

Discovering Psychology: Updated Edition

01 Past, Present, and Promise

- 1 01:00:17:00 >> ZIMBARDO: What can psychology tell us about the relationships among the mind, the brain, and behavior, from our reaction to embarrassing situations to how we evaluate social groups?
- 2 01:00:34:08 "Past, Present and Promise" this time on *Discovering Psychology* .
- 3 01:01:15:16 >> ZIMBARDO: What makes us similar to other people and yet so uniquely different?
- 4 01:01:21:01 Why do we think, feel, and behave as we do?
- 5 01:01:33:24 Are we molded more by heredity or shaped by experience?
- 6 01:01:47:05 How can the same brain that gives us the capacity for creativity, rationality, and love also become the crucible for mental illness?
- 7 01:02:01:02 I'm Philip Zimbardo.
- 8 01:02:02:16 We'll answer these questions and much more in the updated edition of *Discovering Psychology* .
- 9 01:02:08:03 If there is one thing I've learned over the past 40 years as a teacher and research psychologist is that the study of the social animal, our relationships, our behavior, our mind, is fascinating and unending.
- 10 01:02:21:04 New research fueled by new technologies will always add to time-tested knowledge.
- 11 01:02:26:16 It's in that spirit that we updated *Discovering Psychology*, adding cutting-edge material to the classic content of our original series.
- 12 01:02:35:20 Over the next 26 programs, we'll once again take up the challenge of understanding that most complex and puzzling creature: you, me, the human animal.
- 13 01:02:47:20 We'll have to do a lot of traveling in the programs ahead, from inside the brain to outer space.

- 14 01:02:58:17 >> I'm going to hide little Snoopy here in his little room.
- 15 01:03:01:21 >> ZIMBARDO: In our journey, we'll see how psychologists work...
- 16 01:03:04:28 >> You watch while I hide little Snoopy.
- 17 01:03:07:08 We'll hide him right there.
- 18 01:03:09:06 >> ZIMBARDO: ...attempting to observe and objectively describe the behavior of humans and animals.
- 19 01:03:13:14 >> Good girl.
- 20 01:03:14:12 You found him, didn't you?
- 21 01:03:16:06 He likes it.
- 22 01:03:17:04 He likes for you to find him.
- 23 01:03:18:22 >> ZIMBARDO: They do so hoping to understand what causes that behavior to occur or to change.
- 24 01:03:25:28 Psychology is formally defined as the scientific study of the behavior of individuals and of their mental processes.
- 25 01:03:40:00 Psychologists then try to use their research to predict and in some cases control behavior.
- 26 01:03:47:26 Ideally, out of their basic research will come solutions for the practical problems that plague individuals and society.
- 27 01:03:56:06 >> You want to look inside?
- 28 01:03:57:13 Okay, you open it up for me, okay?
- 29 01:03:59:20 >> ZIMBARDO: So while some psychologists study mental processes simply because they are fascinating and challenging...
- 30 01:04:05:15 >> Mommy.
- 31 01:04:07:04 >> Three times 48.
- 32 01:04:08:25 >> ZIMBARDO: ...others work to improve education...
- 33 01:04:12:07 >> 208.
- 34 01:04:13:08 >> 208, correct.

- 35 01:04:14:29 >> ZIMBARDO: ...to reduce stress, to promote peace...
- 36 01:04:19:05 >> ...draw the conflict between Iran and Iraq.
- 37 01:04:21:18 >> ZIMBARDO: ...and to counteract violence.
- 38 01:04:26:23 And there are the dedicated people watchers who observe behavior under specially arranged conditions, measuring it and testing it.
- 39 01:04:36:29 For many, the reason to study behavior is the assumption that it's an outer sign of an inner reality, a window providing a glimpse into the workings of the human mind.
- 40 01:04:51:11 But psychological researchers who emphasize the essential biological basis of behavior and those who compare the behavior of different organisms study the activities of a wide variety of living creatures, not just humans.
- 41 01:05:07:08 Even seemingly minor, insignificant behavior can yield important data about general psychological functions, such as clues about how we process information.
- 42 01:05:21:16 >> Hi.
- 43 01:05:22:24 I'm Mr. Dressler.
- 44 01:05:23:24 Who are you?
- 45 01:05:24:24 >> Josephine.
- 46 01:05:25:28 >> ZIMBARDO: Let's do a little psychological detective work of our own by observing some junior-high-school girls as they meet a handsome new teacher.
- 47 01:05:33:19 Their reactions were filmed for the television series *Candid Camera* .
- 48 01:05:37:14 Notice the difference between the girls' public behavior when the teacher is present and their private behavior once he leaves the room.
- 49 01:05:46:04 >> I'd like to know whether girls would like to be in my class?
- 50 01:05:52:16 >> Excuse me.
- 51 01:05:53:22 There's a phone call for you.
- 52 01:05:54:18 >> Thank you Mr. Williams.

- 53 01:05:55:13 Will you all bear with me?
- 54 01:05:56:18 Can you have patience just a second and let me answer this thing?
- 55 01:05:59:13 I'll be right back.
- 56 01:06:06:00 (*girls whispering*) >> You didn't stop looking at him.
- 57 01:06:14:02 (*girls whispering*) >> My god.
- 58 01:06:19:02 >> He's young, too.
- 59 01:06:20:01 He must be at least around 24.
- 60 01:06:23:15 >> Would you mind being in my class during this...
- 61 01:06:25:20 >> No, if I'm with Mimi.
- 62 01:06:27:12 >> Telephone call, Mr. Dressler.
- 63 01:06:28:09 >> Thank you, Mr. Williams.
- 64 01:06:29:18 Excuse me a minute.
- 65 01:06:30:18 >> Okay.
- 66 01:06:31:08 >> Will you all wait for me just one second?
- 67 01:06:32:21 >> Yeah.
- 68 01:06:33:10 >> Thank you.
- 69 01:06:34:06 >> ZIMBARDO: The behavior of dozens of girls in this situation was captured by *Candid Camera* producer Allen Funt.
- 70 01:06:39:17 Let's focus on just one aspect of their many reactions.
- 71 01:06:43:24 Why are these girls laughing?
- 72 01:06:53:12 When I asked a large number of my students about the girls' behavior, they came up with a range of explanations: that the girls were laughing because they were either nervous, excited over their good fortune, showing their friends how cool they were, or laughing in eager anticipation of a novel event, feeling self-conscious, feeling sexually aroused, or lastly and by far the most common explanation, that they were simply showing a typical reaction of adolescent girls.

- 73 01:07:20:10 Of course, if the last explanation were true, then we'd expect to see different behavior from a group of adolescent boys.
- 74 01:07:26:28 Let's see what happens if we repeat the same situation using boys and an out-of-the-ordinary female teacher.
- 75 01:07:43:22 >> Hi.
- 76 01:07:44:11 >> Hi.
- 77 01:07:45:01 >> What's your name?
- 78 01:07:45:28 >> Charles Burbank.
- 79 01:07:47:03 >> Hi.
- 80 01:07:47:21 Nice to meet you.
- 81 01:07:48:11 >> Joe Paul.
- 82 01:07:49:11 >> Nice to meet you.
- 83 01:07:50:06 My name is Miss Starling and I'm going to be your new teacher in social studies.
- 84 01:07:55:04 >> ZIMBARDO: Despite some behavioral differences between them, the boys had the same basic reaction as the girls.
- 85 01:08:04:29 >> You're wanted on the phone, Miss Starling.
- 86 01:08:07:26 Would you follow me, please?
- 87 01:08:09:00 >> Oh.
- 88 01:08:09:24 Would you wait here for me a couple of minutes?
- 89 01:08:11:17 I'll be right back.
- 90 01:08:17:10 >> Oh.
- 91 01:08:18:15 (*audience laughing*) >> ZIMBARDO: But before we try to answer why the youngsters reacted as they did, ask yourself how you reacted as a viewer.
- 92 01:08:30:01 Did you laugh, too?
- 93 01:08:31:15 If so, ask yourself why.

- 94 01:08:33:21 >> I didn't want to change when he mentioned it, but now I do.
- 95 01:08:36:22 >> ZIMBARDO: Was it because, as most of my students thought, we naturally tend to empathize with the children because we remember being in awkward situations at that age, too?
- 96 01:08:46:29 Or was it because you felt uneasy observing their private reactions to sexual titillation, a kind of voyeur's guilt?
- 97 01:08:55:03 (*audience laughing*) Or did you laugh because you experienced a violation of expectations about how teachers are supposed to look and act, remembering back to how your teachers actually looked and behaved?
- 98 01:09:13:16 Were you reacting emotionally to the same violation of expectations that the children were experiencing?
- 99 01:09:19:19 (*audience laughing*) >> Holy mackerel.
- 100 01:09:28:16 >> ZIMBARDO: Whatever type of behavior psychologists look at, whether it's laughing, crying, making war, or making love, or anything else, they try to make sense of it by relating the observed behavior to certain aspects of the individual involved and the situation in which the behavior occurred.
- 101 01:09:47:13 For example, my genetic makeup, personality traits, attitudes, and mental state are some of the personal factors involved in my behavior.
- 102 01:09:57:01 They're known as dispositional factors.
- 103 01:09:59:25 They're internal, characteristics and potentials inside me, while external things such as sensory stimulation, rewards, or the actions of other people are known as situational factors.
- 104 01:10:13:03 They come from the outside, from the environment in which my behavior takes place.
- 105 01:10:19:05 If you want a graphic lesson in the influence of situational factors, take a look at this picture.
- 106 01:10:25:00 Which is the tallest cowboy?
- 107 01:10:26:19 Which is the shortest?

- 108 01:10:28:08 Seems obvious, doesn't it?
- 109 01:10:31:28 Now, let's isolate them from their background context and compare them.
- 110 01:10:36:20 You can see how the context of the situation, in this case the picture's background, mislead your perception and judgment.
- 111 01:10:46:00 Or take a look at this sign and read it out loud.
- 112 01:10:50:12 "Paris in the Spring," right?
- 113 01:10:51:23 But this is what it really says, another violation of expectations, a case where your past experience creates a dispositional readiness to respond in a particular way.
- 114 01:11:04:10 At the University of Illinois, psychologist Emanuel Donchin discovered that even before we are consciously aware that our expectations have been violated, our brains have registered the event as peculiar.
- 115 01:11:17:05 To study this phenomenon, Donchin has been making recordings of the brain's electrical activity, known as electroencephalograms, or EEGs.
- 116 01:11:26:20 >> The basic procedure we use is very simple.
- 117 01:11:28:29 We put the standard EEG electrodes on a person's head and record the brain activity as the clinician records in a hospital.
- 118 01:11:37:29 And then we create a series of events which repeat themselves, the same event over and over again, and our computers look at the brain activity and filter out the specific response to the events in which we're interested.
- 119 01:11:55:20 And it turns out that this response to this event, which is called an event-related potential, has a series of waves in it.
- 120 01:12:02:23 >> ZIMBARDO: Donchin is particularly interested in the P300 wave, the brain's characteristic response to an unexpected, but important event.
- 121 01:12:12:04 >> You see a wave that begins about 250-thousandths of a second after a surprising and relevant event.
- 122 01:12:22:25 It reaches a peak about 300 milliseconds, at least 300 milliseconds after the surprising event, and then there's a return to the baseline and subject's brain activity settles

down.

- 123 01:12:35:11 >> ZIMBARDO: In this experiment, Donchin elicits the P300 wave by presenting his subject with surprises in a list of names.
- 124 01:12:42:19 Most of the names are men's names.
- 125 01:12:45:03 Occasionally there's an unexpected woman's name.
- 126 01:12:48:23 The subject clicks a different button for male and female names.
- 127 01:12:55:03 In the laboratory, monitors reveal that the brain responds to the unexpected names with the P300 wave.
- 128 01:13:02:25 >> If an event triggers an emotional response in the subject or produces some cognitive activity by the subject, we're interested in finding out the extent to which this emotional response or cognitive activity changes the way in which this brain activity that we can record behaves.
- 129 01:13:23:07 And by looking at changes in brain activity in relation to psychological processes, we are trying to understand better the relationship between the mind and the brain.
- 130 01:13:36:08 >> ZIMBARDO: When we study the smallest and most detailed processes of behavior, like the P300 brain waves, we operate on what's known as the micro level of analysis.
- 131 01:13:46:11 Typically the micro level is used by psychologists who study things like the role of the brain in memory, for instance, or of hormones in sexual behavior.
- 132 01:13:55:00 But most psychologists operate on the next level, the molecular level of analysis, which studies somewhat larger units of observable behavior, such as the speed of reacting to a simple stimulus.
- 133 01:14:11:13 Or for a more complex example, let's take a look at a kind of behavior we use every day -- body language.
- 134 01:14:20:22 Our body language can reflect much of what we're thinking and feeling on the molecular level just as P300 brain waves can on the micro level.
- 135 01:14:30:29 Psychologist Robert Rosenthal of Harvard University has pioneered the study of how people send out and receive

these nonverbal messages.

- 136 01:14:40:20 >> Nonverbal communication can be defined simply as the communication between people omitting all the words.
- 137 01:14:53:21 It's just the music.
- 138 01:14:55:12 That is facial expression, body movement, tone of voice -- those would be the primary channels.
- 139 01:15:05:00 One of the things that we've found is that very often the channels of nonverbal communication are redundant, as we might expect.
- 140 01:15:13:09 And by that I mean they're all telling the same story, so that the tone of voice may be warm and supportive, the facial expressions may be warm and supportive, and the body movements may be warm and supportive.
- 141 01:15:25:05 Other times -- quite often in fact -- the different channels of nonverbal communication are in contradiction to each other and the face may be saying something quite differently from what the tone of voice is saying.
- 142 01:15:40:01 >> If something really goes drastically wrong, I really don't think it'll be our fault.
- 143 01:15:43:22 >> ZIMBARDO: We know, for example, that in deception, when people are lying to each other, if you want to catch a liar, you will do better to pay attention to the liar or the potential liar's tone of voice than to watch their face.
- 144 01:15:57:14 The face is too easy for the liar to control, so that the face is under our own control to a much greater degree than our body, and our body's under our own control to a greater degree than our tone of voice.
- 145 01:16:10:25 >> ZIMBARDO: Rosenthal has also investigated how subtle aspects of nonverbal communication influence the medical treatment of alcoholics.
- 146 01:16:19:22 >> We tape-recorded a one-minute clip of the doctors telling us what had been their experience with alcoholics.
- 147 01:16:26:05 And for each one of the doctors, we had their success rate in getting alcoholics to go into treatment.
- 148 01:16:31:08 What we found was that if we took these one-minute tape

clips for our nine doctors, ran them through a special filtering device that removed the content and left only the tone of voice, we could predict, or postdict, how well these doctors would do in getting their alcoholics to go into treatment.

- 149 01:16:53:07 What we found was that if the tone of voice showed considerable hostility, the doctors were very unsuccessful in getting their alcoholic patients to go into treatment.
- 150 01:17:03:25 If they showed much less hostility, they were much more successful in getting alcoholics to go into treatment.
- 151 01:17:10:07 >> ZIMBARDO: The research we've just seen operates at the molecular level of analysis, but there's another broader level of analysis, the molar level.
- 152 01:17:18:14 Here we find researchers who investigate large units of behavior of the whole person in complex situations.
- 153 01:17:26:16 In this kind of analysis, the individual's cultural background and social experiences must also be factored in.
- 154 01:17:35:09 Psychologists working on the molar level might study violent behavior, sexual attraction, worker moral and productivity...
- 155 01:17:52:10 >> I bought some sleeping pills.
- 156 01:17:54:10 >> ZIMBARDO: ...patient/therapist interactions...
- 157 01:17:57:00 >> What happened when you came to the center?
- 158 01:17:59:01 >> It was... got easier when I had someone to talk my problems out with.
- 159 01:18:05:05 >> ZIMBARDO: ...or the nature of prejudice.
- 160 01:18:11:21 But new tools can take these areas traditionally studied at the molar level down to the micro level.
- 161 01:18:21:14 Mahzarin Banaji of Yale has uncovered how our unconscious attitudes can show up as activity deep within the brain.
- 162 01:18:29:13 She began with a reaction-time test, the IAT, to measure how quickly we pair our positive and negative values to unfamiliar black and white faces.
- 163 01:18:41:13 >> The IAT measures the strength of association between

two concepts.

- 164 01:18:47:01 You can imagine how quickly can one pair words like love, joy, peace, things that mean good things, with the category African American, the category European American.
- 165 01:18:58:20 The speed with which the two can be connected is an indirect measure of one's level of prejudice towards the group.
- 166 01:19:05:27 >> ZIMBARDO: These unconscious, high-speed connections can reveal a bias quite different from our conscious beliefs.
- 167 01:19:14:08 Banaji has captured thousands of IAT responses.
- 168 01:19:17:28 They have yielded some expected and unexpected results.
- 169 01:19:22:08 >> White Americans show what we might call an in-group preference; that is they show a swiftness to associate white with good and black with bad.
- 170 01:19:31:27 African Americans show an interesting pattern.
- 171 01:19:35:20 On average they show no bias, but half the African Americans who take this test are showing a pro-black preference; that is they're faster to associate black with good than white with good.
- 172 01:19:48:19 But the other half are showing quite the opposite.
- 173 01:19:52:13 They're showing a fast association between white and good, even though they're black.
- 174 01:20:00:02 >> ZIMBARDO: If a negative value for black can overpower our conscious attitudes, it should be visible deep within the brain in its emotional center, the amygdala.
- 175 01:20:12:23 With functional magnetic resonance imaging, scientists can observe how the amygdala is activated when we see emotional or fearful stimuli.
- 176 01:20:23:13 Neuroscientist Liz Phelps worked with Banaji to compare the IAT data to amygdala activity.
- 177 01:20:31:22 >> When you learn something in the environment fearful or negative, the amygdala will become involved.

- 178 01:20:38:13 So we would expect, if the amygdala is important in emotional learning and memory in general, that it would also be important in learning about the evaluation of social groups and the emotional properties that we assign to social groups.
- 179 01:20:57:16 >> ZIMBARDO: As in the IAT, subjects viewed unfamiliar black and white faces.
- 180 01:21:04:12 Those who showed strong amygdala activation to black faces also showed a high preference for white on the IAT.
- 181 01:21:16:03 >> The big question, of course, remains as to what it is these measures predict.
- 182 01:21:21:15 Does a person who has a high race-bias measure on the IAT -- is that person also likely to perform behaviors in the real world that would reveal higher degrees of prejudice?
- 183 01:21:34:25 Does it matter if a police officer has a large IAT score?
- 184 01:21:39:14 Is such a police officer more likely to shoot at somebody who is black than somebody who's white?
- 185 01:21:47:13 These are not experiments that have been done, but this is indeed where the field is going.
- 186 01:21:53:01 It is for the next few decades to discover.
- 187 01:21:59:22 >> ZIMBARDO: So now you have an idea of the three levels at which psychologists work.
- 188 01:22:04:01 There's the micro, the molecular, and the molar, which to many sound a lot more like the physical sciences than psychology.
- 189 01:22:11:16 But that's no accident.
- 190 01:22:13:02 Psychology is a science.
- 191 01:22:14:25 It has the methodology of a science: the principles, the practices, and procedures that yield conclusions based on data, on research-generated evidence.
- 192 01:22:25:06 Psychology also has its own historical context in which it must be understood, just as all of us have.
- 193 01:22:33:24 Modern psychology began in 1879 when Wilhelm Wundt

founded the first experimental psychology laboratory in Germany.

- 194 01:22:43:18 Wundt trained many young researchers who carried on the tradition of measuring reactions to experimental tasks such as reaction times to sensory stimuli, attention, judgment, and word associations.
- 195 01:22:58:17 The first American psychological laboratory like Wundt's was founded at the Johns Hopkins University in 1883 by G. Stanley Hall.
- 196 01:23:10:08 Hall, the first president of the American Psychological Association, introduced Sigmund Freud to the American public by translating Freud's *General Introduction to Psychoanalysis* .
- 197 01:23:23:00 But 1890 may stand as the most significant date in psychology's youth.
- 198 01:23:29:08 That's when William James published what many consider to be the most important psychological text of all time, *Principles of Psychology* .
- 199 01:23:39:22 James was a professor of psychology at Harvard University, where he also studied medicine and taught physiology.
- 200 01:23:48:09 James was interested in all the ways in which people interact with and adapt to their environment, and so he found a place in psychology for human consciousness, emotions, the self, personal values, and religion.
- 201 01:24:06:05 But the Wundtian psychologists like G. Stanley Hall rejected James's ideas as unscientific and soft.
- 202 01:24:15:17 They argued that psychology should be patterned after the model of the physical sciences, so they focused their study on topics like sensation and perception -- on psychophysics, measuring mental reactions to physical stimuli.
- 203 01:24:32:03 Later they added investigations of how animals acquire conditioned responses and how humans memorize new information.
- 204 01:24:42:12 These differences among psychologists in what should be studied and how one should go about it are still with us a century later.

- 205 01:24:51:05 In the programs ahead, we'll need to adopt multiple perspectives to be open to a range of theories and to use a variety of research approaches, given the complexity of our subject matter: the brain, mind, and behavior.
- 206 01:25:05:09 In our next program, we're going to see how psychologists conduct their research.
- 207 01:25:09:15 If that sounds boring, think again.
- 208 01:25:12:13 Psychology is so much a part of our everyday lives that all of us can benefit from understanding that what we know about human nature depends on how we know it.
- 209 01:25:21:24 So join us next time and become a more sophisticated consumer of research that purports to tell us about ourselves.
- 210 01:25:28:22 For *Discovering Psychology*, I'm Philip Zimbardo.
- 211 01:25:35:03 [Captioned by The Caption Center WGBH Educational Foundation]
- 212 01:26:10:18 >> *Funding for this program is provided by Annenberg/CPB to advance excellent teaching .*
- 213 01:26:21:15 *For information about this and other Annenberg/CPB programs, call 1-800-LEARNER and visit us at www.learner.org .*

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