



*Psychology
and Life*

ZIMBARDO

Psychology and Life

Eleventh Edition

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*Dedicated to my children, Adam, Zara, and Tanya—
with hope that the best is yet to come; to my wife
and colleague, Christina Maslach—with delight for
sharing the joy that is now; and to my editor and
friend, Marguerite Clark—with gratitude for having
contributed so much to this and many previous editions
of Psychology and Life.*

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Part One

Foundations

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Probing the Mysteries of Mind and Behavior

Chapter Two
Lifespan Psychological Development

Chapter Three
The Biology of Behavior

PROBING THE MYSTERIES OF MIND AND BEHAVIOR

- **PSYCHOLOGY: DEFINITIONS AND GOALS**
What psychology is
What psychology tries to do
- **RESEARCH FOUNDATIONS**
Methods for gathering data
Enhancing objectivity
Going beyond the facts
- **ALTERNATIVE PERSPECTIVES**
Differing assumptions and approaches
Psychological models as maps
Using psychological models
- **PLANS FOR OUR PSYCHOLOGICAL JOURNEY**
- **SUMMARY**

Welcome to the start of what I hope will prove an exciting journey for you as we explore together many fascinating aspects of human nature. We will try to unravel some of the mysteries of why people behave, think, and feel as they do. In addition to learning *what* psychologists have found about these mysteries, you will discover much about *how* they have done so.

Psychology and Life is more than a textbook filled with the facts of psychological research. It is also a guidebook for appreciating how one asks psychological questions, seeks answers, and evaluates conclusions. Whether or not you choose psychology as a career, you cannot avoid using it informally in your everyday life. Even without further formal training, a careful reading of this introduction to psychology should increase your curiosity about the origins of behaviors you observe, broaden your theories about human nature, and sharpen your predictions about how you and others might act in future situations.

Our exploration of psychology will follow many different paths. It will take us to research laboratories throughout the world, to mental hospitals, nurseries, schools, factories, and many other places where we can observe psychology in action.

Every scientific journey begins with an adventurer puzzled enough by some uncertainty to ask, "I wonder why . . . ?"

*All persons are puzzles until
at last we find in some word or
act the key to the man, to the
woman: straightway all their past
words and actions lie in light
before us.*

Ralph Waldo Emerson, *Journals*

The following three *Opening Cases* offer a sampling of the adventures ahead.

Tina: A terribly good mother turkey

Turkeys are generally good mothers. They spend much time caring for their young—clean-

ing, warming, and feeding them. Young chicks respond by chirping contentedly with a characteristic loud and clear "cheep-cheep" sound. But a researcher observing the behavior of turkeys noticed one day that a turkey chick stopped making its usual sound; it still walked around actively, but it did not chirp. Tina, its formerly affectionate mother, stopped tending it, ignored it, and finally killed it! Why did this female turkey murder her own helpless chick? Could the maternal behavior of mamma turkey have been influenced by that "cheep-cheep" sound?

Yes indeed; it has been found that this particular sound triggers an automatic reaction in all mother turkeys. To demonstrate how "blindly automatic" that response is, the researcher put a stuffed polecat near Tina. She furiously attacked this creature, who is a natural enemy. But when the stuffed polecat made the "cheep-cheep" baby turkey sound (from a tape recorder planted inside it), Tina gathered it to her bosom, giving it all the love that only a mother turkey can. Later, when the tape-recorded "cheep" stopped, Tina turned terrible, tearing apart the silent polecat (Fox, 1974).

Many other species also exhibit mechanical patterns of behavior during episodes of courtship, mating, maternal care, or aggression. Such unlearned behavior—which is released by some specific object or event in the environment, such as a particular color, shape, sound, or smell—is called a *fixed action pattern*. It is an inborn response to a given type of stimulation that is typical of a given species in its natural habitat. A blueprint for this instinctive behavior is genetically transmitted from one generation to the next, presumably because of its survival value among those animals who respond to the correct signals from nature.

Imo from Koshima

Much behavior is molded by basic biological needs for survival, but this is less so with animal species higher on the evolutionary ladder. When we observe primates such as monkeys, chimpanzees, apes, and people, we see cultural

experiences coming to play a significant role.

Imo was a young female macaque living on the offshore Japanese island of Koshima. For years researchers had tried in vain to observe the life-style of her elusive troop of free-ranging monkeys. They finally enticed them out of the forest by leaving sweet potatoes and other treats as bait on an open beach, where observations could be made more easily.

Careful observation revealed that different subgroups had their own dietary preferences. Some ate meat, some fish, others roots; some ate fruit with the pit; others threw the pit away. Eating, then, was not a matter of simply using what was available to satisfy hunger. It was dictated partly by the customs of each monkey troop.

When the researchers' goodies were first put out, the older monkeys resisted sampling them at all. It was the younger ones who were more adventurous and took the risk, after which the elders followed their example.

Then the young female, Imo, did something no other monkey had done. She began carrying her sweet potatoes to a pool to wash off the sand before eating them. In a few weeks her playmates began copying her; soon her siblings and other close associates regularly washed their potatoes, too. After a while, Imo introduced a new ritual—taking potatoes that had already been cleaned in the fresh-water pool and washing them in the sea. Presumably the salt water added flavor or salt they needed in their diet. When the researchers returned ten years later, the habit of washing sweet potatoes in the sea had spread to two thirds of all the monkeys. This habit of sweet-potato washing had become "completely established as an element in the troop's cultural life."

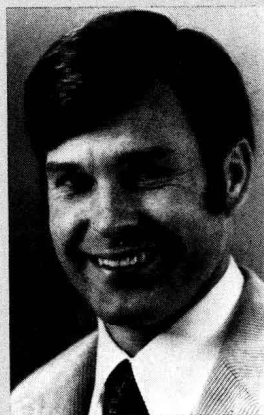
In order to keep the troop in the open area for more extensive observations, the researchers now changed the diet to unhusked rice, since the monkeys took longer to sift the rice grains out of the sand before eating them. But the researchers had not reckoned with Imo's inventiveness. She scooped up handfuls of rice and sand and threw the whole lot into the water. The sand sank, the rice floated, and Imo skimmed off her fast-food snacks. Again, her



△ A macaque washing fruit.

discovery was copied by her companions, and the new eating habit soon became ingrained in the life of the group (Itani, 1961).

For reasons unknown, Imo was a more radical, creative thinker than her peers. But the ability of the others to learn by watching her resulted in shared skills, shared knowledge, and new ritualized ways of behaving for the whole group. What Imo and her monkey troop from Koshima had done was to create a simple culture, a prototype of human cultures, in which learned skills and preferences for particular ways of doing things are shared with others and even with later generations, supplementing inborn, genetically programmed abilities.



◁ Dan W. before the murders.

Killer Dan

Generations of readers have been fascinated by Robert Louis Stevenson's tale of the mild-mannered Dr. Jekyll, whose personality is suddenly transformed into that of a fiendish maniac, Mr. Hyde, when he drinks a chemical po-

tion. This fictional portrait leads readers to pause and wonder about the stability of their own personalities and to reconsider whether deep within the ordinary sophisticated self they present to the world may lurk a "darker," more primitive side of their nature. The recent, strange-but-true case of "killer Dan" raises these doubts anew.

Dan W. was an all-American boy. This good-looking, robust family man had been a policeman and a heroic firefighter, and though quite young, had won election to a position in his city's government on a law-and-order platform. He was an advocate of strict morality and opposed liberalizing the restrictions against the city's large homosexual population. He was sometimes at odds with another city official who represented that group of citizens.

One day, Dan unexpectedly resigned from his office, claiming he could not afford to continue to support his family in that low-paying position. Then he abruptly changed his mind and asked the mayor to reinstate him. The mayor refused. Shortly thereafter, Dan smuggled a pistol into City Hall and killed the mayor with a barrage of bullets fired at point-blank range. He then reloaded his gun, went to the office of his gay opponent, and shot him to death. A little later, he surrendered to the police. He admitted his guilt but offered no explanation of the reasons behind his sudden personality change. How could he have gone from being a conservative, religious, law-supporting "pillar of the community" to a cold-blooded murderer who showed no remorse?

At his trial, a number of possible motives surfaced, and others were offered. Might his violence have been triggered by motives of frustration, revenge, hatred for homosexuals, or even latent homosexual tendencies in himself that he was unconsciously trying to reject? Some argued that he was overwhelmed by the build-up of stressful circumstances in his life. Others felt he was simply playing out the American macho male stereotype, in which might makes right, especially with a gun in hand.

Did these murders really show a change in personality? Had he not shown the same trait of *impulsivity* earlier in his heroic rescues during fires, and in his sudden public resignation and quick reversal? Maybe he hadn't really changed, but was only showing his impulsiveness in a different kind of setting.

Dan's lawyer was able to present a defense for this confessed murderer of two city officials that got him off with a light sentence of 7

years, 8 months. The jury accepted the argument that Dan's capacity to reason, plan, and comprehend the full meaning of his actions had been diminished by the large amounts of junk foods he ate during bouts of depression! This "Twinkies defense" was accepted by jury and judge as a physiological basis for the violent behavioral acts. It was a new version of the insanity defense. Needless to say, many people in San Francisco, where the dual murders took place, were outraged by this lenient sentence—and 5 years later by Dan's early parole in 1984. (For more details on this case, see Weiss, 1984.)

Dan's case raises many puzzling issues—about his motivation, his state of mind at the time he was facing each of his victims, the extent to which his deeds were premeditated or driven by uncontrollable impulse or passion, and whether this was a real-life parallel to the fictional case of Dr. Jekyll and Mr. Hyde. It also sensitizes us to the operation of psychological concepts in legal principles and judicial decisions. *Should* there be a defense that absolves murderers from full criminal responsibility? Under what circumstances, if any, might *your* actions no longer be governed by ordinary considerations of morality? Are there any circumstances under which *you* might become an assassin?

You will need to learn much more psychology before beginning to get some answers to such big questions. This text will help you do so, though you will see, too, that psychology itself is a long way from having all the answers.

PSYCHOLOGY: DEFINITIONS AND GOALS

You now have a few clues as to what a course in psychology is about. In this section we'll look at some formal definitions of what psychology is to psychologists and preview what psychologists are trying to accomplish.

What psychology is

Psychology began as the study of mental events—what was happening in the human mind. With roots in philosophy and physiology, psychology did not emerge as a science in its own right until a little over a hundred years ago. The first formal experimental laboratory was established in 1879 in Leipzig, Germany, by Wilhelm Wundt; a smaller, less formal one was established at about the same time in the United States by William James at Harvard University.

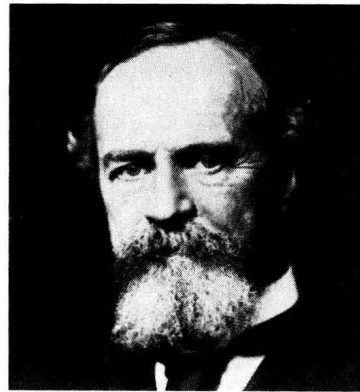
Wundt and James differed strikingly in their approaches. Wundt was a precise experimentalist whose focus was on analysis of separate sensations, as reported by subjects trained to analyze the elements of their own consciousness. James, on the other hand, did little formal research. He was a philosopher-psychologist trained in medicine, and his interests ranged widely, including topics as diverse as habit, emotion, and religious experience. James believed in free will and wrote about inner experience as an ongoing, flowing process not divisible into independent sensations.

Early in the twentieth century, American psychologists sought to develop a more objective science by investigating only outer actions observable to everyone. For many years thereafter, psychology was defined as the *scientific study of the behavior of organisms*. The observable behavior of both humans and other species became its subject matter, and the precision and objectivity demanded in other sciences were now demanded in psychology.

As the field of psychology has matured, it has become clear that we cannot understand actions without some understanding of mental processes. At the same time, as we shall see, investigators have devised new ways of studying mental events that are indirect but much more objective than the older method of simply having subjects try to analyze their



◀ Wilhelm Wundt
(1832–1920).



◀ William James
(1842–1910).

own consciousness. As a result, many psychologists now define **psychology** as the *scientific study of behavior and mental processes*. This is the definition we will use throughout this text. We will see, however, that the concept of mental processes, or “mind,” is regarded differently by psychologists from different backgrounds.

Psychology today is a way of thinking broadly about how living creatures cope with their environment and interact with each other. It is a behavioral science at the intersection of philosophy, biology, sociology, physiology, and cultural anthropology. Though psychologists observe *specific instances* of behavior, what they are interested in discovering are *general laws of behavior*. Laws of behavior are statements that describe how the average individual is likely to behave under a specified set of conditions.

Psychologists ask such questions as, What would happen to behavior Z if stimulus X were changed? (e.g., How hard would you study if the teacher began to reward you with a gold star?) Does Y really make a difference in how organisms react? (e.g., Does your perception of how much control you have affect how happy and healthy you are?) How do personality traits A and B fit together? (e.g., How are shyness and aggressiveness related?)

If the storehouse of psychological knowledge is filled with observations and research findings derived