

## Chapter

# VIII

## PSYCHOPATHOLOGY

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Most people who have never studied psychology have the impression that the field is primarily concerned with analyzing and treating mental illnesses (the branch of psychology called *abnormal psychology*). However, as you may have noticed, nearly all the research discussed in this book has focused on *normal* behavior. Overall, psychologists are more interested in normal behavior than in abnormal behavior because the vast majority of human behavior is not pathological, it is normal. Consequently, we would not know very much about human nature if we only studied the small percentage of it that is abnormal. Nevertheless, mental illness is to many people one of the most fascinating areas of study in all of psychology. A variety of studies essential to the history of psychology are included here.

First is a study that has kept the mental health profession talking for over 30 years. In this study, normally healthy people pretending to be mental patients entered psychiatric hospitals to see if the doctors and staff could distinguish them from those who were actually mentally ill. Second, no book about the history of psychological research would be complete without reference to Sigmund Freud. Therefore, a discussion of his most enduring concept, *ego defense mechanisms*, is discussed through the writings of his daughter, Anna Freud. The third study examined is an experiment with dogs as subjects that demonstrated a phenomenon called *learned helplessness*. This condition relates to psychopathology in that it led to a widely held theory explaining clinical depression in humans. And fourth, an intriguing and well-known experiment is presented involving overcrowded rats and their resulting deviant behavior, which may have offered some important implications for humans.

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### Reading 29: WHO'S CRAZY HERE, ANYWAY?

Rosenhan, D. L. (1973). On being sane in insane places. *Science*, 179, 250-258.

The task of distinguishing who is "normal" from those whose behavior may be considered "abnormal" is fundamental in psychology. The definition of

*abnormality* plays a key role in determining whether someone is diagnosed as mentally ill, and the diagnosis largely determines the treatment received by a patient. The line that divides normal from abnormal is not as clear as you may think. Rather, all behavior can be seen to lie on a continuum with normal, or what might be called *effective psychological functioning*, at one end, and abnormal, indicating a psychological disorder, at the other.

It is often up to mental health professionals to determine where on this continuum a particular person's behavior lies. To make this determination, clinical psychologists, psychiatrists, and other behavioral scientists and clinicians may use one or more of the following criteria:

- *Context of the Behavior.* This is a subjective judgment, but you know that some behaviors are clearly bizarre in a given situation, whereas they may be unremarkable in another. For example, nothing is strange about standing outside watering your lawn, unless you are doing it in your pajamas during a pouring rainstorm! A judgment about abnormality must carefully consider the context in which a behavior occurs.
- *Persistence of Behavior.* We all have our "crazy" moments. A person may exhibit abnormal behavior on occasion without necessarily demonstrating the presence of mental illness. For instance, you might have just received some great news and, as you are walking along a busy downtown sidewalk, you dance for half a block or so. This behavior, although somewhat abnormal, would not indicate mental illness, unless you began to dance down that sidewalk on, say, a weekly or daily basis. This criterion for mental illness requires that a bizarre, antisocial, or disruptive behavior pattern persist over time.
- *Social Deviance.* When a person's behavior radically violates society's expectations and norms, it may meet the criteria for social deviance. When deviant behavior is extreme and persistent, such as auditory or visual hallucinations, it is evidence of mental illness.
- *Subjective Distress.* Frequently, we are aware of our own psychological difficulties and the suffering they are causing us. When a person is so afraid of enclosed spaces that he or she cannot ride in an elevator, or when someone finds it impossible to form meaningful relationships with others, they often do not need a professional to tell them they are in psychological pain. This subjective distress is an important sign that mental health professionals use in making psychological diagnoses.
- *Psychological Handicap.* When a person has great difficulty being satisfied with life due to psychological problems, this is considered to be a psychological handicap. A person who fears success, for example, and therefore sabotages each new endeavor in life, is suffering from a psychological handicap.
- *Effect on Functioning.* The extent to which the behaviors in question interfere with a person's ability to live the life that he or she desires, and that society will accept, may be the most important factor in diagnosing

psychological problems. A behavior could be bizarre and persistent, but if it does not impair your ability to function in life, pathology may not be indicated. For example, suppose you have an uncontrollable need to stand on your bed and sing the national anthem every night before going to sleep. This is certainly bizarre and persistent, but unless you are waking up the neighbors, disturbing other household members, or feeling terrible about it, your behavior may have little effect on your general functioning and, therefore, may not be classified as a clinical problem.

These symptoms and characteristics of mental illness all involve *judgments* on the part of psychologists, psychiatrists, and other mental health professionals. Therefore, the foregoing guidelines notwithstanding, two questions remain: Are mental health professionals truly able to distinguish between the mentally ill and the mentally healthy? And what are the consequences of mistakes? These are the questions addressed by David Rosenhan in his provocative study of mental hospitals.

### THEORETICAL PROPOSITIONS

Rosenhan questioned whether the characteristics that lead to psychological diagnoses reside in the patients themselves or in the situations and contexts in which the observers (those who do the diagnosing) find the patients. He reasoned that if the established criteria and the training mental health professionals have received for diagnosing mental illness are adequate, then those professionals should be able to distinguish between the insane and the sane. (Technically, the words *sane* and *insane* are legal terms and are not usually used in psychological contexts. They are used here because they have a commonly understood meaning and Rosenhan incorporated them into his research.) Rosenhan proposed that one way to test mental health professionals' ability to categorize prospective patients correctly would be to have *normal* people seek admittance to psychiatric facilities to see if those charged with diagnosing them would see that, in reality, they were psychologically healthy. If these "pseudopatients" behaved normally in the hospital, just as they would in their daily lives outside the facility, and if the doctors and staff failed to recognize that they were indeed normal, this would provide evidence that diagnoses of the mentally ill are tied more to the situation than to the patient.

### METHOD

Rosenhan recruited eight participants (including himself) to serve as pseudopatients. The eight participants (three women and five men) consisted of one graduate student, three psychologists, one pediatrician, one psychiatrist, one painter, and one homemaker. The participants' mission was to present themselves for admission to twelve psychological hospitals, in five states on both the East and West Coasts of the United States.

All the pseudopatients followed the same instructions. They called the hospital and made an appointment. Upon arrival at the hospital they complained of hearing voices that said "empty," "hollow," and "thud." Other than

this single symptom, all participants acted completely normally and gave truthful information to the interviewer (other than changing their names and occupations to conceal the study's purpose). Upon completion of the intake interview, all the participants were admitted to the hospitals, and all but one was admitted with a diagnosis of *schizophrenia*.

Once inside the hospital, the pseudopatients dropped their pretend symptoms and behaved normally. The participants had no idea when they would be allowed to leave the hospital. It was up to them to gain their release by convincing the hospital staff that they were mentally healthy enough to be discharged. All the participants took notes of their experiences. At first, they tried to conceal this activity, but soon it was clear that this secrecy was unnecessary because hospital staff interpreted their "note-taking behavior" as just another symptom of their illness. The goal of all the pseudopatients was to be released as soon as possible, so they behaved as model patients, cooperating with the staff and accepting all medications (which they did not swallow but rather flushed down the toilet).

## RESULTS

The length of the hospital stays for the pseudopatients ranged from 7 days to 52 days, with an average of 19 days. The key finding in this study was that not one of the pseudopatients was detected by anyone on the hospital staff. When they were released, their mental health status was recorded in their files as "schizophrenia in remission." They recorded other interesting findings and observations, as well.

Although the hospitals' staffs of doctors, nurses, and attendants failed to detect the participants, the other patients could not be fooled so easily. In three of the pseudopatients' hospitalizations, 35 out of 118 real patients voiced suspicions that the participants were not actually mentally ill. They would make comments such as these: "You're not crazy!" "You're a journalist or a reporter." "You're checking up on the hospital!"

Contacts among the patients (whether participants or not) and the staff were minimal and often bizarre. One of the tests the pseudopatients initiated in the study was to approach various staff members and attempt to make verbal contact by asking common, normal questions (e.g., "When will I be allowed grounds privileges?" or "When am I likely to be discharged?"). Table 29-1 summarizes the responses they received.

**TABLE 29-1 Responses by Doctors and Staff to Questions Posed by Pseudopatients**

RESPONSE	PSYCHIATRISTS (%)	NURSES AND ATTENDANTS (%)
Moves on, head averted	71	88
Makes eye contact	23	10
Pauses and chats	2	2
Stops and talks	4	.5

Excerpted with permission from Rosenhan, D. L. (1973), "On Being Sane in Insane Places," *Science*, 179: 255. Copyright 1973 American Association for the Advancement of Science.

When the pseudopatient received a response from an attending physician, it frequently took the following form:

PSEUDOPATIENT: Pardon me, Dr. \_\_\_\_\_. Could you tell me when I am eligible for grounds privileges?

PSYCHIATRIST: Good morning, Dave. How are you today?

The doctor then moved on without waiting for a response.

In contrast to the severe lack of personal contact in the hospitals studied, the patients received no shortage of medications. The 8 pseudopatients in this study were given a total of 2,100 pills that, as mentioned previously, were not swallowed. The participants noted that many of the real patients also secretly disposed of their pills down the toilet.

Another anecdote from one of the pseudopatients tells of a nurse who unbuttoned her uniform to adjust her bra in front of a dayroom full of male patients. It was not her intention to be provocative, according to the participant's report, but she simply did not consider the patients to be "real people."

## DISCUSSION

Rosenhan's study demonstrated that even trained professionals often cannot distinguish the normal from the mentally ill in a hospital setting. According to Rosenhan, this is because of the overwhelming influence of the psychiatric hospital setting on the staff's judgment of an individual's behavior. Once patients are admitted to such a facility, the doctors and staff tend to view them in ways that ignore them as individual people. The attitude created is "If they are here, they must be crazy." More important was what Rosenhan referred to as the "stickiness of the diagnostic label." That is, when a patient is labeled as "schizophrenic," that diagnosis becomes his or her central characteristic or personality trait. From the moment the label is given and the staff knows it, they perceive all the patient's behavior as stemming from the diagnosis—thus, the lack of concern or suspicion over the pseudopatients' note taking, which was perceived as just another behavioral manifestation of the psychological label.

The hospital staff tended to ignore the situational pressures on patients and saw all behavior as relevant to the pathology assigned to the patients. This was demonstrated by the following observation of one of the participants:

One psychiatrist pointed to a group of patients who were sitting outside the cafeteria entrance half an hour before lunchtime. To a group of young resident psychiatrists he indicated that such behavior was characteristic of the "oral-acquisitive" nature of the [schizophrenic] syndrome. It seemed not to occur to him that there were simply very few things to do in a psychiatric hospital besides eating. (p. 253)

Beyond this, the sticky diagnostic label even colored how a pseudopatient's *history* would be interpreted. Remember, all the participants gave honest accounts of their pasts and families. Following is an example from Rosenhan's research of a pseudopatient's stated history, followed by its interpretation by

the staff doctor in a report after the participant was discharged. The participant's *true* history was as follows:

The pseudopatient had a close relationship with his mother, but was rather remote with his father during his early childhood. During adolescence and beyond, however, his father became a very close friend while his relationship with his mother cooled. His present relationship with his wife was characteristically close and warm. Apart from occasional angry exchanges, friction was minimal. The children had rarely been spanked. (p. 253)

The doctor's interpretation of this rather normal and innocuous history was as follows:

This white 39-year-old male manifests a long history of considerable ambivalence in close relationships which begins in early childhood. A warm relationship with his mother cools during his adolescence. A distant relationship with his father is described as becoming very intense. Affective [emotional] stability is absent. His attempts to control emotionality with his wife and children are punctuated by angry outbursts and, in the case of the children, spankings. And although he says he has several good friends, one senses considerable ambivalence embedded in those relationships also. (p. 253)

Nothing indicates that any of the doctor's distortions were intentional. He believed in the diagnosis (in this case, schizophrenia) and interpreted a patient's history and behavior in ways that were consistent with that diagnosis.

### SIGNIFICANCE OF FINDINGS

Rosenhan's study shook the mental health profession. The results pointed out two crucial factors. First, it appeared that the "sane" could not be distinguished from the "insane" in mental hospital settings. As Rosenhan himself stated in his article, "The hospital itself imposes a special environment in which the meaning of behavior can be easily misunderstood. The consequences to patients hospitalized in such an environment seem undoubtedly countertherapeutic" (p. 257). Second, Rosenhan demonstrated the danger of diagnostic labels. Once a person is labeled as having a certain psychological condition (such as schizophrenia, depression, etc.), that label eclipses any and all of his or her other characteristics. All behavior and personality characteristics are then seen as stemming from the disorder. The worst part of this sort of treatment is that it can become self-confirming. That is, if a person is treated in a certain way consistently over time, he or she may begin to behave that way.

Out of Rosenhan's work grew greater care in diagnostic procedures and increased awareness of the dangers of applying labels to patients. The problems this study addressed began to decline with the decrease in patients confined to mental hospitals. This decrease in hospital populations was brought about by the discovery in the 1950s and increased use of antipsychotic medications, which can reduce symptoms in most patients enough for them to live outside a hospital and in many cases lead relatively normal lives. Concurrent to this was the growth of community mental health facilities, crisis intervention

centers, and behavior therapies that focus on specific problems and behaviors and tend to avoid labels altogether.

This does not imply by any means that the mental health profession has eliminated labels. However, largely because of Rosenhan's research and other research in the same vein, psychiatric labels are now used more carefully and treated with the respect their power demands.

### QUESTIONS AND CRITICISMS

One research and teaching hospital whose staff had heard about Rosenhan's findings before they were published doubted that such mistakes in diagnosis could be made in their hospital. To test this, Rosenhan informed the hospital staff that during the next 3 months 1 or more pseudopatients would try to be admitted to their psychiatric unit. Each staff member was asked to rate each presenting patient on a 10-point scale as to the likelihood that he or she was a pseudopatient. At the end of 3 months, 193 patients had been admitted. Of those, 41 were considered, with high confidence, to be pseudopatients by at least 1 staff member. At least 1 psychiatrist suspected 23, and 1 psychiatrist and 1 other staff member identified 19. Rosenhan (the tricky devil) had not sent any pseudopatients to the hospital during the 3-month period! "The experiment is instructive," states Rosenhan:

It indicates that the tendency to designate sane people as insane can be reversed when the stakes (in this case prestige and diagnostic ability) are high. But one thing is certain: Any diagnostic process that lends itself so readily to massive errors of this sort cannot be a very reliable one. (p. 252)

Rosenhan replicated this study several times in 12 hospitals between 1973 and 1975. Each time he found similar results (see Greenberg, 1981; Rosenhan, 1975). However, other researchers dispute the conclusions Rosenhan drew from this research. Spitzer (1976) argued that although the methods used by Rosenhan appeared to invalidate psychological diagnostic systems, in reality they did not. For example, it should not be difficult for pseudopatients to lie their way into a mental hospital because many such admissions are based on verbal reports (and who would ever suspect someone of using trickery to get *into* such a place?). The reasoning here is that you could walk into a medical emergency room complaining of severe intestinal pain and you might get yourself admitted to the hospital with a diagnosis of gastritis, appendicitis, or an ulcer. Even though the doctor was tricked, Spitzer contended, the diagnostic methods were not invalid. In addition, Spitzer has pointed out that although the pseudopatients behaved normally once admitted to the hospital, such symptom variation in psychiatric disorders is common and does not mean that the staff was incompetent in failing to detect the deception.

The controversy over the validity of psychological diagnosis that began with Rosenhan's 1973 article continues. Regardless of the ongoing debate, we can have little doubt that Rosenhan's study remains one of the most influential in the history of psychology.

**RECENT APPLICATIONS**

As an indication of this continuing controversy, we can consider two of many studies that have used Rosenhan's research in challenging the validity of diagnoses made by mental health professionals. One of these was conducted by Thomas Szasz, a psychiatrist who is a well-known critic of the overall concept of mental illness since the early 1970s. His contention is that mental illnesses are not diseases and cannot be properly understood as such but rather must be seen as "problems in living" that have social and environmental causes. In one article, Szasz makes the case that the *crazy talk* exhibited by some who have been diagnosed with a mental illness "is not a valid reason for concluding that a person is insane" simply because one person (the mental health professional) cannot comprehend the other (the patient) (Szasz, 1993, p. 61).

Another study building on Rosenhan's 1973 article examined how, in some real-life situations, people may indeed purposely fabricate symptoms of mental illness (Broughton & Chesterman, 2001). The case study discussed in the article involved a man accused of sexually assaulting a teenage boy. When the perpetrator was evaluated for psychiatric problems, he displayed various psychotic behaviors. Upon further examination, clinicians found that he had faked all his symptoms. The authors point out that mental health professionals traditionally have assumed the accuracy of patient statements in diagnosing psychological disorders (as they did with Rosenhan's pseudopatients). However, they suggest that inventing symptoms "is a fundamental issue for all psychiatrists, especially [when] . . . complicated by external socio-legal issues which could possibly serve as motivation for the fabrication of psychopathology" (p. 407). In other words, we have to be careful that criminals are not able to fake mental illness as a "get-out-of-jail-free card."

How do the people themselves feel who have been given a psychiatric diagnostic label? In a survey of more than 1,300 mental health consumers, Wahl (1999) asked participants about their experiences of being discriminated against and stigmatized. The majority of respondents reported feeling the effects of the stigma surrounding mental illness from various sources, including community members in general, family, church members, coworkers, and even mental health professionals. In addition, the author reported, "The majority of respondents tended to try to conceal their disorders and worried a great deal that others would find out about their psychiatric status and treat them unfavorably. They reported discouragement, hurt, anger, and lowered self-esteem as a result of their experiences and urged public education as a means for reducing stigma" (p. 467).

The authors of a related study entitled "Listen to My Madness" (Lester & Tritter, 2005) suggested that one possible approach to help us understand the experience of those with mental illness is to interpret their impairment in society similar to our perception of those with other types of defined disabilities. These authors propose that seriously mentally ill individuals' interaction with society is often very similar to people with other disabilities in terms of receiving care. By applying a disability model to the mentally ill, they



will have an easier time gaining access to and receiving the services and help they need.

### CONCLUSION

It is hoped that we, as a culture, will increase our tolerance and understanding of mental illness. As we do, our ability to diagnose psychological disorders will continue to improve, although, in many cases, it continues to be as much art as science. Chances are we will never do away with psychiatric labels; they are an important part of effective treatment of psychological disorders, just as names of diseases are part of diagnosing and treating physical illnesses. However, if we are stuck with labels (no pun intended), we must continue to work to take the stigma, embarrassment, and shame out of them.

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### Reading 30: YOU'RE GETTING DEFENSIVE AGAIN!

Freud, A. (1946). *The ego and the mechanisms of defense*. New York: International Universities Press.

In a book about the history of research that changed psychology, one imposing figure would be extremely difficult to omit: Sigmund Freud (1856-1939). Psychology as we know it would probably not exist today without Freud's contributions. He was largely responsible for elevating our interpretations of human behavior (especially maladaptive behavior) from irrational superstitions of demonic possession and evil spirits to the rational approaches of reason and science. Without an examination of his work, this book would be incomplete. Now, you may be asking yourself, if Sigmund Freud is so important, why does this discussion focus on a book written by his daughter, Anna Freud (1895-1982)? The answer to that question requires a bit of explanation.

Although Sigmund Freud was integral to psychology's history and, therefore, is a necessary part of this book, the task of including his research here along with all the other researchers is a difficult one because Freud did not reach his discoveries through a clearly defined scientific methodology. It

is not possible to choose a single study or series of experiments to represent his work, as has been done for other researchers in this book. Freud's theories grew out of his detailed observations of his patients over decades of clinical analysis. Consequently, his writings are abundant, to say the least. The English translation of his collected writings (Freud, 1953 to 1974) totals 24 volumes! Obviously, only a very small piece of his work can be discussed here. In choosing what to include, consideration was given to the portions of Freud's theories that have stood the test of time relatively unscathed. Over the past century, a great deal of criticism has been focused on Freud's ideas, and in the last 50 years especially, his work has been drawn into serious question from a scientific perspective. Critics have argued that many of his theories either cannot be tested scientifically; or if they are tested, they prove to be invalid. Therefore, although few would doubt the historical importance of Freud's work, many of his theories about the structure of personality, the development of personality through five psychosexual stages, and the sources of people's psychological problems have been rejected by most psychologists today. However, some aspects of his work have received more positive reviews through the years and now enjoy relatively wide acceptance. One of these is his concept of the *ego defense mechanisms*: psychological "weapons" that your ego uses to protect you from your self-created anxiety. This element from Freud's work has been selected to represent Freud in this book.

Sigmund Freud's discovery of ego defense mechanisms occurred gradually over 30 or more years as his experiences in dealing with psychological problems grew. A cohesive, self-contained discussion of this topic does not appear anywhere in Sigmund Freud's many volumes. In fact, he passed that job on to his daughter, who was an important psychoanalyst in her own right, specializing in helping children. Freud acknowledged this fact in 1936 just before Anna's book *The Ego and the Mechanisms of Defense* was originally published in German: "There are an extremely large number of methods (or mechanisms, as we say) used by the ego in the discharge of its defensive functions. My daughter, the child analyst, is writing a book about them" (S. Freud, 1936). Because it was Anna Freud who synthesized her father's theories regarding the defense mechanisms into a single work, her book has been chosen for our discussion of the work of Sigmund Freud.

### THEORETICAL PROPOSITIONS

To examine Freud's notion of defense mechanisms, we should discuss briefly his theory of the structure of personality. Freud proposed that personality consists of three components: *id*, *ego*, and *superego*.

In Freud's view, the *id* (which is simply Latin for "it") is present at birth and contains your basic human biological urges and instincts such as hunger, thirst, and sexual impulses. Whenever these needs are not met, the *id* generates strong signals that demand the person find a way to satisfy them—and to do so immediately! The *id* operates on what Freud called the *pleasure principle*,

meaning it insists upon instantaneous gratification of all desires, regardless of reason, logic, safety, or morality. Freud believed that dark, antisocial, and dangerous instinctual urges (especially sexual ones) are present in everyone's id and that these constantly seek expression. You are not usually aware of them because, Freud contended, the id operates on the unconscious level. However, if you were lacking the other parts of your personality and only had an id, Freud would expect your behavior to be amoral, shockingly deviant, and even fatal to you and others.

In Freud's view, the reason you do not behave in these dangerous and deviant ways is that your ego and superego develop to place limits and controls on the impulses of your id. According to Freud, the ego (*ego* means "the self") operates on the *reality principle*, which means it is alert to the real world and the consequences of behavior. The ego is conscious, and its job is to satisfy your id's urges, but to do so using means that are rational and reasonably safe. However, the ego also has limits placed upon it by the superego (meaning "above the ego"). Your superego, in essence, requires that the ego finds solutions to the id's demands that are moral and ethical, according to your own internalized set of rules about what is good or bad, right or wrong. These moral rules, Freud contended, were instilled in you by your parents, and if you behave in ways that violate them your superego will punish you with its own very effective weapon: guilt. Do you recognize the superego? It is commonly referred to as your *conscience*. Freud believed that your superego operates on both conscious and unconscious levels.

Freud's conceptualization of your personality was a dynamic one in which the ego is constantly trying to balance the needs and urges of the id with the moral requirements of the superego in determining your behavior. Following is an example of how this might work. Imagine a young man strolling down the street in a small town. It is 10:00 P.M., and he is on his way home. Suddenly he realizes he is hungry. He passes a grocery store and sees food on the other side of the large windows, but the store is closed. His id might say, "Look! Food! Jump through the glass and get some!" (Remember, the id wants immediate satisfaction, regardless of the consequences.) He would probably not be aware of the id's suggestion because it would be at a level below his consciousness. The ego would "hear" it, though, and because its job is to protect the boy from danger, it might respond, "No, that would be dangerous. Let's go around back, break into the store, and steal some food!" At this, the superego would remark indignantly, "You can't do that! It's immoral, and if you do it I will punish you!" Therefore, the young man's ego reconsiders and makes a new suggestion that is acceptable to both the id and the superego: "You know, there's an all-night fast-food place four blocks over. Let's go there and buy some food." This solution, assuming that the boy is psychologically healthy, is finally the one that is reflected in his behavior.

According to Freud, the reason most people do not behave in antisocial or deviant ways is because of this system of checks and balances among the three parts of the personality. But what would happen if the system malfunctioned—if

this balance were lost? One way this could happen would be if the demands of the id became too strong to be controlled adequately by the ego. What if the unacceptable urges of the id edged their way into your consciousness (into what Freud called the *preconscious*) and began to overpower the ego? Freud contended that if this happens, you will experience a very unpleasant condition called *anxiety*. Specifically, he called it *free-floating anxiety*, because although you feel anxious and afraid, the causes are not fully conscious, so you are not sure why you feel this way.

When this state of anxiety exists, it is uncomfortable and we are motivated to change it. To do this, the ego will bring on its "big guns," the *ego defense mechanisms*. The purpose of the defense mechanisms is to prevent the id's forbidden impulse from entering consciousness. If this is successful, the discomfort of the anxiety associated with the impulse is relieved. The defense mechanisms ward off anxiety through self-deception and the distortion of reality so that the id's urges will not have to be acknowledged.

## METHOD

Freud claimed to have discovered the defense mechanisms gradually over many years of clinical interactions with his patients. In the years since Sigmund Freud's death and since the publication of Anna Freud's book, many refinements have been made in the interpretation of the defense mechanisms. The next section summarizes a selection of only those mechanisms identified by Sigmund Freud and elaborated on by his daughter.

## RESULTS AND DISCUSSION

Anna Freud (p. 44) identified 10 defense mechanisms that had been described by her father. Five of the original mechanisms that are commonly used and widely recognized today are discussed here: *repression*, *regression*, *projection*, *reaction formation*, and *sublimation*. Keep in mind that the primary function of the defense mechanisms is to alter reality in order to protect against anxiety.

### Repression

Repression is said to be the most basic and most common mechanism we use in defending the ego. In his early writings, Freud used the terms *repression* and *defense* interchangeably and interpreted repression to be virtually the only defense mechanism. Later, however, he acknowledged that repression was only one of many psychological processes available to protect a person from anxiety. Freud believed that a person's use of repression forces disturbing thoughts completely out of consciousness. Consequently, the anxiety associated with the "forbidden" thoughts is avoided because the person is unaware of their existence. In Freud's view, repression is often employed to defend against the anxiety caused by unacceptable sexual desires. For example, a woman who has sexual feelings about her father would probably experience intense anxiety if these impulses were to become conscious. To avoid that anxiety, she might

repress her unacceptable desires, forcing them fully into her unconscious. This would not mean that her urges are gone, but because they are repressed, they cannot produce anxiety.

You might be wondering how such thoughts are ever discovered if they remain in the unconscious. According to Freud, these hidden conflicts may be revealed through slips of the tongue, through dreams, or by the various techniques used in psychoanalysis, such as free association or hypnosis. Furthermore, repressed desires, in the Freudian view, can create psychological problems that are expressed in the form of *neuroses*. For instance, consider again the woman who has repressed sexual desires for her father. She might express these impulses by becoming involved in successive failed relationships with men in an unconscious attempt to resolve her conflicts about her father.

### Regression

Regression is a defense used by the ego to guard against anxiety by causing the person to retreat to the behaviors of an earlier stage of development that was less demanding and safer. Often when a second child is born into a family, the older sibling will regress, using younger speech patterns, wanting a bottle, and even bed-wetting. Adults can use regression as well. Consider a man experiencing a "midlife crisis" who is afraid of growing old and dying. To avoid the anxiety associated with these unconscious fears, he might regress to an adolescent stage by becoming irresponsible, cruising around in a sports car, trying to date younger women, and even eating the foods associated with his teenage years. Another example of regression is the married adult who goes home to mother whenever a problem in the marriage arises.

### Projection

Imagine for a moment that your ego is being challenged by your id. You're not sure why, but you are experiencing a lot of anxiety. If your ego uses the defense mechanism of projection to eliminate the anxiety, you will begin to see *your* unconscious urges in *other* people's behavior. That is, you will *project* your impulses onto them. In theory, this externalizes the anxiety-provoking feelings and reduces the anxiety. You will not be aware that you're doing this, and the people onto whom you project may not be guilty of your accusations. An example of this offered by Anna Freud involves a husband who is experiencing impulses to be unfaithful to his wife (p. 120). He may not even be conscious of these urges, but they are creeping up from his id and creating anxiety. To ward off the anxiety, he projects his desires onto his wife, becomes intensely jealous, and accuses her of having affairs, even though no evidence supports his claims. Another example is the woman who is afraid of aging and begins to point out how old her friends and acquaintances are looking. The individuals in these examples are not acting or lying; they truly believe their projections. If they did not, the defense against anxiety would fail.

### Reaction Formation

The defense identified by Freud as a reaction formation is exemplified by a line from Shakespeare's *Hamlet*, when Hamlet's mother, after watching a scene in a play, remarks to Hamlet, "The lady doth protest too much, me thinks." When a person is experiencing unacceptable, unconscious "evil" impulses, anxiety caused by them might be avoided by engaging in behaviors that are the exact *opposite* of the id's real urges. Anna Freud pointed out that these behaviors are usually exaggerated or even obsessive. By adopting attitudes and behaviors that demonstrate outwardly a complete rejection of the id's true desires, anxiety is blocked. Reaction formations tend to become a permanent part of an individual's personality unless the id-ego conflict is somehow resolved. As an example of this, reconsider the husband who unconsciously desires other women. If he employs a reaction formation rather than projection to prevent his anxiety, he may become obsessively devoted to his wife and shower her with gifts and pronouncements of his unwavering love. Another example comes from many disturbing news reports of the violent crime referred to as *gay bashing*. In a Freudian interpretation, a man who is experiencing unconscious homosexual desires (which he fears, due to society's disapproval of nonheterosexual orientations) might engage in the extreme opposite behavior of attacking and beating gay men to hide his true desires and the anxiety associated with them (this concept is discussed further in this reading).

### Sublimation

Both Sigmund Freud and Anna Freud considered most of the defense mechanisms, including the four previously described, as indicating problems in psychological adjustment (*neuroses*). Conversely, they saw the defense of sublimation as not only normal but also desirable. When people invoke sublimation, they are finding socially acceptable ways of discharging anxious energy that is the result of unconscious forbidden desires. Sigmund Freud maintained that because everyone's id contains these desires, sublimation is a necessary part of a productive and healthy life. Furthermore, he believed that most strong desires can be sublimated in various ways. Someone who has intense aggressive impulses might sublimate them by engaging in contact sports or becoming a surgeon. A teenage girl's passion for horseback riding might be interpreted as sublimated unacceptable sexual desires. A man who has an erotic fixation on the human body might sublimate his feelings by becoming a painter or sculptor of nudes.

Freud proposed that all of what we call "civilization" has been made possible through the mechanism of sublimation. In his view, humans have been able to sublimate their primitive biological urges and impulses, channeling them instead into building civilized societies. However, Freud suggested, sometimes humans' unconscious forces overpower our *collective egos* and these primitive, animalistic urges may burst out in barbaric, uncivilized expressions, such as war. Overall, however, it is only through sublimation that civilization can exist at all (S. Freud, 1936).

### IMPLICATIONS AND RECENT APPLICATIONS

Although Anna Freud stated clearly in her book that the use of defense mechanisms is often associated with neurotic behavior, this is not always the case. Nearly everyone uses various defense mechanisms occasionally in their lives, sometimes to help them cope with periods of increased stress. They help us reduce our anxiety and maintain a positive self-image. Use of certain defense mechanisms has even been shown to reduce unhealthy physiological activity. For example, use of projection has been found to be associated with lower blood pressure (Cramer, 2003). Nevertheless, defense mechanisms involve self-deception and distortions of reality that can produce negative consequences if they are overused. For example, a person who uses regression every time life's problems become overwhelming might never develop the strategies necessary to deal with their problems and solve them. Consequently, the person's development as a whole person may be inhibited. Moreover, Freud and many other psychologists have contended that when anxiety caused by specific conflicts is repressed, it is sometimes manifested in other ways, such as phobias, anxiety attacks, or obsessive-compulsive disorders.

Most researchers today have questioned most of Freud's theories, including his notion of ego defense mechanisms. Do the defense mechanisms really exist? Do they actually function "unconsciously" to block anxiety created by forbidden impulses of the id? Probably, the most often cited criticism of all of Freud's work is that to test it scientifically is difficult at best—and usually impossible. Many studies have tried to demonstrate the existence of various Freudian concepts. The results have been mixed. A few of his ideas have found some scientific support (see Cramer, 2007); others have been clearly disproved; and still others simply cannot be studied (see Fisher & Greenberg, 1977; 1995). One fascinating study may have found supporting scientific evidence that *homophobia*, an irrational fear, avoidance, and prejudice toward gay and lesbian individuals, may be a reaction formation used to ward off the extreme anxiety caused by a person's own repressed homosexual tendencies (Adams, Wright, & Lohr, 1996). In this study, a group of men were given a written test to determine their level of homophobia and then divided into two groups: homophobic and nonhomophobic. Then participants were exposed to videos depicting explicit heterosexual, gay, or lesbian sexual scenes, and while they viewed these videos they were monitored for physiological signs of sexual arousal. The only difference found between the groups was when they viewed the videos of gay males. In this condition, "The results indicate that the homophobic men showed a significant increase in [arousal], but that the [nonhomophobic] men did not" (p. 443). In fact, 66% of the nonhomophobic group showed no significant signs of arousal while viewing the homosexual video, but only 20% of the homophobic group showed little or no evidence of arousal. Furthermore, when asked to rate their level of arousal, the homophobic men *underestimated* their degree of arousal in response to the homosexual video. This study's results are clearly consistent with Anna Freud's description of the defense mechanism of reaction formation and lend support for a possible explanation of violence targeted against gay individuals.

**CONCLUSION**

As evidenced by studies discussed in this reading, scientific interest in the defense mechanisms appears to be on the upswing among psychologists in various subfields, including cognition, human development, personality, and social psychology (see Cramer, 2007). Through an awareness and understanding of the defense mechanisms, your ability to obtain important insights into the causes of people's actions is clearly enhanced. If you keep a list of the defense mechanisms handy in your "brain's back pocket," you may begin to notice them in others or even in yourself. By the way, if you think someone is using a defense mechanism, remember this: he or she is doing so to avoid unpleasant anxiety. Therefore, it is probably not a great idea to bring it to his or her attention. Knowledge of the defense mechanisms can be a powerful tool in your interactions with others, but that knowledge must be used carefully and responsibly.

You can easily experience for yourself the continuing influence of Anna Freud's synthesis and analysis of her father's concept of defense mechanisms by picking up virtually any recent academic or scholarly work that discusses psychoanalytic theory in detail. Most of the Freud citations you will encounter will be referring to Sigmund, and rightly so. But when the discussion turns to the defense mechanisms, it is Anna Freud's 1946 book and its various revisions that serve as the authoritative work on the topic.

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**Reading 31: LEARNING TO BE DEPRESSED**

Seligman, M. E. P., & Maier, S. F. (1967). Failure to escape traumatic shock. *Journal of Experimental Psychology, 74*, 1-9.

If you are like most people, you expect that your actions will produce certain consequences. Your expectations cause you to behave in ways that will produce desirable consequences *and* to avoid behaviors that will lead to undesirable consequences. In other words, your actions are determined, at least in part, by your belief that they will bring about a certain result; they are contingent upon a certain consequence.

Let's assume for a moment that you are unhappy in your present job, so you begin the process of making a change. You make contacts with others in



your field, read publications that advertise positions in which you are interested, begin training in the evening to acquire new skills, and so on. All those actions are motivated by your belief that your effort will eventually lead to the outcome of a better job and a happier life. The same is true of interpersonal relationships. If you are in a relationship that is wrong for you because it is abusive or it otherwise makes you unhappy, you will take the necessary actions to change it or end it because you expect to succeed in making the desired changes.

All these are issues of power and control. Most people believe they are personally powerful and able to control what happens to them, at least part of the time, because they have exerted control in the past and have been successful. They believe they are able to help themselves achieve their goals. If this perception of power and control is lacking, all that is left is helplessness. If you feel you are stuck in an unsatisfying job and you are unable to find another job or learn new skills to improve your professional life, you will be unlikely to make the effort needed to change. If you are too dependent on the person with whom you have a damaging relationship and you feel powerless to fix it or end it, you may simply remain in the relationship and endure the pain.

Perceptions of power and control are crucial for psychological and physical health (refer to Reading 20 on the research by Langer and Rodin regarding issues of control for the elderly in nursing homes). Imagine how you would feel if you suddenly found that you no longer had the power or control to make changes in your life, that what happened to you was independent of your actions. You would probably feel helpless and hopeless, and you would give up trying altogether. In other words, you would become depressed.

Martin Seligman, a well-known and influential behavioral psychologist, proposed that our perceptions of power and control are learned from experience. He believes that when a person's efforts at controlling certain life events fail repeatedly, the person may stop attempting to exercise control altogether. If these failures happen often enough, the person may generalize the perception of lack of control to all situations, even when control may actually be possible. This person then begins to feel like a pawn of fate and becomes helpless and depressed; Seligman termed this cause of depression *learned helplessness*. He developed his theory at the University of Pennsylvania, in a series of now classic experiments that used dogs as subjects. The research discussed here, which Seligman conducted with Steven Maier, is considered to be the definitive original demonstration of his theory.

### **THEORETICAL PROPOSITIONS**

Seligman had found in an earlier experiment on learning that when dogs were exposed to electrical shocks they could neither control nor escape from, they later failed to learn to escape from shocks when such escape was easily available. You have to imagine how odd this looked to a behaviorist. In the laboratory, dogs had experienced shocks that were designed to be punishing but not harmful. Later, they were placed in a shuttle box, which is a large box with two halves divided by a partition. An electrical current could be activated in

the floor on either side of the box. When a dog was on one side and felt the electricity, it simply had to jump over the partition to the other side to escape the shock. Normally, dogs and other animals learn this escape behavior very quickly (it's not difficult to see why!). In fact, if a signal (such as a flashing light or a buzzer) warns the dog of the impending electrical current, the animal will learn to jump over the partition before the shock and thus avoid it completely. However, in Seligman's experiment, when the dogs that had already experienced electrical shocks from which they could not escape were placed in the shuttle box, they did not learn this escape-avoidance behavior.

Seligman theorized that something in what the animals had learned about their ability to control the unpleasant stimulus determined the later learning. In other words, these dogs had learned from previous experience with electrical shocks that their actions were ineffective in changing the consequence of the shocks. Then, when they were in a new situation where they did have the power to escape—to exercise control—they just gave up. They had learned to be helpless.

To test this theory, Seligman and Maier proposed to study the effect of controllable versus uncontrollable shock on later ability to learn to avoid shock.

#### METHOD

This is one of several classic studies in this book that used animals as subjects. However, this one, probably more than any of the others, raises questions about the ethics of animal research. Dogs received electrical shocks that were designed to be painful (though not physically harmful) in order to test a psychological theory. Whether such treatment was (or is) ethically justifiable is an issue that must be faced by every researcher and student of psychology. (This issue is addressed again in this reading after a discussion of the results of Seligman's research.)

Subjects for this experiment were 24 "mongrel dogs, 15 to 19 inches high at the shoulder and weighing between 25 and 29 pounds" (p. 2). They were divided into 3 groups of 8 subjects each. One group was the *escape group*, another the *no-escape group*, and the third was the *no-harness control group*.

The dogs in the escape and no-escape groups were placed individually in a harness similar to that developed by Pavlov (see the discussion of Pavlov's methods in Reading 9); they were restrained but not completely unable to move. On either side of the dog's head was a panel to keep the head facing forward. A subject could press the panel on either side by moving its head. When an electrical shock was delivered to a dog in the escape group, it could terminate the shock by pressing either panel with its head. For the no-escape group, each dog was paired with a dog in the escape group (this is an experimental procedure called *yoking*). Identical shocks were delivered to each pair of dogs at the same time, but the no-escape group had no control over the shock. No matter what those dogs did, the shock continued until it was terminated by the panel press of the dog in the escape group. This ensured that both groups of dogs received exactly the same duration and intensity of shock, the only difference being that one group had the

power to stop it and the other did not. The 8 dogs in the no-harness control group received no shocks at this stage of the experiment.

The subjects in the escape and no-escape groups received 64 shocks at about 90-second intervals. The escape group quickly learned to press the side panels and terminate the shocks (for themselves and for the no-escape group). Then, 24 hours later, all the dogs were tested in a shuttle box similar to the one already described. Lights were attached on both sides of the box. When the lights were turned off on one side, an electrical current would pass through the floor of the box 10 seconds later. If a dog jumped the barrier within those 10 seconds, it escaped the shock completely. If not, it would continue to feel the shock until it jumped over the barrier or until 60 seconds of shock passed, at which time the shock was discontinued. Each dog was given 10 trials in the shuttle box.

Learning was measured by the following: (a) how much time it took, on average, from the time the light in the box went out until the dog jumped the barrier and (b) the percentage of dogs in each group that failed entirely to learn to escape the shocks. Also, the dogs in the no-escape group received 10 additional trials in the shuttle box 7 days later to assess the lasting effects of the experimental treatment.

### RESULTS

In the escape group, the time it took for the dogs to press the panel and stop the shock quickly decreased over the 64 shocks. In the no-escape group, panel pressing completely stopped after 30 trials.

Figure 31-1 shows the average time until escape for the three groups of subjects over all the trials in the shuttle box. Remember, this was the time between when the lights were turned off and when the animal jumped over the barrier. The difference between the no-escape group and the other two groups was statistically significant, but the small difference between the escape group and the no-harness group was insignificant. Figure 31-2 illustrates

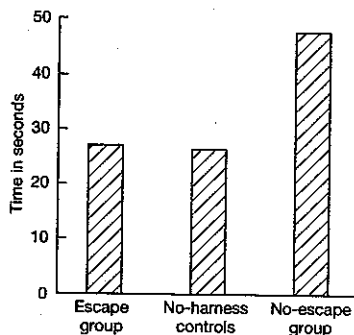


FIGURE 31-1 Average time to escape in shuttle box. (From p. 3.)

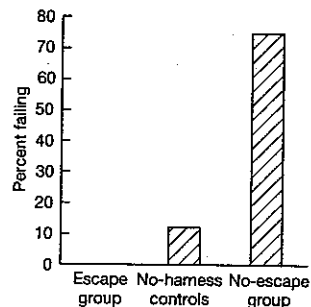


FIGURE 31-2 Percent of subjects failing to learn to escape shock in shuttle box. (From p. 3.)

the percentage of subjects from each group that failed to jump over the barrier and escape the shock in the shuttle box in at least 9 of the 10 trials. This difference between the escape and no-escape groups was also highly significant. In the no-escape group, 6 failed entirely to escape on either 9 or all 10 of the trials. Those 6 dogs were tested again in the shuttle box 7 days later. In this delayed test, 5 of the 6 failed to escape on every trial.

### DISCUSSION

Because the only difference between the escape and the no-escape groups was the dogs' ability to actively terminate the shock, Seligman and Maier concluded that it must have been this control factor that accounted for the clear difference in the two groups' later learning to escape the shock in the shuttle box. In other words, the reason the escape group subjects performed normally in the shuttle box was that they had learned in the harness phase that their behavior was correlated with the termination of the shock. Therefore, they were motivated to jump the barrier and escape from the shock. For the no-escape group, the termination of shock in the harness was independent of their behavior. Thus, because they had no expectation that their behavior in the shuttle box would terminate the shock, they had no incentive to attempt to escape. They had, as Seligman and Maier had predicted, learned to be helpless.

Occasionally, a dog from the no-escape group made a successful escape in the shuttle box. Following this, however, it reverted to helplessness on the next trial. Seligman and Maier interpreted this to mean that the animal's previous ineffective behavior in the harness prevented the formation of a new behavior (jumping the barrier) to terminate shock in a new situation (the shuttle box), *even after a successful experience*.

In their article, Seligman and Maier reported the results of a subsequent experiment that offered some interesting additional findings. In this second study, dogs were first placed in the harness-escape condition where the panel press would terminate the shock. They were then switched to the no-escape harness condition before receiving 10 trials in the shuttle box. These subjects continued to attempt to press the panel throughout all the trials in the no-escape harness and did not give up as quickly as did those in the first study. Moreover, they all successfully learned to escape and avoid shock in the shuttle box. This indicated that once the animals had learned that their behavior could be effective, later experiences with failure were not adequate to extinguish their motivation to change their fate.

### SUBSEQUENT RESEARCH

Of course, Seligman wanted to do what you are probably already doing in your mind: apply these findings to humans. In later research, he asserted that the development of depression in humans involves processes similar to those of learned helplessness in animals. In both situations there is passivity, giving up and *just sitting there*, lack of aggression, slowness to learn that a certain behavior

is successful, weight loss, and social withdrawal. Both the helpless dog and the depressed human have learned from specific past experiences that their actions are useless. The dog was unable to escape the shocks, no matter what it did, while the human had no control over events such as the death of a loved one, an abusive parent, the loss of a job, or a serious illness (Seligman, 1975).

The learned helplessness that leads to depression in humans can have serious consequences beyond the depression itself. Research has demonstrated that the elderly who, for various reasons such as nursing-home living, are forced to relinquish control over their daily activities have poorer health and a greater chance of dying sooner than those who are able to maintain a sense of personal power. In addition, several studies have demonstrated that uncontrollable stressful events can play a role in such serious diseases as cancer. One such study found an increased risk of cancer in individuals who in previous years had suffered the loss of a spouse, the loss of a profession, or the loss of prestige (Horn & Picard, 1979). In hospitals, patients are expected by the doctors and staff to be cooperative, quiet, and willing to place their fates in the hands of the medical authorities. Patients believe that to recover as quickly as possible they must follow doctors' and nurses' instructions without question. A prominent health psychologist has suggested that being a "good hospital patient" implies that one must be passive and give up all expectations of control. This actually may create a condition of learned helplessness in the patients whereby they fail to exert control later when control is both possible and desirable for continued recovery (Taylor, 1979).

As further evidence of the learned helplessness effect, consider the following remarkable study by Finkelstein and Ramey (1977). Groups of human infants had rotating mobiles mounted over their cribs. One group of infants had special pressure-sensitive pillows so that they could control the rotation of the mobile by moving their heads. Another group of infants had the same mobiles, but these were programmed to turn randomly without any control by the infants. After a 2-week exposure to the mobiles for 10 minutes each day, the control-pillow group had become very skilled at moving their heads to make the mobiles turn. However, the most important finding came when the no-control group of infants was later given the same control pillows and an even greater amount of learning time than the first group. The infants failed entirely to learn to control the rotation of the mobiles. Their experience in the first situation had taught them that their behavior was ineffective, and this knowledge transferred to the new situation where control was possible. In terms of moving mobiles, the infants had learned to be helpless.

### RECENT APPLICATIONS

Seligman's study of learned helplessness continues to influence current research and stimulate debate in many fields. His ideas dovetail with those of other researchers working to increase our understanding of the importance of personal control over events in our lives.

One terribly timely example of this broad influence relates to the widespread fear of terrorist attacks and the professed "War on Terror." Following the attacks on the World Trade Center and Pentagon on September 11, 2001, the psychological reverberations of that horrific event echoed across the United States and throughout the world. Symptoms included increased anxiety, anger, nervousness, increased alcohol use, feelings of a loss of control over external events, and helplessness (Centers for Disease Control, 2002). Indeed, one of the goals of terrorists is to make people feel vulnerable and helpless. One clinical psychologist summarized the effects of the attack like this:

The threat of terrorism creates the textbook psychological setup for anxiety and depression. Psychologists call this "anticipatory anxiety"—waiting for the proverbial shoe to drop or, in this case, the terrorist bomb to go off. Add the element of "learned helplessness"—the perception that there is nothing or very little you can do to stop the terrorism—and depression, vulnerability, and a profound sense of loss of control will develop. These are precisely the conditions to which we have all been exposed since the September 11 attacks. They define the "New Normalcy" and the "September 11 Syndrome." (Braiker, 2002)

Interestingly, a more recent study suggested that indirectly experiencing a traumatic event, may, after some time passes, lead to some psychological *benefits* (Swickert et al., 2006). Although the authors do not deny or seek to diminish the profoundly painful psychological effects of witnessing the September 11 attacks, they point to a paradoxical result in some individuals that they refer to as *posttraumatic growth*. They point out past research which postulated that "posttraumatic growth occurs when fundamental assumptions about the self, others, and the future are challenged. In response to this challenge, traumatized individuals may try to find meaning from their experience. Thus, individuals often discover that they have benefited from the traumatic event" (p. 566). You may ask, what possible benefits could come from such an experience? These authors reported that other research has found a wide variety of positive characteristics that strengthened in the aftermath of the 9/11 tragedy, including gratitude, hope, kindness, leadership, love, spirituality, and teamwork. They reported that individuals who indirectly witnessed the attacks reported similar benefits soon after the event, but these effects appeared to diminish over time.

## CONCLUSION

We return now to the issue of experimental ethics. Most of us have difficulty reading about animals, especially dogs, being subjected to painful shocks in a psychology laboratory. Over the years, strict standards have been developed to ensure that laboratory animals are treated humanely (see the discussion of these standards in this book's Preface). However, many, both within and outside the scientific professions, believe these standards to be inadequate. Some advocate the complete elimination of animal research in psychology, medicine, and all the sciences. Whatever your personal stand on this issue, the question you should be asking is this: Do the findings from the research extend our

knowledge, reduce human suffering, and improve the quality of life sufficiently to justify the methods used to carry out the study?

Ask yourself that question about this study by Seligman and Maier, which found the beginnings of a theory to explain why some people become helpless, hopeless, and depressed. Seligman went on to develop a widely accepted model of the origins of and treatments for depression. Over the years his theory has been refined and detailed so that it applies more accurately to types of depression that occur under well-defined conditions, from the death of a loved one to massive natural and human-caused disasters.

Through Seligman's research, for example, we now understand that individuals are most likely to become depressed if they attribute their lack of control to causes that are (a) permanent rather than temporary, (b) related to factors within their own personality (instead of situational factors), and (c) pervasive across many areas of their life (see Abramson, Seligman, & Teasdale, 1978). Through this understanding, therapists and counselors have become better able to diagnose, intervene in, and treat serious depression.

Does this body of knowledge justify the methods used in this early research on learned helplessness? Each of you must decide that thorny issue for yourself.

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### Reading 32: CROWDING INTO THE BEHAVIORAL SINK

Calhoun, J. B. (1962). Population density and social pathology. *Scientific American, 206*(3), 139-148.

The effect of overcrowding on human behavior has interested psychologists for decades. You have probably noticed how your emotions and behaviors change when you are in a situation that you perceive as overly crowded. You may withdraw into yourself and try to become invisible, you may look for an escape, or you may find yourself becoming irritable and aggressive.

The title of the article in this chapter uses the phrase *population density* rather than *crowding*. Although these may seem very similar, psychologists draw a clear distinction between them. *Density* refers to the number of individuals in a given amount of space. If 20 people occupy a 12-by-12-foot room, the room would probably be seen as densely populated. *Crowding*, however, refers to your subjective *experience* that results from various degrees of density. If you are trying to concentrate on a difficult task in that small room with 20 people, you may feel extremely crowded. Conversely, if you are at a party with 20 friends in that same room, you might not feel crowded at all.

One way behavioral scientists study the effects of density and crowding is to observe places where crowding already exists, such as Manhattan, Mexico City, some housing projects, prisons, and so on. The problem with this method is that all these places contain many factors other than population density that may influence behavior. For example, if we find high crime rates in a crowded inner-city neighborhood, we cannot know for sure that crowding is the cause of the crime. Maybe the cause is the fact that people there are poor, or that there is a higher rate of drug abuse, or perhaps all these factors and others combine with crowded conditions to produce the high crime rates.

Another way to study crowding is to place human participants into high-density conditions for relatively short periods of time and study their reactions (it would not be ethical to leave them there for very long). Although this method offers more control and allows us to isolate crowding as a cause of behavior, it is not very realistic in terms of real-life crowded environments because they usually exist over extended periods of time. Nevertheless, both of these research methods have yielded some interesting findings about crowding that will be discussed later in this reading.

Because it would be ethically impossible (because of the stress and other potential damaging effects) to place humans in crowded conditions over long periods of time simply to do research on them, researchers have employed a third approach to address the effects of density: do research using animal subjects (see the Preface for a discussion of animal research). One of the earliest and most pivotal series of studies of this type was conducted by John B. Calhoun (1917–1995) in the early 1960s. Calhoun allowed groups of white rats to increase in population (on their own!) to twice the number that would be normal in a small space, and then he observed their “social” behavior for 16 months.

### **THEORETICAL PROPOSITIONS**

Calhoun especially wanted to explore the effects of high-density population on social behavior. It may seem strange to you to think of rats as social animals, but they interact in many social ways in their natural environment.

To appreciate what led Calhoun to the study discussed in this chapter, it is necessary to back up several years to an earlier project he conducted. Calhoun had confined a population of rats to a quarter acre of enclosed, protected, outdoor space. The rats were given plenty of food; they had ideal, protected nesting areas; predators were absent; and all disease was kept to a



minimum. In other words, this was a rat's paradise. The point of Calhoun's early study was simply to study the population growth rate of the rats in a setting free from the usual natural controls on overpopulation (e.g., predators, disease, etc.). After 27 months, the population consisted of only 150 adult rats. This was very surprising because with the low mortality rate of adult rats in this ideal setting, and considering the usual rate of reproduction, Calhoun should have seen about 5,000 adult rats accumulate in this period of time! Calhoun learned that the reason for this limited rat population was an extremely high infant-mortality rate. Apparently, reproductive and maternal behavior had been severely altered by the stress of social interaction among the 150 rats, and very few young rats survived to reach adulthood. Even though 150 rats in a quarter acre does not seem to be particularly dense, it was obviously crowded enough to produce extreme behavioral changes.

These findings prompted Calhoun to design a more controlled and observable situation inside the lab to study more closely what sorts of changes occur in rats when they are faced with high population density. In other words, he had observed *what* happened, and now he wanted to find out *why*.

**METHOD**

In a series of three studies, adult rats were placed in a 10-by-14-foot laboratory room that was divided into four sections or pens (see Figure 32-1). The rats

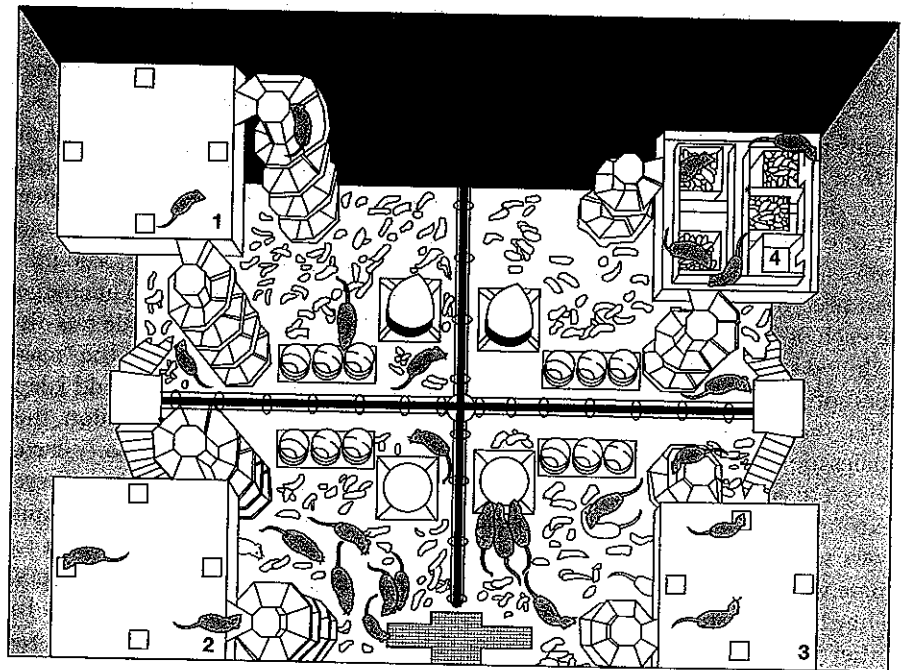


FIGURE 32-1 Diagram of laboratory room as arranged in Calhoun's study of crowding.

had ramps that allowed them to cross from pen 1 to pen 2, from pen 2 to pen 3, and from pen 3 to pen 4, but it was not possible for the rats to cross directly between pen 1 and pen 4. Therefore, 1 and 4 were "end-pens." If a rat wanted to go from 1 to 4, it would have to go through 2 and 3. The partitions dividing the pens were electrified, so the rats quickly learned that they could not climb over them.

These pens consisted of feeders and waterers and enclosures for nests. The rats were supplied with plenty of food, water, and materials for building nests. A viewing window in the ceiling of the room allowed the research team to observe and record the rats' behavior.

From his years of studying rats, Calhoun was aware that this particular breed is normally found in colonies of 12 adults. Therefore, the observation room was of a size to accommodate 12 rats per pen, or a total of 48. After the groups were placed in the observation room, they were allowed to multiply until their normal density was nearly doubled, to 80. Once the population level of 80 was reached, young rats that survived past weaning were removed so that the number of rats remained constant.

With this arrangement in place, all that was left was to observe these crowded animals for an extended time and record their behavior. These observations went on for 16 months.

## RESULTS

This level of population density was not extreme for the rats; in fact, it was quite moderate. If the rats wanted to spread out, each pen would hold 20 or so with room left over, but that did not happen. When the male rats reached maturity, they began to fight with each other for social status, as they do naturally. These fights took place in all the pens, but the outcome was not the same for all of them. If you think about the arrangement of the room, the two end-pens had only one way in and one way out. When a male rat won a battle for dominance in one of these pens, he could hold his position and his territory (the whole pen) simply by guarding the single entrance and attacking any other male that ventured over the ramp. As it turned out, only one male rat ended up in charge of each of the end-pens. However, he was not in there alone. The female rats distributed themselves more or less equally over all four pens. Therefore, the "masters" of pens 1 and 4 each had a harem of 8 to 12 females that they could keep all to themselves. And they didn't take any chances. To prevent infiltration, the males took to sleeping directly at the foot of the ramp and were always on guard.

On occasion, a few other male rats entered the end-pens, but they were extremely submissive. They spent most of their time asleep in the nesting burrows with the females and only came out to feed. They did not attempt to mate with the females. The females in these pens functioned well as mothers. They built comfortable nests and nurtured and protected their offspring. In other words, life for the rats in these end-pens was relatively normal, and reproductive behavior was successful. About half the infant rats in those pens survived to adulthood.

The rest of the 60 or so rats crowded into the middle two pens. Because these two pens each had central feeding and watering devices, they had many opportunities to come in contact with each other. The kinds of behaviors observed among the rats in pens 2 and 3 demonstrate a phenomenon that Calhoun termed the *behavioral sink*—“the outcome of any behavioral process that collects animals together in unusually great numbers. The unhealthy connotations of the term are not accidental: A behavioral sink does act to aggravate all forms of pathology that can be found within a group” (p. 144). Let’s examine some of the extreme and pathological behaviors he observed:

1. *Aggression.* In the wild, normal male rats will fight other male rats for dominant positions in the social hierarchy. These fights were observed among the more aggressive rats in this study as well. The difference was that in the end-pens, unlike in their natural environments, top-ranking males were required to fight frequently to maintain their positions, and often the fights involved several rats in a general brawl. Nevertheless, the strongest males were observed to be the most normal within the center pens. However, even those animals would sometimes exhibit “signs of pathology; going berserk; attacking females, juveniles, and less active males; and showing a particular predilection—which rats do not normally display—for biting other rats on the tail” (p. 146).
2. *Submissiveness.* Contrary to this extreme aggression, other groups of male rats ignored and avoided battles for dominance. One of these groups consisted of the most healthy-looking rats in the pens. They were fat, and their fur was full without the usual bare spots from fighting. However, these rats were complete social misfits. They moved through the pens as if asleep or in some sort of hypnotic trance, ignoring all others, and were, in turn, ignored by the rest. They were completely uninterested in sexual activity and made no advances, even toward females in heat.

Another group of rats engaged in extreme activity and were always on the prowl for receptive females. Calhoun termed them *probers*. Often, they were attacked by the more dominant males, but they were never interested in fighting for status. They were hypersexual, and many of them even became cannibalistic!

3. *Sexual deviance.* These probers also refused to participate in the natural rituals of mating. Normally, a male rat will pursue a female in heat until she escapes into her burrow. Then the male will wait patiently and even perform a courtship dance directly outside her *door*. Eventually, the female emerges from the burrow and the mating takes place. In Calhoun’s study, this ritual was adhered to by most of the sexually active males, except the probers, which completely refused to wait and followed the female right into her burrow. Sometimes the nests inside the burrow contained young that had failed to survive, and it was here that late in the study the probers turned cannibalistic.

Certain groups of male rats were termed *pansexuals* because they attempted to mate with any and all other rats indiscriminately. They sexually approached other males, juveniles, and females that were not in heat. This was a submissive group that was often attacked by the more dominant male rats but did not fight for dominance.

4. *Reproductive abnormalities.* Rats have a natural instinct for nest building. In this study, small strips of paper were provided in unlimited quantities as nest material. The females are normally extremely active in the process of building nests as the time for giving birth approaches. They gather the material and pile it up so that it forms a cushion. Then they arrange the nest so that it has a small indentation in the middle to hold the young. However, the females in the behavioral sink gradually lost their ability (or inclination) to build adequate nests. At first they failed to form the indentation in the middle. Then, as time passed, they collected fewer and fewer strips of paper so that eventually the infants were born directly on the sawdust that covered the pen's floor.

The mother rats also lost their maternal ability to transport their young from one place to another if they felt the presence of danger. They would move some of the litter and forget the rest, or simply drop them onto the floor as they were moving them. Usually these infants were abandoned and died where they were dropped. They were then eaten by the adults. The infant mortality rate in the middle pens was extremely high, ranging from 80% to 96%.

In addition to these maternal deficits, the female rats in the middle pens, when in heat, were chased by large groups of males until they were finally unable to escape. These females experienced high rates of complications in pregnancy and delivery, and they became extremely unhealthy.

## DISCUSSION

You might expect that a logical extension of these findings would be to apply them to humans in high-density environments. However, for reasons to be discussed next, Calhoun did not draw any such conclusions. In fact, he discussed his findings very little—probably assuming, and logically so, that his results spoke volumes for themselves. He did comment on one clear result: that the natural social and survival behaviors of the rats were severely altered by the stresses associated with living in a high-population-density environment. In addition, he noted that through additional research, with improved methods and refined interpretation of the findings, his studies and others like them may contribute to our understanding of similar issues facing human beings.

## SIGNIFICANCE OF FINDINGS

As with many of the studies in this book, one of the most important aspects of Calhoun's studies was that they sparked a great deal of related research on the effects on humans of high-density living. It would be impossible to examine

this large body of research in detail here, but perhaps a few examples should be mentioned. One environment where the equivalent of a behavioral sink might exist for humans is in extremely overcrowded prisons. A study funded by the National Institute of Justice examined prisons where inmates averaged only 50 square feet each (or an area about 7-by-7 feet), compared with less crowded prisons. It was found that significantly higher rates of mortality, homicide, suicide, illness, and disciplinary problems occurred in the crowded prisons (McCain, Cox, & Paulus, 1980). Again, however, remember that other factors besides crowding could be influencing these behaviors (for examples, see Reading 37 on *Zimbardo's prison study*).

Another interesting finding has been that crowding produces negative effects on problem-solving abilities. One study placed people in small, extremely crowded rooms (only 3 square feet per person) or in larger, less crowded rooms. The participants were asked to complete rather complex tasks, such as placing various shapes into various categories while listening to a story on which they were to be tested later. Those in the crowded conditions performed significantly worse than those who were not crowded (Evans, 1979).

What do you suppose happens to you physiologically in crowded circumstances? Research has determined that your blood pressure and heart rate increase. Along with those effects, you tend to feel that other people are more hostile and that time seems to pass more slowly as density increases (Evans, 1979).

### CRITICISMS

Calhoun's results with animals have been supported by later animal research (see Marsden, 1972). However, as has been mentioned before in this book, we must always be careful in applying animal research to humans. Just as substances that may be shown to cause illness in rats may not have the same effect on human physical health, environmental factors influencing rats' social behaviors may not be directly applicable to people. At best, animals can only represent certain aspects of humans. Sometimes animal research can be very useful and revealing and lead the way for more definitive research with people. At other times, it can be a dead end.

In 1975, researchers undertook a study in New York City that attempted to replicate with people some of Calhoun's findings (Freedman, Heshka, & Levy, 1975). The researchers collected data from areas of varying population density on death rates, fertility rates (birth rates), aggressive behavior (court records), psychopathology (admissions to mental hospitals), and so on. When all the data were analyzed, no significant relationships were found between population density and any form of social pathology.

Nevertheless, Calhoun's work in the early 1960s focused a great deal of attention on the psychological and behavioral effects of crowding. This line of research, as it relates to humans, continues today.

**RECENT APPLICATIONS**

John Calhoun died on September 7, 1995, and left behind a legacy of insightful and historically meaningful research. The kinds of social problems discussed he discussed in his 1962 article are increasingly relevant to the human condition. Consequently, when scientists undertake research to better understand and intervene in such problems as aggression, infertility, mental illness, or various forms of social conflict, it is not unusual for them to make reference to Calhoun's research on crowding and behavioral pathology.

An interesting study citing Calhoun's work examined changes in animal behavior that accompany domestication (Price, 1999). Price contended that species of animals that are domesticated—that is, kept as pets—have undergone genetic and developmental changes over many generations that have altered their behaviors in ways that allow them to share a common living environment with humans. Basically, what Price suggested is that as wild animals have become domesticated over centuries, they have had to adapt to human settings that are very different from their original habitats. This usually includes living in peaceful harmony (most of the time, at least) with others of their own species, other animal species, and humans, usually in relatively crowded conditions. This is accomplished, the author contends, through the evolution of increased response thresholds, meaning it takes a lot more provocation for a domesticated animal to become territorial and aggressive. In other words, dogs, cats, and humans are all able to live together in a relatively small space without running away or tearing each other to pieces, as would occur among undomesticated animals in the wild.

In a different direction, an article by Torrey and Yolken (1998) incorporated Calhoun's study in examining the association between growing up in crowded conditions and the development of schizophrenia and bipolar disorder (manic-depression). Many studies have found that people who are raised in high-density urban environments are at increased risk for these psychological disorders later in life. Numerous factors are present in crowded, urban settings that may account for such increased risks. However, the authors of this study hypothesized that it is the increased density of living conditions not in the neighborhood but rather in the individual homes (more people occupying less space) that may explain the higher rates of mental illness later in life. Why? This study contended that exposure to a larger number of infectious agents may account for this association.

A related study found a possible key difference in human reactions to population density compared to animals. In animal studies, pathology appears to increase in a linear way as a direct result of increased density: as one increases the other increases. However, a study by Regoeczi (2002) found for humans that the effect of household population density on increased social withdrawal and aggression actually *decreased* as the number of people in a single household increased. However, this effect was only observed until the number of people exceeded the total number of rooms; very much beyond that, the antisocial effects begin to appear with increasing density. In other

words when living conditions are such that, say, five people occupy a three-room apartment or seven people are squeezed into a four-room house, the tendency for people to withdraw or display more aggression increases. Two possible causes may be at work here. Either density is causing the pathology, or people who are more withdrawn or more aggressive end up in less crowded living situations, by choice or by ostracism, respectively.

### CONCLUSION

These and many other studies demonstrate how social scientists are continuing to explore and refine the effects of density and crowding. Although the causes of social pathology are many and complex, the impact of population density, first brought to our attention by Calhoun over 45 years ago, is only one—but a very crucial—piece of the puzzle.

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## Chapter

# IX

## PSYCHOTHERAPY

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Reading 33 CHOOSING YOUR PSYCHOTHERAPIST

Reading 34 RELAXING YOUR FEARS AWAY

Reading 35 PROJECTIONS OF WHO YOU ARE

Reading 36 PICTURE THIS!

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*Psychotherapy* simply means “therapy for psychological problems.” Therapy typically involves a close and caring relationship between a therapist and a client. The branch of psychology that focuses on researching, diagnosing, and treating psychological problems is *clinical psychology*. The history of psychotherapy consists primarily of a long series of various therapeutic techniques, each one considered to be the best by those who developed it. The research demonstrating the effectiveness of all those methods has been generally weak and not very scientific. However, some important and influential research breakthroughs have occurred.

One question people often raise about psychotherapy is “Which method is best?” The first study in this section addressed this question using an innovative (at that time) statistical analysis and demonstrated that, in general, various forms of therapy are equally effective. Another line of research discussed in the second study, however, suggested one exception to this. If you have a *phobia* (an intense and irrational fear of something), a form of behavior therapy called *systematic desensitization* has been shown to be a superior method of treatment. The study included here was conducted by Joseph Wolpe, the psychologist who is generally credited with developing systematic desensitization. Both the third and the fourth studies in this section involved the development of two related therapeutic and diagnostic tools: the Rorschach Inkblot Method and the Thematic Apperception Test (TAT). These tests are commonly used by therapists to try to diagnose mental problems or to help their clients discuss sensitive, traumatic, or concealed psychological problems.

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### Reading 33: CHOOSING YOUR PSYCHOTHERAPIST

Smith, M. L., & Glass, G. V. (1977). Meta-analysis of psychotherapy outcome studies. *American Psychologist*, 32, 752–760.

You do *not* have to be “crazy” to need psychotherapy. The vast majority of people treated by counselors and psychotherapists are not mentally ill but are simply