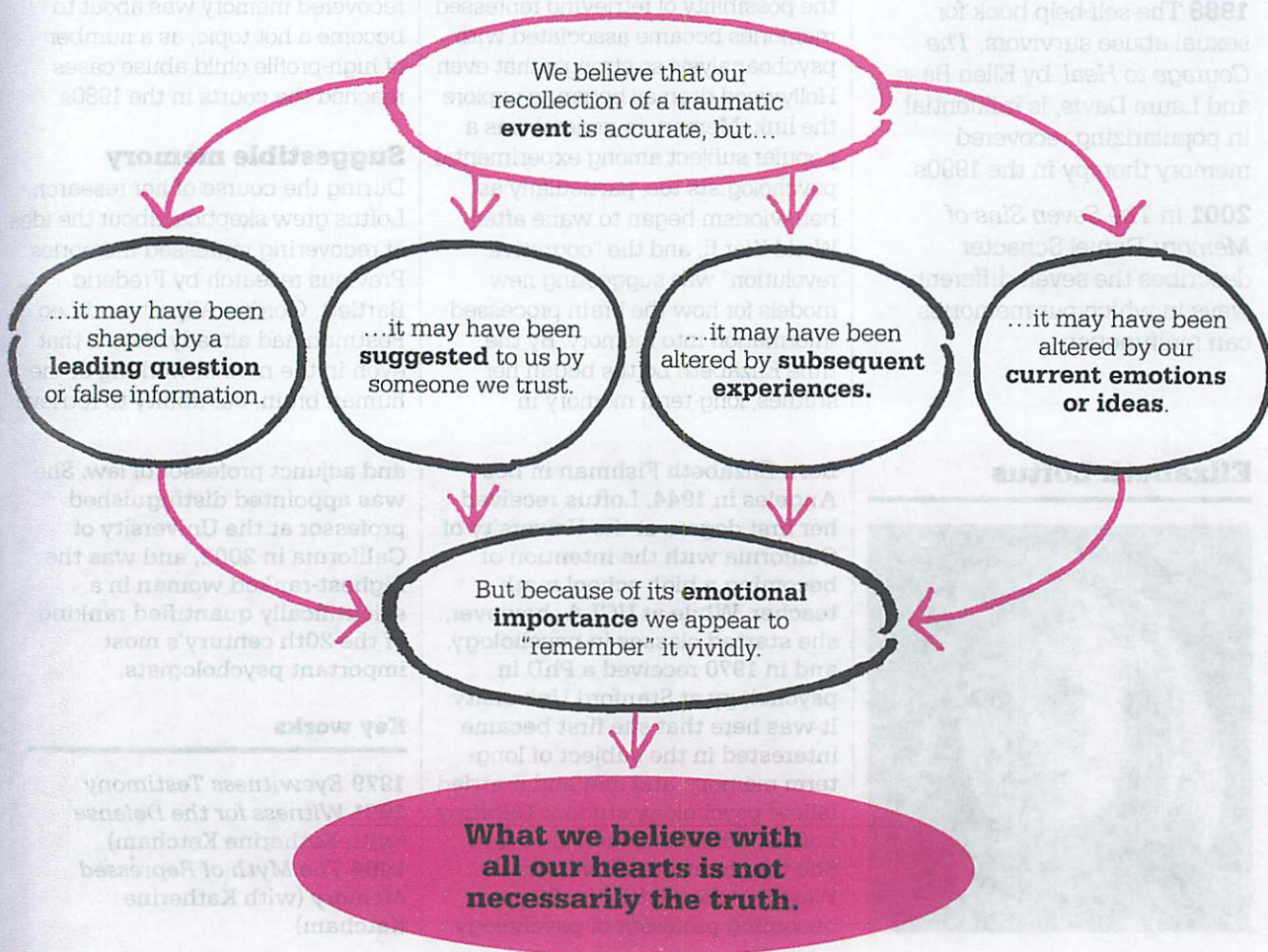
Loftus began her research into the fallibility of recollection in the early 1970s, with a series of simple experiments designed to test the veracity of eyewitness testimony. Participants were shown film clips of traffic accidents and then asked questions about what they had

seen. Loftus found that the phrasing of questions had a significant influence on how people reported events. For example, when asked to estimate the speed of the cars involved, the answers varied widely, depending on whether the questioner had used the words “bumped,” “collided,” or “smashed,” to describe the collision. They were also asked if there was any broken glass after the accident, and the answers again correlated to the wording of the question of speed. In

later versions of the experiment, participants were verbally given false information about some details of the accident (such as road signs around the scene), and these appeared as recollections in many of the participants’ reports.

### Legal implications

It became clear to Loftus that recollection can be distorted by suggestions and leading questions, made after the event in question. Misinformation can be “planted” into the recollection of an observer. »







**In a 1974 experiment** Loftus showed a group of people a film of cars colliding, then asked them how fast the cars "bumped," "collided," or "smashed" into each other. Her choice of verb determined their estimate of car speeds.

The title of her 1979 book describing her experiments, *Eyewitness Testimony*, shows that Loftus was well aware of the implications of this "misinformation effect," not only for the psychological theory of memory, but also for the legal process. Anticipating the controversy that was to follow, she wrote that "the unreliability of eyewitness identification evidence poses one of the most serious problems in the administration of criminal justice and civil litigation."

### False memory syndrome

Loftus was soon to be increasingly involved in forensic psychology, as an expert witness in the spate of child abuse cases of the 1980s. What she realized then was that memories could not only be distorted by subsequent suggestion and incorrect details introduced by misinformation, but may even be

totally false. Among the many cases in which she was involved, that of George Franklin perfectly illustrates the different aspects of what came to be known as "false memory syndrome." Franklin was convicted in 1990 for the murder of a child who was best friends with his daughter, Eileen. Her eyewitness testimony, 20 years after the murder, was crucial to the conviction. Loftus found numerous discrepancies in Eileen's evidence, and proved her memories to be incorrect and unreliable in several respects, but the jury nonetheless found Franklin guilty.

In 1995, the conviction was overturned because the court had been deprived of "crucial evidence:" the fact that Eileen had "recovered" the memory during hypnotherapy. Loftus believed that Eileen's memory of seeing her father commit the murder was sincerely believed, but

false, and had evolved because Eileen had witnessed her father commit other cruel actions, and "one brutal image overlapped another." Loftus successfully argued in court that a combination of suggestion during hypnosis, existing frightening memories, and Eileen's rage and grief had created a completely false "repressed memory."

The case of Paul Ingram (which Loftus was not involved in) also pointed toward the possibility of implanting false memories. Arrested in 1988 for sexually abusing his daughters, Ingram initially denied the charges, but after several months of questioning confessed to them along with a number of other cases of rape and even murder. A psychologist involved in the case, Richard Ofshe, grew suspicious and suggested to Ingram he was guilty of another sexual offence—but this time, one that was provably fabricated. Ingram again initially denied the allegation, but later made a detailed confession.

### Lost in the mall

The evidence for the implantation of false memories was still anecdotal, however, and far from conclusive; Loftus suffered harsh criticism for what were then considered to be controversial opinions. So she decided to collect irrefutable evidence through an experiment that aimed to deliberately implant false memories. This was her 1995 "Lost in the Mall" experiment.

Loftus presented each of the participants with four stories from their own childhood that had apparently been remembered and supplied by members of the participant's family. In fact, only three of the four stories were true; the fourth, about getting lost in a shopping mall, was concocted for the experiment. Plausible details,



such as a description of the mall, were worked out in collaboration with the relatives. Interviewed about these stories one week later and then again two weeks later, the participants were asked to rate how well they remembered the events in the four stories. At both interviews, 25% of the participants claimed to have some memory of the mall incident. After the experiment, participants were debriefed and told that one of the stories was false—did they know which it was? Of the 24 participants, 19 correctly chose the mall as the false memory; but five participants had grown to sincerely believe in a false memory of a mildly traumatic event.

Loftus had provided an insight into how false memories might form in real, everyday settings. For ethical reasons Loftus could not devise an experiment to test whether a truly traumatic false memory (such as child abuse) would be even more vividly recalled and sincerely believed, but she suggested that it would, in the same way that a more

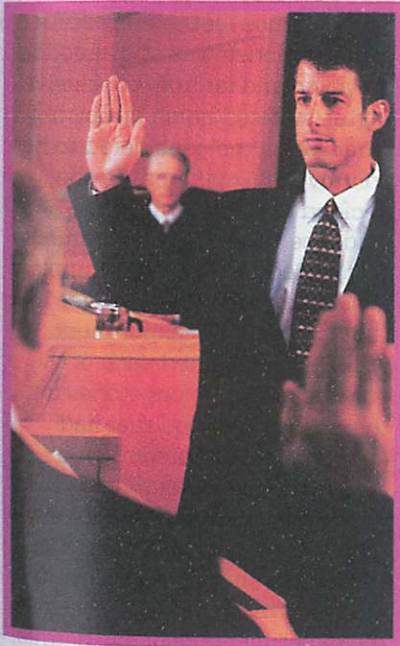
disturbing dream is more vividly recalled and even mistaken for reality. It was this idea that prompted her to say, “what we believe with all our hearts is not necessarily the truth.”

However, in 1986, psychologists John Yuille and Judith Cutshall did manage to conduct a study of memory following a traumatic situation. They found that witnesses to an actual incident of gun shooting had remarkably accurate memories, even six months after the event, and resisted attempts by the researchers to distort their memories through misleading questions.

### Questionable therapy

Loftus points out that her findings do not deny that crimes such as abuse may have taken place, nor can she prove that repressed memories do not exist; she merely stresses the unreliability of recovered memory, and insists that courts must seek evidence beyond this. Her work has also called into question the validity of the various methods

**Despite the unreliability** of eyewitness testimony, Loftus found that jurors tend to give more weight to it than any other form of evidence when reaching a verdict.



Do you swear to tell the truth, the whole truth, or whatever it is you think you remember?

**Elizabeth Loftus**

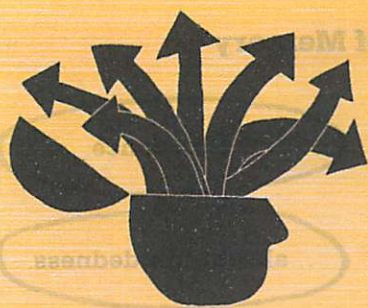
In real life, as well as in experiments, people can come to believe things that never really happened.

**Elizabeth Loftus**

used to recover memory, including psychotherapeutic techniques such as regression, dream work, and hypnosis. Consequently, it raised the possibility that false memories can be implanted during the therapeutic process by suggestion, and in the 1990s several US patients who claimed they were victims of “false memory syndrome” successfully sued their therapists. Unsurprisingly, this apparent attack on the very idea of repressed memory earned an adverse reaction from some psychotherapists, and split opinion among psychologists working in the field of memory. Reaction from the legal world was also divided, but after the hysteria surrounding a series of child abuse scandals in the 1990s had died down, guidelines incorporating Loftus’s theories on the reliability of eyewitness testimony were adopted by many legal systems.

Today, Loftus is acknowledged as an authority on the subject of false memory. Her theories have become accepted by mainstream psychology and have inspired further research into the fallibility of memory in general, notably by Steven Schacter in his book, *The Seven Sins of Memory*. ■





# THE SEVEN SINS OF MEMORY

DANIEL SCHACTER (1952–)

## IN CONTEXT

### APPROACH

#### Memory studies

### BEFORE

**1885** Hermann Ebbinghaus describes the “forgetting curve” in *Memory*.

**1932** Frederic Bartlett lists seven ways in which a story may be misremembered in his book *Remembering*.

**1956** George Armitage Miller publishes his paper *The Magical Number Seven, Plus or Minus Two*.

**1972** Endel Tulving makes the distinction between semantic and episodic memory.

### AFTER

**1995** Elizabeth Loftus studies retroactive memory in *The Formation of False Memories*.

**2005** US psychologist Susan Clancy studies apparent memories of alien abduction.

**F**orgetting, Daniel Schacter believes, is an essential function of human memory, allowing it to work efficiently. Some of the experiences we go through and the information we learn may need to be remembered, but much is irrelevant and would take up valuable “storage space” in our memory, so is “deleted,” to use an analogy with computers that is often made in cognitive psychology.

Sometimes, however, the process of selection fails. What should have been tagged as useful information and stored for future use is removed from memory and therefore forgotten; or—conversely—trivial or unwanted information that should have been removed is kept in our memory.

Storage is not the only area of memory functioning with potential problems. The process of retrieval can cause confusion of information, giving us distorted recollections. Schacter lists seven ways in which memory can let us down: transience, absent-mindedness, blocking, misattribution, suggestibility, bias, and persistence. In a reference to the Seven Deadly Sins, and with a nod to George Armitage Miller’s “magical number seven,” he calls these the “seven sins of memory.”

The first three Schacter calls “sins of omission,” or forgetting, and the last four are “sins of commission,” or remembering. Each sin can lead to a particular type of error in recollecting information.

The first of the sins, transience, involves the deterioration of memory, especially of episodic memory (the memory of events), over time. This is due to two factors: we can recall more of a recent event than one in the distant past; and each time we remember the event (retrieve the memory), it is reprocessed in the brain, altering it slightly.

“We don’t want a memory that is going to store every bit of every experience. We would be overwhelmed with clutter of useless trivia.”

**Daniel Schacter**



See also: Hermann Ebbinghaus 48–49 ■ Bluma Zeigarnik 162 ■ George Armitage Miller 168–73 ■ Endel Tulving 186–91 ■ Gordon H. Bower 194–95 ■ Elizabeth Loftus 202–07 ■ Frederic Bartlett 335–36

Absent-mindedness, the sin that manifests itself in mislaid keys and missed appointments, is not so much an error of recollection but of selection for storage. Sometimes we do not pay enough attention at the time we do things (such as when we put down keys), so the information is treated by the brain as trivial and not stored for later use. In contrast to this is the sin of blocking, where a stored memory cannot be retrieved, often because another memory is getting in its way. An example of this is the “tip-of-the-tongue” syndrome, where we can nearly—but not quite—grasp a word from memory that we know very well.

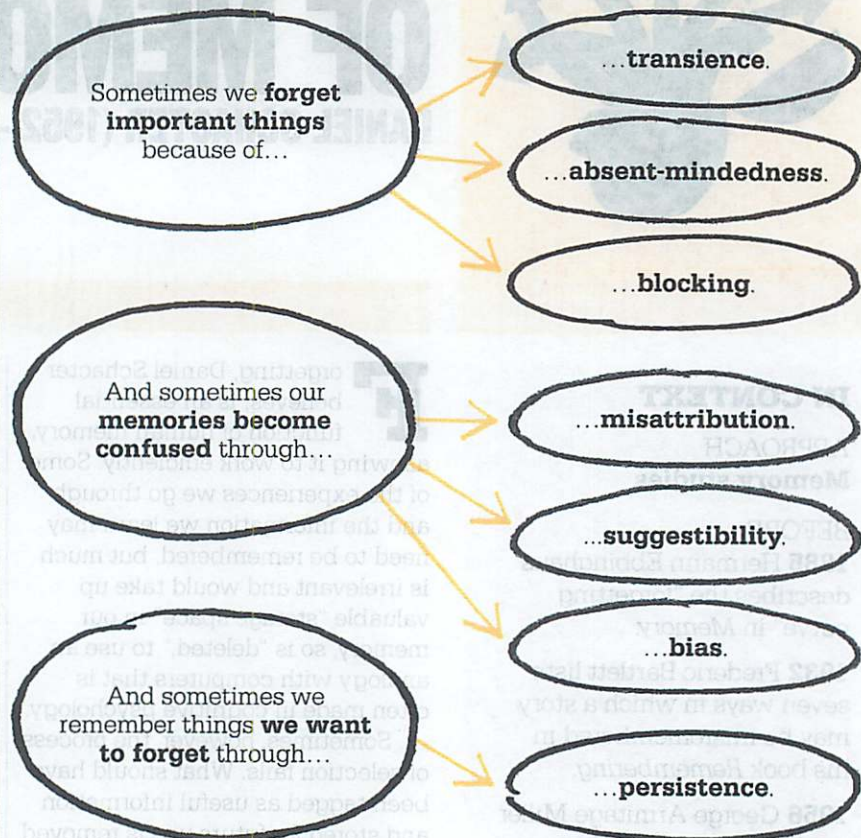
### Sins of commission

The “sins of commission” are slightly more complex, but no less common. In misattribution, the information is recalled correctly, but the source of that information is wrongly recalled. It is similar in its effect to suggestibility, where recollections are influenced by the way in which they are recalled, for example, in response to a leading question. The sin of bias also involves the distortion of recollection: this is when a person’s opinions and feelings at the time of recalling an event color its remembrance.

Finally, the sin of persistence is an example of the memory working too well. This is when disturbing or upsetting information that has been stored in memory becomes intrusively and persistently recalled, from minor embarrassments to extremely distressing memories.

However, the sins aren’t flaws, Schacter insists, but the costs we pay for a complex system that works exceptionally well most of the time. ■

## The Seven Sins of Memory



### Daniel Schacter

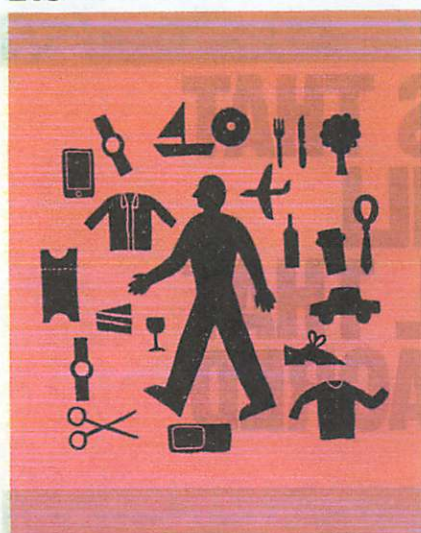
Daniel Schacter was born in New York in 1952. A high-school course sparked his interest in psychology, which he went on to study at the University of North Carolina. After graduation, he worked for two years in the perception and memory laboratory of Durham Veterans Hospital, observing and testing patients with organic memory disorders. He then began postgraduate studies at Toronto University, Canada, under the supervision of Endel Tulving,

whose work on episodic versus semantic memory was causing lively debate at the time. In 1981, he established a unit for memory disorders at Toronto, with Tulving and Morris Moscovitch. Ten years later, he became Professor of Psychology at Harvard, where he set up the Schacter Memory Laboratory.

### Key works

1982 *Stranger Behind the Engram*  
 1996 *Searching for Memory*  
 2001 *The Seven Sins of Memory*





# ONE IS NOT ONE'S THOUGHTS

JON KABAT-ZINN (1944–)

## IN CONTEXT

### APPROACH

#### Mindfulness meditation

### BEFORE

**c.500 BCE** Siddhartha Gautama (the Buddha) includes right mindfulness as the seventh step of the Eightfold Path to end suffering.

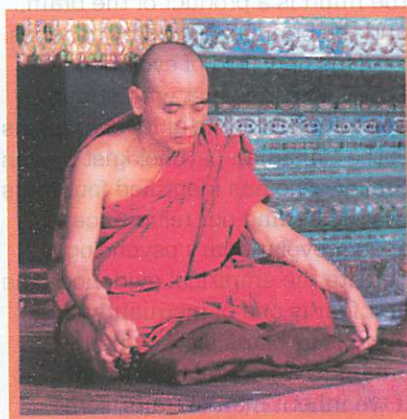
**1960s** Vietnamese Buddhist monk Thich Nhat Hanh popularizes mindful meditation in the US.

### AFTER

**1990s** Mindfulness-Based Cognitive Therapy (MBCT) is developed by Zindel Segal, Mark Williams, and John Teasdale for the treatment of depression, and is based on Kabat-Zinn's MBSR.

**1993** Dialectical Behavior Therapy uses mindfulness without meditation for people too disturbed to achieve the necessary state of mind.

**F**ollowing World War II, there was an increased interest in Eastern philosophies throughout Europe and the US, bringing ideas such as meditation into mainstream culture. The medical benefits of meditation attracted the interest of American biologist and psychologist Jon Kabat-Zinn, who went on to pioneer an approach known as Mindfulness-



**Buddhist meditation** has encouraged the practice of mindfulness for more than 2,000 years, but its mental and physical health benefits were not clinically tested and proven until the early 1990s.

Based Stress Reduction (MBSR), which integrates meditation into the framework of cognitive therapy.

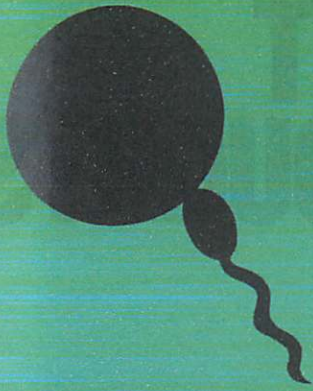
### Practicing mindfulness

Central to Kabat-Zinn's approach is "mindfulness." In this form of meditation, the object is to observe thoughts and mental processes (as well as body or physical processes) in a detached, decentered, and nonjudgemental way; "to stay in the body, and to watch what's going on in the mind, learning neither to reject things nor to pursue things, but just to let them be and let them go."

In mindfulness meditation, we learn to observe thought processes calmly, without identifying with them, and realize that our minds have a life of their own. A thought of failure, for instance, is seen as simply an event in the mind, not as a springboard to the conclusion "I am a failure." With practice we can learn to see mind and body as one thing: a "wholeness." Each of us is more than just a body, says Kabat-Zinn, and more than the thoughts that go through our minds. ■

**See also:** Joseph Wolpe 86–87 ■ Fritz Perls 112–17 ■ Erich Fromm 124–29 ■ Aaron Beck 174–77 ■ Neal Miller 337 ■ John D. Teasdale 339





# THE FEAR IS THAT BIOLOGY WILL DEBUNK ALL THAT WE HOLD SACRED

STEVEN PINKER (1954–)

## IN CONTEXT

### APPROACH

#### Evolutionary psychology

### BEFORE

**1859** Biologist Charles Darwin says that emotion, perception, and cognition are evolutionary adaptations.

**1960s** Noam Chomsky claims that the capacity for language is an innate ability.

**1969** John Bowlby argues that the attachment of newborn babies to their mothers is genetically programmed.

**1976** In *The Selfish Gene*, British biologist Richard Dawkins states that behavioral tendencies evolve through interaction with others over a long period of time.

### AFTER

**2000** In *The Mating Mind*, American evolutionary psychologist Geoffrey Miller says that human intelligence is shaped by sexual selection.

**T**he debate over how much of our behavior is innate (inborn) and how much can be attributed to our environment dates back thousands of years. Some cognitive psychologists have claimed that not only do we inherit certain psychological characteristics they are also subject to the same sort of natural selection as our physical characteristics. They point out that the mind is a product of the brain, and the brain is shaped by genetics.

This new field of evolutionary psychology has met with strong opposition, but one of its champions is the Canadian psychologist Steven Pinker, who has identified four fears that lie behind our reluctance to accept evolutionary psychology despite the empirical evidence. The first fear is one of inequality: if the mind is a "blank slate" when we are born, we are all born equal. But if we inherit mental traits, some people have a natural advantage. The second fear is that if certain imperfections are innate, they are not susceptible to change, so social reform to help the disadvantaged is

futile. The third fear is that if our behavior is determined by genes, we can abdicate responsibility for our misdemeanors, and blame them on our genetic make-up. The final fear, Pinker says, is the most fundamental. This is the fear that if we accept that we are shaped by evolutionary psychology, our "finer feelings"—our perceptions, motives, and emotions—will be reduced to mere processes of our genetic evolution, and so biology will "debunk all that we hold sacred." ■

“The Blank Slate... promised to make racism, sexism, and class prejudice factually untenable.”

**Steven Pinker**

**See also:** Francis Galton 28–29 ■ Konrad Lorenz 77 ■ Roger Brown 237 ■ John Bowlby 274–77 ■ Noam Chomsky 294–97





# COMPULSIVE BEHAVIOR RITUALS ARE ATTEMPTS TO CONTROL INTRUSIVE THOUGHTS

PAUL SALKOVSKIS (1950s—)

## IN CONTEXT

### APPROACH

#### Cognitive behavioral therapy

### BEFORE

**1950s** Joseph Wolpe applies behaviorist ideas to clinical psychology in techniques such as systematic desensitization.

**1952** Behavior and personality theorist Hans J. Eysenck causes controversy with claims that psychotherapy has no beneficial effect.

**1955** Albert Ellis offers an alternative to traditional psychotherapy with his Rational Emotive Behavior Therapy (REBT).

**1960s** Aaron Beck questions whether psychoanalytical therapy is effective; he goes on to develop cognitive therapy.

### AFTER

**2000s** Cognitive behavioral therapy becomes a standard treatment for anxiety, panic attacks, and other disorders.

**T**he second half of the 20th century saw a profound change in clinical psychology. Psychoanalysis was seen by many psychologists as less than scientific, and by the 1960s it was replaced as the treatment for some disorders by behaviorist therapies, or the newer cognitive therapy developed by Aaron Beck. Combinations of these approaches, under the umbrella term cognitive behavioral therapy (CBT), evolved in the 1980s, pioneered in Britain by Paul Salkovskis. CBT, he found, was especially successful in treating obsessive-compulsive disorder (OCD); where psychoanalysis had failed to find a root cause for the disorder in repression or past

trauma, Salkovskis explained the problem in terms of cognitive psychology, and offered a cognitive and behavioral treatment.

### Obsessive thoughts

Salkovskis suggests that obsessive-compulsive disorder has its basis in the sort of unwelcome and intrusive thoughts that we all have from time to time—the idea that something terrible is about to happen, or that we will suffer or cause some awful misfortune. Most of the time, we can put these thoughts out of our minds and carry on with life, but sometimes they are more difficult to shake off. At the extreme end of the scale, the thoughts become obsessive and bring with them a feeling of dread and responsibility. People predisposed to these kinds of obsessive thoughts find it difficult to make a rational appraisal of their importance, and overestimate not only any risk of harm, but also the amount of control they have to prevent it.

**Compulsive activities** such as repeated hand washing may be an attempt to control intrusive thoughts. Shakespeare's Lady Macbeth is driven by guilt to continually wash her hands.





See also: Joseph Wolpe 86–87 ■ Fritz Perls 112–17 ■ Albert Ellis 142–45 ■ Aaron Beck 174–77

We all have unwelcome **intrusive thoughts**.

But some people have trouble shaking them off, and the thoughts become **over-important and obsessional**.

They overestimate the **threat** posed by these thoughts.

They feel **responsible** for any harm implied by these intrusive thoughts.

They therefore feel compelled to take action to counter the threats and control the thoughts.

**Compulsive behavior rituals are attempts to control intrusive thoughts.**

Obsessive thoughts of catching and passing on a deadly disease, for example, may result in compulsive cleaning or hand washing. There is also a feeling of a responsibility to act, even if the action is out of proportion to the risk. The resulting compulsive actions can become ritual behavior patterns, carried out repeatedly in an attempt to gain control over a perceived threat.

Cognitive behavioral therapy combines cognitive and behavioral techniques to address both the cause and the symptoms of OCD to great effect. First, the patient is

helped through cognitive therapy to recognize the obsessional thoughts for what they are, making a more rational appraisal of the risk and, crucially, of how much responsibility he or she has for taking preventative action. This cognitive approach helps reduce the distress. Alongside this, behavioral therapy techniques, such as desensitization (gradual exposure to the perceived threat) help the patient to control his or her compulsive behavior. Salkovskis uses CBT techniques to successfully treat anxiety, panic attacks, and phobias. ■



**Paul Salkovskis**

A graduate of the Institute of Psychiatry, London in 1979, Paul Salkovskis took up a post at the University of Oxford in 1985 to research panic disorders. His interest in the application of cognitive theory to anxiety disorders led to his appointment as a Senior Fellow and later as Professor of Cognitive Psychology.

While at Oxford, the emphasis of his work moved to the treatment of obsessive-compulsive disorder using cognitive behavioral therapy. In 2000, he became Professor of Clinical Psychology and Applied Science at the Institute of Psychiatry, and Clinical Director in the Centre for Anxiety Disorders and Trauma. Since 2010, Salkovskis has been based at the University of Bath, where he is establishing a specialist CBT research and treatment center.

#### **Key works**

**1998** *Panic Disorder*  
**1999** *Understanding and Treating Obsessive-Compulsive Disorder*  
**2000** *Causing Harm and Allowing Harm* (with A. Wroe)