

# Behavioral Assessment

*Denice, a computer programmer employed by a software firm, was referred for counseling by her physician because of her “moodiness” and “emotional outbursts” at work. When the therapist asked Denice for an example of the problem, she described a recent incident with a coworker. After the incident, her boss called her into his office and asked her what was wrong. She said she was “frustrated and angry” and did not know why other people had to interfere with how she did her job. The therapist used this information in initiating a behavioral assessment.*

## Objectives

After completing this chapter, you should be able to do the following:

- Give examples of deficit and excess problem behaviors.
- Describe a target behavior in measurable terms.
- Identify antecedents of a target behavior and negative consequences of that behavior, given a sample case.
- Identify a target behavior, a possible controlling antecedent, and the reinforcing consequences, given a sample case.
- State one hypothesis about the conditions that exert control over a target behavior, given a sample case.

## Introduction to Behavioral Assessment

A major purpose of this book is to present the behavior change approach in terms of both **evidence-based interventions** and the overall treatment process. In the

preceding chapters, we presented the basic behavioral principles and illustrated their applications to a variety of settings and problems. The behavior change approach, however, is more than a collection of principles and intervention procedures, such as positive reinforcement, extinction, shaping, respondent conditioning, and modeling. In this chapter, we consider these principles within a **behavioral assessment** framework.

This chapter focuses on how to systematically assess the conditions that control the client's undesired behaviors. In conducting a behavioral assessment, the practitioner seeks to determine controlling relationships between environmental events (antecedents and consequences) and the client's target behaviors. The following chapter (Chapter 14) covers how to work with the client to set goals, develop and implement intervention plans, and evaluate treatment outcomes. Consideration of social validity, client satisfaction, culture, and generalization and maintenance of change is an essential part of this process. In this way, we present an approach that emphasizes not only evidence-based interventions but also the importance of using interventions that are applicable to each client's unique circumstances.

## Intake

Before the behavioral assessment is conducted, the practitioner and client determine whether the social service agency or practitioner can provide treatment or other services that will address the client's problem. The initial interactions between an individual and an agency or practitioner occur during **intake**, the beginning phase of the problem-solving process, in which a potential client becomes a client. During the intake process, the practitioner begins to develop a working relationship with the client. A collaborative, trusting relationship allows the client to perceive the practitioner as someone who can provide reinforcers, such as helping to relieve the client's concerns and improving the client's situation. The practitioner can become a conditioned positive reinforcer for the client by smiling, answering questions, giving information, asking questions, and providing other social reinforcers. In this way, the practitioner can increase the client's participation in behavioral assessment, goal setting, and problem-solving.

Most social service agencies require new clients to complete intake forms that request identifying data, including name, address, phone numbers, and date of birth; information on marital status, family members, and significant others; referral source; employment information; and insurance coverage. The intake form also asks the client to state the reason for seeking service from the agency. Typically, the client completes the intake form prior to meeting with the practitioner for the first time.

During intake, the client is informed about agency policies, procedures, and conditions related to service provision. The client is also told about the practitioner's professional qualifications. Many agencies give clients a form that provides basic information about services, including fees; confidentiality; the agency's compliance with the Federal Health Insurance Portability and Accountability Act of 1996 (HIPAA; U.S. Department for Human Services, n.d.), which went into effect

in 2003; and client and agency responsibilities. Both the practitioner and the client sign this form to indicate the agency's commitment to provide service and the client's consent to receive service. HIPAA requires agencies to inform clients of their adherence to federal guidelines regarding confidentiality of client treatment records and client rights.

The practitioner might have to intervene prior to carrying out the behavioral assessment to provide the client with necessary resources, referrals, or direct assistance. For example, the client might require immediate hospitalization, or action is required to provide food, housing, medical care, or physical protection. One of the practitioner's tasks during intake is to screen for the presence of a crisis condition affecting the client or significant others. Such a condition can take the form of child or elder abuse, suicide risk, domestic violence, recent trauma, community disaster, or severe financial deprivation (e.g., Kanel, 2015). If the practitioner determines that a crisis condition exists and is a behavioral emergency (e.g., James & Gilliland, 2013), the practitioner can initiate immediate intervention prior to conducting the behavioral assessment.

In summary, the practitioner's tasks during intake include developing a collaborative and reinforcing relationship with the client, obtaining basic identifying information from the client, informing the client about agency policies and procedures, obtaining the client's commitment and consent to service, affirming the practitioner's commitment to service, and screening for crises. If the practitioner determines that the client requires services or resources elsewhere, the practitioner refers the client to the appropriate agencies, organizations, or practitioners. If the practitioner and client agree to proceed with service provision, behavioral assessment can begin.

## Behavioral Assessment and Diagnostic Issues

Human services practitioners frequently encounter clients who lack effective problem-solving skills or complain about unmanageable "anxiety" or "depression." Based on these presenting complaints, the client might be assigned a diagnosis such as "generalized anxiety disorder" or "major depressive disorder, single episode, severe." Such diagnoses are based on specific criteria found in the fifth edition of the *Diagnostic and Statistical Manual of Mental Disorders (DSM-5)* (American Psychiatric Association, 2013). Since 1952 the *Diagnostic and Statistical Manual of Mental Disorders (DSM)* has been the standard reference text for diagnosing mental disorders. The practitioner can use the Structured Clinical Interview for the *DSM-5* (SCID-5-CV; First, Williams, Karg, & Spitzer, 2016a) to determine which *DSM-5* criteria a particular client meets. The *User's Guide* for the SCID-5-CV (First, Williams, Karg, & Spitzer, 2016b) provides instructions on how to interpret and apply the specific *DSM-5* criteria for each of the disorders included in the SCID-5-CV.

Most practitioners and insurance companies rely on the diagnostic categories of the *DSM-5* to identify client problems. Insurance companies reimburse practitioners based on *DSM-5* diagnoses. Medicare (Centers for Medicare and Medicaid

Services, CMS) reimburses behavioral health practitioners (including social workers, psychologists, and psychiatrists) according to The International Classification of Diseases, 10th edition (ICD-10; World Health Organization, 1992), which uses codes corresponding with *DSM-5* diagnoses. Thus, in order for practitioners to be reimbursed for their services, it is necessary for them to be familiar with the *DSM-5*. ICD has been used for many decades to provide measures of national and international comparability in public health. Updates for *DSM-5* criteria and their associated ICD-10 codes identified by the American Psychiatric Association (APA) can be found at [www.DSM5.org](http://www.DSM5.org).

In the *DSM-5*, psychosocial and environmental stressors are listed with mental disorders and physical health issues using an expanded set of “Z” codes (“V” codes in ICD-9), which are considered non-disordered conditions that sometimes are the focus of treatment and can involve a diverse range of psychosocial and environmental issues (e.g., child abuse, partner distress, homelessness, occupational difficulties, problems with housing and finances, acculturation, discrimination, legal issues, and other personal circumstances). The expanded use of Z codes has been viewed as a way to maintain social work’s psychosocial perspective in the diagnostic process (Walsh, 2016). Diagnoses with Z codes may not be reimbursed by insurance companies and Medicare.

The *DSM-5* has not been without its critics (e.g., Demazeux & Singy, 2013; Frances, 2013a, 2013b; Kirk, Cohen, & Gomory, 2015; Wakefield, 2013). The reliability and the validity of the *DSM-5* are deficient based on empirical research (Kirk, Gomory, & Cohen, 2013; Mallett, 2014). Gorman and Nathan (2015) discussed issues involving the absence of viable neuroscience biomarkers for specific diagnoses and conflicts of interest in pharmaceutical research. Other critics of the *DSM-5* argue that it relies too much on the medical model of mental disorders, which presumes that a mental disorder is manifested as a disease or illness within the person, and does not give adequate consideration to environmental factors (e.g., Frances, 2013a; Lacasse, 2014b; Wong, 2014). Psychiatric labels can have consequences that are harmful to clients, such as when a label communicates to the client and others that the client’s situation is hopeless, or when a label leads to social stigmatization. A special issue of *Research on Social Work Practice* critically examines a number of issues involving the *DSM-5* (Lacasse, 2014a, 2014b).

Some social workers have maintained that not only is it possible to help people without using mental illness labels, it is perhaps preferable (e.g., Kutchins & Kirk, 1995; Wakefield, 2013). For example, clients with the same diagnosis can exhibit different maladaptive behaviors. Diagnostic labels can establish or reinforce a client’s belief or fear that they have permanent pathological conditions that cannot be altered. Although diagnostic labels may communicate standardized information, especially to professionals from other disciplines (Williams & Spitzer, 1995), Kutchins and Kirk (1995) argued that what is communicated is not necessarily in the client’s best interest, truthful, or reliable (see also Kirk et al., 2015).

Karls & Wandrei (1994) proposed an alternative classification system for problems in social functioning, but this system was not adopted by mental health

professionals. More recent alternatives have been offered (Frances, 2014a; Lacasse, 2014a, 2014b). Garland and Howard (2014) espouse a transdiagnostic perspective that addresses common processes (e.g., memory bias, thought suppression) underlying psychological suffering and distress. Others have advocated behavior change approaches that focus on the function of problem behaviors (Cipani, 2014) or on functional assessment and analysis (Wong, 2014) rather than on diagnoses.

Practitioners recognize that diagnosis is not the same as behavioral assessment. Although it might be necessary for insurance reimbursement to give a client a *DSM-5* diagnosis, it is important that the practitioner conducts a behavioral assessment to arrive at a justifiable basis for the intervention plan. Instead of resulting in diagnostic labels, behavioral assessment is part of a problem-solving process that leads to specification of the client's target behaviors and their controlling antecedents and consequences, and to formulation of the client's behavior change goals. Behaviorally oriented clinical assessments can be used by practitioners who want to apply effective psychosocial or rehabilitative interventions, including treatment for severe behavior disorders (e.g., Wong, 2009, 2014).

The behavior change goals delineate the desired behaviors and their supporting antecedents and consequences. The intervention plan is based on these goals and involves selection of evidence-based intervention techniques directed toward goal achievement and specification of procedures to implement the plan. The focus on target behaviors and their controlling stimuli in the environment provides the practitioner with concrete, measurable data for analyzing the client's situation.

## Cultural Diversity and Cultural Competency

Cultural diversity and cultural competency have become prominent issues for mental health professionals (e.g., Shea, 2016; S. Sue, Zane, Nagayama Hall, & Berger, 2009). Increased diversity in the United States and elsewhere has required changes in the mental health system to promote cultural competency in practitioners to meet the varied needs of multicultural populations (Paniagua, 2014; S. Sue et al., 2009). These changes have been prompted by findings that members of certain cultural, ethnic or minority groups, such as Asian Americans, have underused mental health services (Chu & Sue, 2011). Mental health services have not been accessible, available, or effectively provided to African American, American Indian and Alaska Native, Asian American, Hispanic and LGBTQ populations (Hays, 2008; S. Sue et al., 2009; Walker & Bigelow, 2015). Environmental supports and stressors for these populations may be culturally determined. For example, environmental stressors for members of minority groups can include discrimination in housing, lack of employment opportunity structure, incidents of discrimination or oppression, and living in a community where the mainstream culture is different from theirs (e.g., Himle et al., 2014).

Cultural competence has been conceptualized within a framework that focuses on three practitioner characteristics: (1) attitudes—awareness of one's personal

biases and cultural assumptions, (2) knowledge—nonjudgmental understanding of the client’s cultural perspective and expectations for mental health services, and (3) skills—intervention techniques that are culturally sensitive and responsive to diverse clients (e.g., D. Sue, Arredondo, & McDavis, 1992; S. Sue et al, 2009). In addition to race and ethnicity, culturally competent practitioners consider the influences of age and generation, physical and cognitive ability/disability, religion and spirituality, social class, gender, and sexual orientation (e.g., Lonner, 2014; Paniagua, 2014). The impact of cultural differences on the practice of behavior therapy (BT) and cognitive behavior therapy (CBT) have been explored in special issues of the *Behavior Therapist* (Gunthert, 2013) and *Cognitive and Behavioral Practice* (Fuchs, Lee, Roemer, & Orsillo, 2013). Hays (2009) proposed a number of recommendations that would facilitate the culturally competent practice of CBT, including the following: identify hostile environmental conditions that need to be changed; validate clients’ self-reported instances of discrimination rather than questioning them; emphasize collaboration over confrontation, especially when challenging the client’s thoughts; and avoid questioning a client’s core cultural beliefs, which increases the risk of the client disengaging from the therapeutic process.

From a behavior change perspective, *culture* has been defined as “the extent to which a group of individuals engage in overt and verbal behavior reflecting shared behavioral learning histories, serving to differentiate the group from other groups, and predicting how individuals within the group act in specific setting conditions” (Sugai, O’Keefe, & Fallon, 2012, p. 200). Practitioners attempt to identify diversity issues that are important for behavioral assessment, including client ethnicity, race, socioeconomic status, sexual orientation, gender, and disability. Although behavior change approaches have sometimes been viewed as value free and culture free (e.g., Hayes & Toarmino, 1995), in reality they are subject to the same cultural biases evident in society (e.g., Paniagua, 2014; S. Sue et al., 2009). Behavioral assessment requires the practitioner to consider cultural factors in assessing an individual’s problem and its controlling conditions (e.g., Pantalone, Iwamasa, & Martell, 2009; Sugai et al., 2012).

Knowledge of cultural practices is not a substitute, however, for behavioral assessment of an individual’s problem behavior and its environmental determinants. Cultural or religious practices may dictate specific behavioral rules, but practitioners cannot assume that all members of a given group will follow a specific cultural or religious rule, or that no members of a group will follow a particular rule. For example, in one family, a basket of bread on the dinner table could serve as an  $S^D$  indicating that the responses of sitting down and eating will be reinforced (by the food). In another family, a basket of bread on the table could serve as an  $S^D$  for the response of saying a prayer before eating the bread. Specific knowledge about each client, including the degree of acculturation, can be useful to the practitioner in conducting the behavioral assessment.

Practitioners should be familiar with the cultural norms of their clients and the functions of those norms as antecedents, reinforcers, and punishers. Knowledge of common cultural practices, however, can also lead to stereotyping of individual members of a particular group, or to other forms of bias on the

part of the practitioner. Used appropriately, such knowledge can provide the practitioner with important information that might not be available directly from the client. Consideration of these issues can result in relevant assessment data for an individual client or family, especially if the practitioner is from a different cultural background. For example, some cultures value respect and submissiveness over assertiveness. A Chinese American woman might be reinforced for assertive behavior by her peers, but the same behavior could be viewed negatively by her parents (Hwang, Wood, Lin, & Cheung, 2006). Similarly, making eye contact might be viewed as overassertive, rather than assertive, in some cultures (e.g., Paniagua, 2014; Tanaka-Matsumi, Higginbotham, & Chang, 2002). In some ethnic groups, the family is more important than the individual. This can create difficulties for families in which the generations acculturate to mainstream U.S. culture at different speeds. In one study, Szapocznik and Kurtines (1993) found that Hispanic parents continued to be reinforced for behavior consistent with Hispanic culture, whereas their adolescent children were reinforced by their Anglo peers for behaviors consistent with American culture.

## Elements of Behavioral Assessment

Behavioral assessment involves consideration of four elements: target response, antecedents, consequences, and response strength. **RAC-S** is an acronym for *Response, Antecedents, Consequences, and response Strength*. Response is identified as the first term in RAC-S to emphasize the focus on the target response in relation to controlling antecedents and consequences. The acronym ABC has been used similarly to designate *antecedents, behaviors, and consequences*, but we prefer RAC-S because of its focus on the response and its measures, and because it is distinct from the **A-B-C** model of analyzing cognitions and matching thoughts to feelings and events, where **A** is the activating event (what happened), **B** is the automatic belief or thought (self-talk), and **C** is the emotional and behavioral consequence (feelings and behavior; e.g., Ellis & Grieger, 1977).

### Target Responses

The first step in the behavioral assessment procedure is to identify target responses. Clients may have difficulty in identifying specific target responses during the initial interview. If this occurs, the practitioner can ask the client to identify important *problem areas*, which are broad concerns or role difficulties that can lead to specification of problem behaviors.

Various problem checklists and questionnaires are available, in conjunction with interviews and observations, to help identify an individual's problem areas. Figure 13.1 presents the Sundel Problem Checklist, a form designed to help individuals identify their major problem areas. The items on the Sundel Problem

Below are some things that may be a problem for you. If you have concerns in any of these areas, please check the box next to it.

Rank order the three problems that most concern you by writing 1, 2, or 3 beside the box next to each of the three problems you select.

- |   |  |
|---|--|
| <input type="checkbox"/> Food             | <input type="checkbox"/> Alcohol                     |
| <input type="checkbox"/> Clothing         | <input type="checkbox"/> Trouble sleeping            |
| <input type="checkbox"/> Housing          | <input type="checkbox"/> Nervousness, anxiety        |
| <input type="checkbox"/> Money            | <input type="checkbox"/> Physical violence           |
| <input type="checkbox"/> Family           | <input type="checkbox"/> Get confused about things   |
| <input type="checkbox"/> Job              | <input type="checkbox"/> Difficulty showing emotions |
| <input type="checkbox"/> School           | <input type="checkbox"/> Can't make decisions        |
| <input type="checkbox"/> Physical health  | <input type="checkbox"/> Eating                      |
| <input type="checkbox"/> Mental health    | <input type="checkbox"/> Smoking                     |
| <input type="checkbox"/> Feeling lonely   | <input type="checkbox"/> Headaches                   |
| <input type="checkbox"/> Sex              | <input type="checkbox"/> Feeling down or blue        |
| <input type="checkbox"/> Police or courts | <input type="checkbox"/> Fears                       |
| <input type="checkbox"/> Legal            | <input type="checkbox"/> Other (specify)             |
| <input type="checkbox"/> Drugs            |  |

**Figure 13.1** Sundel Problem Checklist

Checklist represent areas of functioning or lack of resources that might motivate a person to seek help, such as food, housing, job, and mental health concerns. This checklist can help the practitioner identify the individual's complaints in terms of general categories. By ranking the problem areas, the client indicates the ones that are of most concern. The practitioner should refer to a physician any client with issues that are or might be related to physical health concerns to address or rule out medical problems.

A problem area is often manifested in the social role or position in which the individual experiences difficulty—for example, as a mother, teacher, employee, or husband. Thus, a problem area for a mother might include disciplining her children; for a teacher it might include classroom management; for an employee, social skills; and for a husband, marital relations. Figure 13.2 presents the Sundel Problem Role Inventory, which the practitioner can use to help the client specify problem roles. The inventory specifies 20 roles from which clients can select those that are problematic for them.

In which of the following roles do you experience difficulty? Check (✓) the role(s) that you have trouble performing.

Circle the role that *most* concerns you.

- |   |  |
|---|--|
| <input type="checkbox"/> Mother                   | <input type="checkbox"/> Classmate           |
| <input type="checkbox"/> Father                   | <input type="checkbox"/> Student             |
| <input type="checkbox"/> Sister                   | <input type="checkbox"/> Teacher             |
| <input type="checkbox"/> Brother                  | <input type="checkbox"/> Friend—same sex     |
| <input type="checkbox"/> Son                      | <input type="checkbox"/> Friend—opposite sex |
| <input type="checkbox"/> Daughter                 | <input type="checkbox"/> Employee            |
| <input type="checkbox"/> Spouse/partner           | <input type="checkbox"/> Coworker            |
| <input type="checkbox"/> Step-relative            | <input type="checkbox"/> Subordinate         |
| <input type="checkbox"/> Other relative (specify) | <input type="checkbox"/> Neighbor            |
| <input type="checkbox"/> Employer or supervisor   | <input type="checkbox"/> Myself              |
|   | <input type="checkbox"/> Other (specify)     |

Figure 13.2 Sundel Problem Role Inventory

### Establishing Problem Priorities

If the client identifies more than one problem, the practitioner can help the client prioritize the problems to be addressed by considering the following questions:

1. Which problem is of immediate concern to the client, significant others (e.g., family members, friends, teachers), or both? For example, Ralph wants to stop drinking; Sophie seeks help in managing her diabetic son's diet. Health-related problems that require physician referral are given highest priority.
2. Which problem has the most severe aversive or negative consequences for the client, significant others, or society if not handled immediately? For example, Herman will be fired from his job unless he can start working cooperatively with coworkers; Sally will be expelled from school unless she attends more frequently.
3. Which problem requires handling before other problems can be treated? For example, Mr. and Mrs. Lee decide that they must resolve their child-rearing disagreements before they can develop a program to modify their children's behavior problems.
4. Which problem can be corrected most quickly, considering resources and obstacles? For example, Bob and Jean decide to work on resolving their arguments over the household budget before dealing with their more complicated sexual problems.

These questions are intended as guidelines for the practitioner to use in decision-making with clients. Problem selection might involve consideration of one or more of these questions, depending on the client's situation. For example, Michael decided to focus on his poor job performance before addressing his difficulties relating to his partner because he was afraid he might lose his job and be unable to support his family.

The client's target responses are stated in terms that clearly specify the actions. Responses are described in measurable terms, without labels or judgments such as "inadequate personality" or "passive-aggressive." Physiological measures of heart rate, temperature, muscle tension, and blood pressure can be obtained with appropriate instruments. Other unobservable responses, such as an individual's thoughts, feelings, and attitudes, although experienced subjectively, can be described in self-reports along with corresponding observations by the practitioner of the person's actions or verbal responses.

A problematic target response can be classified as either a **behavior excess** or **behavior deficit**. The term *behavior excess* refers to a high frequency of undesired operant or respondent behaviors. Examples of behavior excesses include overeating, alcohol abuse, telling lies, and anxiety responses such as sweaty palms and rapid heartbeat. Behavior deficit refers to an absence or low frequency of appropriate operant or respondent behaviors. Examples of behavior deficits include remaining silent instead of speaking up for one's rights, attending work sporadically, turning in few class assignments, and lack of sexual arousal to a spouse.

Behaviors can also be considered problematic when they are under faulty stimulus control. That is, the individual makes a response that is appropriate in some situations but inappropriate in others. For example, yelling "Fire!" and breaking the fire alarm box are appropriate behaviors when there is a fire ( $S^D$ ), but such responses are inappropriate and potentially dangerous when there is no fire. Masturbation may be appropriate in the privacy of one's room, but it is inappropriate in public places. Problematic target behaviors are also described as *maladaptive*, *deviant*, *inappropriate*, and *undesired*.

### Controlling Conditions (Antecedents and Consequences)

In behavioral assessment, the practitioner attempts to identify the antecedents and consequences maintaining the target behavior. Antecedents are the stimuli that precede, signal, or elicit a specific behavior. For example, an antecedent condition for Roger's punching Charlotte with his fist was Charlotte's calling Roger "stupid." A second antecedent was her refusal to have sexual intercourse with him, and a third antecedent was Roger's self-statement, "I'll have to teach her to show me some respect." It is sometimes difficult to identify the controlling antecedents that elicit or set the occasion for target behaviors. The practitioner attempts to describe in specific terms when and where the behavior is performed, who is present, and what is said or done by whom prior to performance of the behavior. As a rule, the practitioner

focuses on current stimuli that appear to be closely associated with the target behavior. In some instances, however, the practitioner might explore earlier antecedent events to determine their influence on the client's current behavior. For example, Shelley experiences intense anxiety and avoids eye contact in the presence of her stepfather, who sexually abused her when she was a child.

Reinforcing consequences are events that follow a target response and strengthen it. For example, when Maria breaks into line ahead of the other children, she is positively reinforced by receiving ice cream before them, and she is more likely to perform this behavior again in similar circumstances. Reinforcing consequences can also occur when a negative reinforcer is removed (see Chapter 10, Negative Reinforcement). For example, when Pat criticized Dick for going out with his friends, he left the house. Dick's leaving was negatively reinforced by his escaping from Pat's criticism and is more likely to occur again in similar situations.

Aversive or negative consequences are events following a target behavior that are undesired or unpleasant to the individual or significant others. Aversive consequences can decrease the likelihood that the response will be performed again under similar conditions. Aversive consequences that decrease response strength are punishers (see Chapter 9, Punishment). For example, when Frances was caught looking at another student's exam paper, the professor tore up Frances's paper and gave her a zero on the test. Frances stopped looking at other students' exam papers in that class.

Sometimes a single behavior has both reinforcing and aversive consequences. In the previous example, Maria was positively reinforced for breaking into the line for ice cream ahead of the other children she was playing with. Breaking into the line also had aversive consequences for Maria, however, when her mother scolded her and took her home right after she got her ice cream cone.

Immediate or short-term reinforcing consequences often have a stronger effect in maintaining a behavior than long-term negative consequences exert in suppressing or preventing that behavior. Sometimes it seems puzzling that certain behaviors continue to occur despite severe negative consequences that eventually follow them. Some examples follow:

- A teenager steals a bottle of liquor at the grocery store, even though he was caught last month for a similar offense.
- The immediate benefits of passing a test by cheating may offset the possible negative consequences of being caught and disciplined.
- Staying in bed a few minutes longer may result in an individual frequently arriving late to work and being reprimanded by the supervisor.
- The immediate pleasure of an extramarital affair may be offset later by the consequences of being discovered and the conflicts that discovery sets off among family members.
- The immediate and enormous financial gain that can come from using illegal or unethical business practices can also result in harsh legal consequences, including fines and imprisonment.

Individuals continue to engage in short-term pleasurable activities even though they may risk significant health impairment because of these activities in the long run. For example, considerable research evidence demonstrates the relationships between smoking and lung diseases, between obesity and cardiovascular impairment, and between alcohol drinking and liver disease. Similar relationships have been shown between certain kinds of sexual behaviors or intravenous drug use and the risk of becoming infected with the human immunodeficiency virus (HIV), which can lead to AIDS. Short-term reinforcers exert greater control over these health-risking behaviors than do the severe negative consequences that are further removed in time. The behavior change approach has been used in the development of prevention programs aimed at reducing high-risk behaviors such as those that contribute to the transmission of HIV (e.g., Carey, Senn, Vanable, Coury-Doniger, & Urban, 2010; Kalichman, Picciano, & Roffman, 2008).

### Response Strength

Response strength is considered for both operant and respondent behaviors. The strength of an operant response is determined through the measurement of its rate (frequency per time unit), duration, intensity, or latency. Rate is the most commonly used measure of response strength. The number of times the target behavior is performed within a given period is counted and recorded. Recording each occurrence of the target behavior provides a continuous record. Sometimes more than one type of measure is used. For example, "Tracy cried three times this week (rate) for 10 minutes or longer (duration) each time."

The strength of a respondent behavior is measured by (a) the magnitude of the conditioned response and (b) the latency or interval between presentation of the conditioned stimulus (CS) and elicitation of the conditioned response (CR). The magnitude of a classically conditioned response (CR) is measured by the contraction of a muscle or blood vessel or the secretion of a gland. For example, heart rate is measured by pulse, muscle contraction is measured by the amount of electrical activity of the muscle, and salivation is measured by the amount of saliva. Latency is measured by the amount of time that passes between presentation of the CS and elicitation of the CR. The shorter the latency, the stronger the response. The greater the magnitude, the stronger the response.

### Recording Response Rate

*Continuous recording* of response rate is particularly appropriate for self-management programs. The individual is instructed to record target behaviors, such as the number of pages read per day, number of candy bars eaten per week, or number of telephone calls made per week to clients. Other examples of target behaviors appropriate for continuous recording include the number of math problems a college student solves per day, the number of minutes a tennis player

practices a serve per week, and the number of times a child says “no” per hour. Continuous recording is not always feasible or efficient for keeping track of high-frequency behaviors (such as facial tics or head banging) or monitoring several behaviors (e.g., biting fingernails and spending time on Facebook) of one or more individuals.

Interval recording and time sampling are two alternatives to continuous recording of response rate. *Interval recording* involves selecting a block of time (e.g., 30 minutes) during which the target behavior will be observed and then further dividing this block into brief intervals (e.g., 15 seconds). If the target behavior occurs during the brief interval, the observer records a check mark for that interval on a form created for that purpose. If the target behavior is not performed during the interval, the observer records zero for that interval. The behavior must be performed at least once during the interval to be recorded. Regardless of the number of times the behavior occurs during the interval, the observer records one check mark for that interval. At the end of the observation period, the observer counts the number of intervals in which the target behavior occurred.

Interval recording is appropriate for behaviors that occur with high frequency, such as facial tics, head banging and other self-injurious behaviors, and inappropriate classroom talking. The interval record can provide an accurate indicator of the rates of these behaviors without an observer having to count each occurrence. Interval recording is most reliable when an external event, such as a recorded or digital tone, is used to signal the end of each interval. For example, the observer might wear a headset through which such a tone or other signal is transmitted. Figure 13.3 shows a sample interval record of a student’s out-of-seat behavior during his social studies class.

*Time sampling* involves recording whether or not the target behavior is performed at certain times of the day. For example, a rehabilitation counselor can record the work behavior of several adults with developmental disabilities. The counselor observes the clients at specified intervals—for example, at the end of every 30 minutes during a 6-hour workday—and records the presence or absence of the target behaviors at those times (see Figure 13.4). Like interval recording, time sampling can be used to monitor high-frequency behaviors. It is also useful for monitoring several behaviors of one or more individuals (such as working steadily and talking to coworkers). Time sampling requires less of the observer’s time and involvement than does either continuous or interval recording. (For further discussion of recording procedures and related issues, see Bailey & Burch, 2002; Bloom, Fischer, & Orme, 2009).

**Interobserver Agreement.** Target behaviors must be clearly specified so that different observers can identify the behaviors when they are performed. In Figure 13.4, for example, the responses that constitute “working steadily” are noted on the bottom of the recording form as an aid to the observers who record the performance of those behaviors. Two or more observers record the data independently—that is, without consulting or signaling each other. The practitioner calculates the extent of

Date: 11/15

Time: 10:15–10:30 (Social Studies)

Subject: Sam P.

Target behavior: out of seat

✓ = out of seat

0 = in seat

Intervals (15 seconds)

1	✓	16	✓	31	✓	46	✓	61	✓	76	0
2	✓	17	✓	32	✓	47	0	62	✓	77	0
3	✓	18	✓	33	✓	48	0	63	0	78	0
4	✓	19	✓	34	0	49	0	64	0	79	0
5	0	20	✓	35	0	50	0	65	0	80	0
6	✓	21	✓	36	0	51	0	66	0	81	0
7	✓	22	0	37	0	52	0	67	0	82	0
8	✓	23	0	38	0	53	0	68	0	83	0
9	0	24	0	39	✓	54	0	69	0	84	0
10	✓	25	0	40	✓	55	0	70	0	85	0
11	0	26	0	41	✓	56	0	71	✓	86	✓
12	✓	27	0	42	✓	57	0	72	✓	87	✓
13	0	28	✓	43	✓	58	0	73	✓	88	✓
14	0	29	✓	✓	✓	59	✓	74	✓	89	✓
15	0	30	✓	45	✓	60	✓	75	✓	90	0

Total: 42/90 = 47% out-of-seat intervals

Observer's initials: SS

**Figure 13.3** Interval Record of Sam's Out-of-Seat Behavior

agreement between observers to ensure that the behaviors have been adequately specified and recorded.

*Interobserver agreement*, or reliability, can be determined through a comparison of the numbers of observations recorded the same way by different raters. For example, one observer recorded 38 intervals as +, indicating that the subject was working steadily, and another observer recorded 40 intervals as +. These observers agreed on 38 intervals and disagreed on 2.

Recorder: SS

Date: T1 = 1/12, T2 = 1/19

Code: W = working steadily<sup>a</sup> O = not working, but not disruptive

X = not working, disruptive

S: LT		S: NB		S: CS		S: AC	
T1	T2	T1	T2	T1	T2	T1	T2
W	W	W	W	W	W	O	O
W	W	W	O	W	W	O	W
W	W	W	O	W	W	O	O
W	W	O	W	W	W	O	O
W	W	W	W	W	W	O	O
W	W	O	W	W	W	W	O
W	W	O	O	W	W	W	W
W	W	W	O	W	W	W	W
W	W	W	W	W	W	W	W
W	W	W	W	W	W	O	W
W	W	LUNCH	LUNCH	W	W	O	O
LUNCH	LUNCH	LUNCH	LUNCH	W	W	O	O
LUNCH	LUNCH	W	W	LUNCH	LUNCH	O	O
W	W	W	O	LUNCH	LUNCH	LUNCH	LUNCH
W	W	O	O	W	W	LUNCH	LUNCH
W	W	W	O	W	W	O	O
W	W	W	W	W	W	O	O
W	W	O	O	O	W	O	O
W	W	W	W	O	O	O	W
W	W	W	W	W	O	W	W
W	W	O	W	X	W	W	O
W	W	O	W	W	O	W	W
W	W	W	W	O	W	O	W
W	W	O	O	O	O	O	W

<sup>a</sup>Working steadily: performing job task, raising hand for more work, asking for more work from supervisor, and asking supervisor for help with work.

**Figure 13.4** Time Sampling Record of the Work Behavior of Four Employees in a Sheltered Workshop (15 minutes)

To compute interobserver agreement (IA), one divides the number of identical observations (IO) by the number of identical observations plus the number of different observations (DO):

$$IA = \frac{IO}{IO + DO}$$

Interobserver agreement is expressed in terms of a percentage. In this example, it is calculated as follows:

$$IA = \frac{IO}{IO + DO} = \frac{38}{38 + 2} = 95\%$$

According to convention, interobserver reliability should be 80% to 100% (Kazdin, 1994). Reliability lower than 80% indicates a substantial number of errors in recording. These errors could result from inadequate specification of the target response, deficient training of observers, or inattentiveness of observers.

Where applicable, observers record the duration of the target behavior in addition to its rate. For example, observers recorded that “Sally giggled in class three times today for 3 minutes or longer per occurrence” and that “Fred talked to Melanie on the phone five times last week, with each call lasting 30 minutes or longer.”

The intensity or severity of behaviors such as hitting, teasing, crying, and anxiety is often difficult to measure. The problematic feature of these behaviors involves the aversive consequences or effects that they have for the client or significant others. Individuals differ in their tolerance for the behaviors of others and in their own reactions to physical and social stimulation. Examination of the aversive or negative consequences of the target behavior for the client and significant others provides an indicator for judging the intensity of the behavior. For example, the degree of “noisiness” of Dick’s playing his drums in the house is determined by a neighbor who knocks on the door, and the intensity of Sam’s “tapping” Gloria on the arm is indicated by her bruises or complaints to a police officer.

The magnitude of respondent behaviors reported as anxiety can be measured by increases in blood pressure and heart rate. An individual’s subjective rating of the magnitude of anxiety can also be measured on a self-report scale of subjective units of discomfort (SUDS; e.g., on a scale of 1 to 100) such as the one used in systematic desensitization (see Chapter 15, Clinical Application of Behavioral and Cognitive Intervention Techniques).

Latency, an indication of the strength of a classically conditioned response, is measured by the interval between presentation of the conditioned stimulus (CS) or unconditioned stimulus (US) and the elicitation of the conditioned response (CR) or unconditioned response (UR), respectively. A short latency indicates a strong response; a long latency indicates a weak response. For example, when Mary sees Jack’s photograph (CS), tears immediately come to her eyes (CR; short latency and strong response).

Latency is also a measure of stimulus control related to performance of an operant response in the presence of an S<sup>D</sup>. Latency is measured by the interval of

time that transpires between presentation of the  $S^D$  and performance of the response. A short latency indicates strong control of the response by the stimulus; a long latency indicates weak control. For example, Pedro's father called him to the dinner table and Pedro came immediately (short latency and strong control of the response). The nurse told the patient to put on a robe and he did so 20 minutes later (long latency and weak control of the response).

## Collecting RAC-S Data

Behavioral assessment requires accurate and systematic collection of data on target responses and their controlling antecedents and consequences. Response data are collected before intervention, during intervention, and at follow-up periods so that the practitioner can monitor and evaluate the effects of the interventions. The practitioner analyzes these data to determine whether target behaviors have increased or decreased in strength and whether problematic antecedents and consequences have been altered (e.g., Hanley, 2012; Hanley, Iwata, & McCord, 2003).

To delineate the client's problem, the practitioner obtains examples of the problem through direct observation and by asking the client or significant others to describe recent examples of the problem, if both methods are feasible. The practitioner asks the client or significant others to give an explicit account of each example. Using the examples observed or provided, the practitioner attempts to identify the RAC-S components, including (a) target responses, (b) controlling antecedents, (c) negative consequences, (d) controlling consequences, and (e) measures of response strength, such as rate (frequency per time unit), duration, intensity, magnitude, or latency.

Practitioners can confirm their observations and analyses by interviewing individuals associated with the client's problem, such as parents, other relatives, neighbors, teachers, and peers. The practitioner obtains descriptions of the client's problem as perceived by these individuals, including information on their possible roles in supporting or discouraging the client's problem behaviors. The practitioner instructs these individuals to observe the client and record occurrences of the target behaviors and the conditions (antecedents and consequences) under which they are performed. This monitoring procedure might also reveal the monitor's role in establishing or maintaining the target behavior—that is, how the monitor provides problematic antecedents or consequences related to the client's performance of the target behavior. For example, when Rebecca monitored her son's refusal to perform chores, Rebecca became aware that she was making excuses for him and was doing the chores herself.

The practitioner obtains measures of response strength as *baseline data* prior to working with the client to formulate behavior change goals and develop the intervention plan. The practitioner instructs the client or other designated individual (e.g., parent, teacher) to record the baseline data at home, work, school, or elsewhere in the client's environment using prepared forms such as the Assessment

1. State the problem and give an example of its occurrence.
2. Specify the target response(s) to be observed in precise terms. Be sure that a stranger reading this description would know exactly what the client is *saying* or *doing*.

Behavior excesses:

Behavior deficits:

3. Describe the antecedents related to the target response(s).
4. Describe in specific terms the negative consequences of this problem.
5. State the possible reinforcers for the target response(s).

<sup>a</sup>Specify measure of response strength to be used (e.g., rate, intensity, duration, magnitude, latency).

**Figure 13.5** Assessment Form

Form illustrated in Figure 13.5 and the Daily Behavior Recording Chart shown in Figure 13.6. For examples of completed forms see pages 248 and 249. The client can also carry a 3-by-5-inch index card or use a smartphone to record target behaviors. Wrist counters and other devices are available for this purpose. The client then reports the data collected for the therapist to review at the next session.

The RAC-S diagram in Figure 13.7 provides a behavior analytic scheme for examining (a) the relationship between the target response and its possible

Description of Target Response:

<i>Days</i>	<i>Target Response</i>	<i>Response Strength<sup>a</sup></i>
Monday		
Tuesday		
Wednesday		
Thursday		
Friday		
Saturday		
Sunday		
		Total:

<sup>a</sup>Specify measure of response strength to be used (e.g., rate, intensity, duration, magnitude, latency).

**Figure 13.6** Daily Behavior Recording Chart

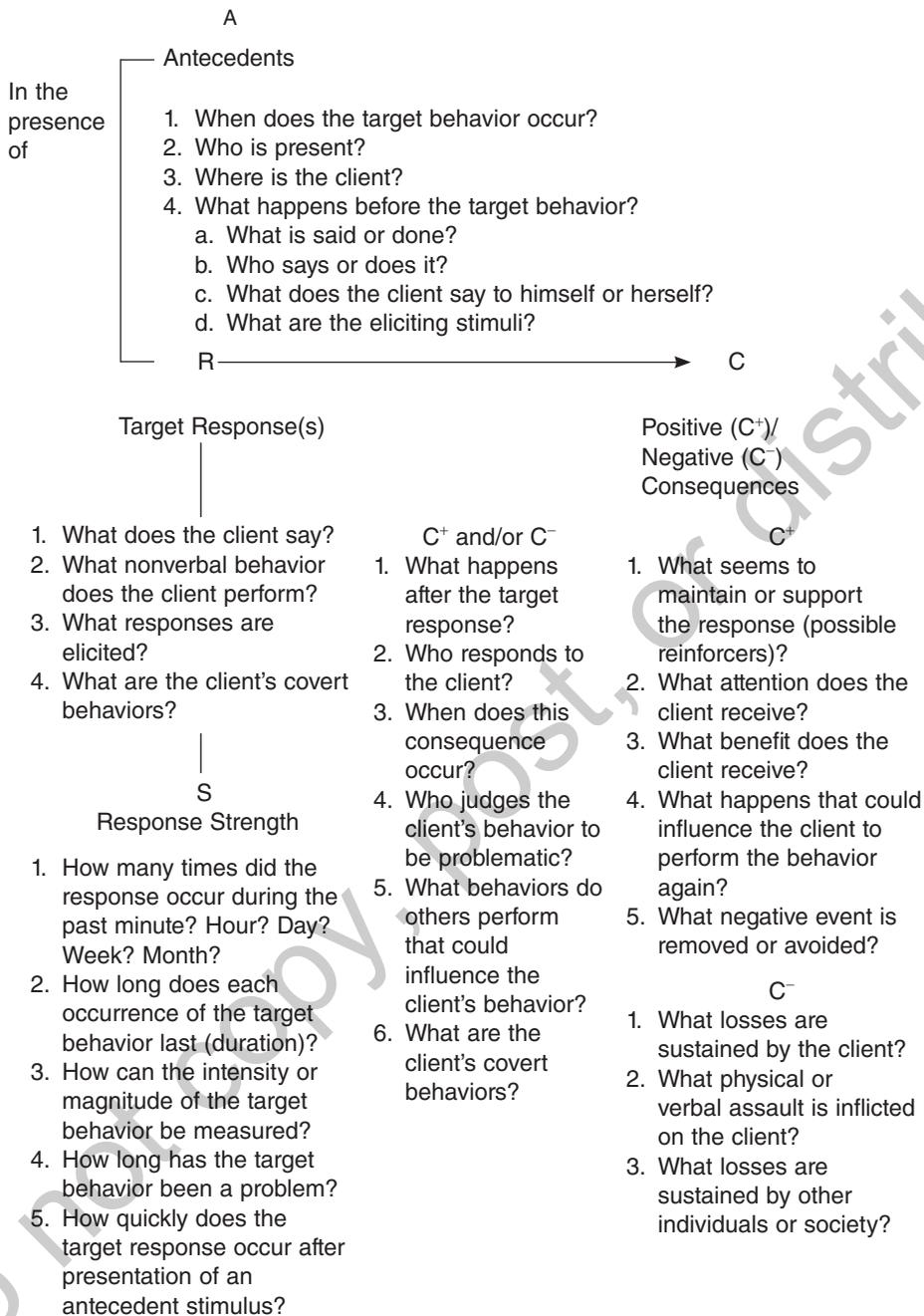


Figure 13.7 RAC-S Diagram

controlling antecedents, (b) the relationship between the target response and its possible controlling consequences, and (c) the target response and its measures

of rate, intensity, duration, magnitude, and/or latency. The practitioner analyzes these assessment data to identify controlling relationships between the target behavior and its antecedents and consequences. The practitioner asks questions similar to those listed in Figure 13.7 to elicit information necessary to complete this initial assessment.

## Interviews and Assessment Instruments

Questionnaires, rating scales, client records, diaries, and checklists, such as the Sundel Problem Checklist and Sundel Problem Role Inventory described earlier, can provide descriptive assessment information to supplement direct observation of target behaviors. By using such assessment instruments, the practitioner can obtain information that otherwise might require extensive interviewing or observation. The Beck Depression Inventory II (BDI-II; Beck, Steer, & Brown, 1996) is a 21-item self-report scale that assesses the severity of depression. The Yale-Brown Obsessive Compulsive Scale (Y-BOCS; Goodman, Price, Rasmussen, Mazure, Delgado, et al., 1989; Goodman, Price, Rasmussen, Mazure, Fleischmann, et al., 1989) is a symptom checklist and severity scale. The Child Behavior Checklist (CBCL; Achenbach, 1978) is a standardized form that parents fill out to describe their children's behavioral and emotional problems. The Fear Survey Schedule (Wolpe & Lang, 1964), Fear Questionnaire (Marks & Mathews, 1979) and Beck Anxiety Inventory (BAI; Beck & Steer, 1993) are used to identify events that are anxiety producing for an individual. The Novaco Anger Inventory (Novaco, 1975) describes 80 different situations in which individuals are asked to rate their degree of anger.

Examples of other assessment instruments and questionnaires include the Couples Precounseling Inventory (Stuart & Jacobson, 1987), the Sundel Assertiveness Scale (Dudley, 2011; Sundel & Sundel, 1980), the Liebowitz Anxiety Scale for Children and Adolescents (Masia-Warner et al., 2003), and the Life History Questionnaire (Wolpe & Lazarus, 1966). Beidas et al. (2015) have provided a clinical guide and reference for the selection of free, brief, reliable and validated evidence-based assessment instruments for public sector mental health settings.

A two-volume sourcebook for human service professionals is available that includes a collection of questionnaires and scales that can be used to obtain self-report measures for a wide range of problems presented by adults, couples, children and families (Corcoran & Fischer, 2013a, 2013b). These tools, also called "rapid assessment instruments" (RAIs), include materials for assessing clients in culturally diverse populations. Other multicultural assessment resources include the Multicultural Assessment Procedure (MAP), the Cultural Assessment Framework and Interview Protocol (CAIP), and the Multicultural Assessment Interview Process (MAIP), which have been reviewed by Pieterse and Miller (2010). The *DSM-5* (APA, 2013) includes a Cultural Formulation Interview for practitioners to use with clients and informants to help identify the impact of cultural factors on the individual's problem behaviors. Also included is a Glossary of Cultural Concepts of Distress.

The practitioner can use electronic and other devices to obtain important physiological measures related to a client's respondent behaviors. These include devices for monitoring blood sugar, heart rate, blood pressure, and other physiological indicators. Smartphones, tablets, and computers offer innovative features, such as ambulatory assessment (e.g., Carpenter, Wycoff, & Trull, 2016; Trull & Ebner-Priemer, 2013, 2014). These devices have been used to collect self-report data on individuals with generalized anxiety disorder (e.g., Maged, Kamel, Wheeler, Tavares, & Jones, 2011), alcohol use disorders (Gustafson et al., 2014), and on food consumption and exercise for obese clients (e.g., Agras, Taylor, Feldman, Losch, & Burnett, 1990).

## Behavioral Reenactment

The practitioner may sometimes find it difficult to specify RAC-S data accurately on the basis of examples provided by the client. Although clients might accurately describe the behaviors of others in problematic situations, they may lack awareness of their own behaviors in those situations. Behavioral reenactment can be used to obtain RAC-S information on the client's behaviors in the problematic situation (Sundel & Sundel, 1985). The practitioner can observe the client's verbal and nonverbal behaviors during the reenactment and can compare these observations with the client's previous descriptions. Behavioral reenactment can be useful in confirming the accuracy or consistency of a client's verbal report of the target behavior and its controlling conditions.

For example, Sheila, a supervisor with child protective services, complained that her department director singled her out for criticism. She insisted that nothing she did or said was responsible for the criticism. In a group session, Sheila reenacted a recent incident in which the director criticized her after a staff meeting. During the role play, Sheila spoke in short, clipped phrases, sneered, and stood defiantly with her hands on her hips when the person role-playing the director asked her about cases she was supervising. After the reenactment, the practitioner and group members pointed out discrepancies between Sheila's account of the incident and the behaviors they observed during the reenactment. The group members identified some of Sheila's nonverbal responses as inappropriate reactions to reasonable questioning by the director. Sheila had been unaware of how her nonverbal behaviors were contributing to the director's negative assessment of the situation. The behavioral reenactment provided a concrete example of Sheila's problem behaviors and their possible controlling antecedents and consequences.

## Functional Behavioral Assessment

**Functional behavioral assessment** refers to the specific methods used in a behavioral assessment framework to identify the controlling conditions of a target behavior (e.g., Cipani & Schock, 2010; Kurtz et al., 2003; O'Neill, Albin, Storey, Horner, & Sprague, 2015). In addition to direct observation, questionnaires, rating scales

and interviews with significant others, functional assessment uses functional analysis, which is the manipulation of antecedents and consequences of a target behavior to pinpoint the specific contingencies that maintain the target behavior (e.g., Beavers, Iwata, & Lerman, 2013; Iwata, Dorsey, Slifer, Bauman, & Richman, 1982/1994).

Dwyer-Moore and Dixon (2007) conducted functional analyses to address problem behaviors of three elderly adults diagnosed with dementia in a long-term care setting. Two of the individuals exhibited disruptive vocalizations (e.g., obscenities, repetitive statements) and one exhibited wandering behaviors, with attempts to leave the facility. The functional analysis for Alice, the woman who engaged in disruptive vocalizations, will be described here. Four experimental conditions were presented in random order:

1. Attention condition—the experimenter provided social attention only for the target behavior;
2. Demand condition—the experimenter asked Alice to perform gross motor tasks similar to those required in the occupational therapy program; compliance resulted in praise and presentation of the next demand. Incorrect responses resulted in prompts; problem behavior resulted in removal of the demand.
3. Control condition—various leisure items were continuously available and the experimenter provided social attention on a fixed-interval 30-second schedule;
4. Alone condition—Alice was alone while the experimenter observed. No social consequences and no leisure items were presented.

In examining the data, it was determined that Alice's inappropriate vocalizations were maintained by attention; that is, the inappropriate vocalizations were most frequent during the attention condition. If the inappropriate vocalizations had been maintained by escape from demands, or if they were self-reinforcing, the vocalizations would have occurred most frequently during the demand condition and the alone condition, respectively. As a result of this functional analysis, an intervention that removed attention for inappropriate vocalizations was applied that resulted in a decrease in Alice's problem behavior.

Ethical questions have been raised regarding the appropriateness of functional analysis, which involves experimental manipulation that essentially motivates the individual to perform the problem behavior (e.g., O'Neill et al., 1997). Before a functional analysis is carried out, however, stakeholders such as parents, guardians, staff, and ethics and institutional review boards are consulted to approve the purpose and goals of the analysis and to grant informed consent (e.g., Hadaway & Brue, 2016; O'Neill et al., 2015). Implementation obstacles have also been identified, along with suggestions for overcoming them (e.g., Hanley, 2012). A "Special Issue on Functional Analysis" in the *Journal of Applied Behavior Analysis* (2013) attests to the rapid growth of research and knowledge development on this topic.

## Identifying Controlling Relationships With RAC-S

The practitioner uses the behavioral assessment procedure to identify the controlling antecedents and consequences of the client's target behavior(s), as follows:

1. List the client's problems.
2. Reconcile discrepancies in descriptions of the client's problems from different sources.
3. Select one problem for immediate attention.
4. Obtain examples of the problem that specify the target response(s), possible controlling antecedents, negative consequences, possible controlling consequences, and response strength.
5. Design a measurement plan, specifying baseline measures of response strength to be recorded.
6. Collect the RAC-S data and other assessment information (i.e., from interviews, cultural and minority group considerations, checklists, rating scales, questionnaires, diaries, case records, and behavioral reenactment) to formulate a hypothesis about controlling relationships between the target behavior and environmental events.
7. Analyze the data to identify controlling antecedents and consequences of the client's target behavior(s).

By taking these steps, the practitioner obtains the data needed to analyze relationships between the target response and the antecedents and consequences that control it. Many antecedents and consequences may be associated with the target response, but not all will be involved in its maintenance. Analyzing the data allows the practitioner to formulate a hypothesis regarding what is controlling the behavior and what needs to be altered to produce behavior change.

For example, two couples argue frequently. One couple makes up soon after each argument and then has sex. The other couple separates after each argument, with the wife going to her mother's house and the husband going to a neighborhood bar. The behavior (frequent arguing) is the same for both couples, but the consequences are quite different. Conducting a behavioral assessment allows the practitioner to identify the consequences and formulate a hypothesis for what is controlling the arguments.

In another example, Tyler may scream every night at bedtime, refuse to eat more than a bite of dinner most evenings, and cry before being dropped off at day care three times a week. These are very different behaviors, but in looking at the antecedents the practitioner finds that Tyler engages in these behaviors when his parents begin to argue, raising their voices. When he screams, refuses food, and cries, both parents attend to him and stop yelling at each other. By conducting a behavioral assessment, the practitioner identifies these antecedents to

formulate a hypothesis regarding the conditions that need to be altered to produce behavior change.

## Case Study

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Denice, a computer programmer employed by a software firm, was referred for counseling by her physician because of her “moodiness” and “emotional outbursts” at work. When the therapist asked her for an example of the problem, Denice described a recent incident with a coworker. The coworker gave Denice some suggestions for completing her part of the team project, and Denice became angry, lost her temper, and shouted at the coworker. Denice told her coworker that she had been in the business longer than he had and said, “You have a lot of nerve thinking that you know more about programming than I do.” Denice also told her coworker that she did not ask for his opinions and would thank him to stay out of her business. After the incident, Denice’s boss called her into his office and asked her what was wrong. She said she was “frustrated and angry” and did not know why other people had to interfere with how she did her job. The therapist used this information in initiating a behavioral assessment.

Denice’s presenting problem (i.e., the problem that she said brought her to seek help) was a coworker’s interfering with her doing her job. Information gathered through the use of the Sundel Problem Checklist and the Sundel Problem Role Inventory indicated that Denice also had difficulty disciplining her teenage son and getting along with her ex-husband. After further discussion with the therapist to prioritize her concerns, Denice indicated that her work situation was of most concern because the coworker complained to her boss about her and she was in danger of losing her job. Denice had worked at the company for 4 years. In discussing an example of the problem, the therapist asked Denice how often she had unpleasant conversations with coworkers. Denice said that this was not the first time she had “lost it” when talking with a coworker. Although Denice feared that she would be fired if her behavior continued, she said she did not know why other people had to interfere with how she did her job.

When questioned, Denice had difficulty specifying the circumstances of her last unpleasant encounter with a coworker. To obtain more specific data, the therapist arranged a behavioral reenactment to provide concrete examples of Denice’s behavior in the problematic situation. The therapist role-played Jake, one of Denice’s coworkers, and Denice role-played herself in a simulation of a recent incident in which she lost her temper. Denice described the situation as follows: Denice was complaining to Jake about the tight deadline for completing a project and commented that management was becoming more rigid. Jake suggested that Denice try to change her work pattern and work more collaboratively with the rest of the team. The therapist noted that in all of the examples Denice reported, the coworkers involved were male.

During the behavioral reenactment, the therapist observed that Denice shouted, clenched her fists, frowned, and moved her arms rapidly up and down. Denice told

“Jake” that she had been in the business longer than he had and said, “You have a lot of nerve thinking that you know more about computer programming than I do.” She said that she did not ask for his opinions and would thank him to stay out of her business. When questioned after the role-play, Denice reported feeling “frustrated and angry.” She said that she had behaved similarly during other incidents at work. Denice also reported having angry and frightening thoughts about several incidents she experienced at her previous job.

To determine the controlling antecedents for Denice’s inappropriate responses, the therapist asked Denice questions similar to those in the RAC-S diagram shown in Figure 13.7. For example, Where and when were the target behaviors performed? Who was present? What was said? What were you thinking and feeling? The therapist determined that the target behaviors occurred when Denice was in her cubicle complaining to Jake, a coworker, about the project deadline. Just before Denice became anxious and angry, Jake made a suggestion about how Denice could better meet her deadlines. Denice told herself that she did not deserve criticism from her coworker and “he thinks I can’t do my job.” In addition, Denice reported thinking about some incidents of sexual harassment she experienced at her previous job. She told the therapist that she was particularly anxious around men she worked with ever since a male supervisor at her last job touched her inappropriately and threatened to have her fired if she didn’t have sex with him. Denice also reported that she felt very anxious when male coworkers criticized her because she sometimes felt that she was “not smart enough to do this job.”

Denice stated the negative consequences of her target responses: Her boss criticized her and she could lose her job if she continued to shout at her coworkers; Denice began breathing quickly and her heart rate increased; she reported feeling that she was “losing control.” She looked for ways to escape from the situation. Further interviewing or observation was necessary to discover the controlling consequences for Denice’s target behaviors. The RAC-S diagram in Figure 13.7 suggests questions that the therapist could use to help identify possible reinforcers for her behaviors. For example, What maintains the responses? What attention or other benefits does she receive? When Denice shouts at a coworker, she is negatively reinforced by the coworker’s walking away from her and the other employees leaving the area. Denice also reported that her anxiety decreased after she shouted and the coworkers walked away from her, another negatively reinforcing consequence for her shouting.

Denice’s assessment form is shown in Figure 13.8. After completing the assessment form, the therapist instructed Denice to record the baseline data of frequency and duration of the target behavior of shouting at male coworkers. The Daily Behavior Recording Chart that Denice filled out is shown in Figure 13.9.

Data recorded on the Daily Behavior Recording Chart allows the practitioner to compare the client’s subjective recall of the problematic situation with a record based on the client’s actual performance. The client’s activities of observing and recording RAC-S data might produce a temporary change in the frequency of a target response in the desired direction, possibly because of the client’s heightened awareness of performing the target behavior.

1. State the problem and give an example of its occurrence.  
Denice is afraid that she will be fired. Coworkers complain to her boss about her. When a male coworker gave her a suggestion about improving her work efficiency, she became angry, lost her temper, and shouted at the coworker.
2. Specify the target response(s) to be observed in precise terms. Be sure that a stranger reading this description would know exactly what the client is *saying* or *doing*.  
*Behavior excesses:* Shouting, clenching her fists, frowning, moving her arms rapidly up and down; feeling anxious; rapid breathing and increased heart rate; thoughts of previous anxiety-provoking sexual harassment; thinking, "I'm not smart enough to do this job." (All of these target behaviors were present only with male coworkers.)  
*Behavior deficits:* Discussing her work performance in a calm and pleasant manner with male coworkers.
3. Describe the antecedents related to the target response(s).
  - a. Denice complained to a male coworker about tight deadlines.
  - b. Coworker made a suggestion about how Denice could improve her work performance.
  - c. Denice saying to herself, "I don't deserve criticism from my coworker"; "He thinks I can't do my job."
4. Describe in specific terms the negative consequences of this problem.
  - a. Boss criticized Denice's shouting at coworkers.
  - b. Denice became frustrated and angry.
  - c. Fear of losing her job
5. State the possible reinforcers for the target response(s).
  - a. Male coworkers stay away from her.
  - b. Decrease in suggestions from male coworkers about how she does her job

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**Figure 13.8** Assessment Form for Denice

Denice recorded the frequency and duration of her target responses for 1 week. She recorded shouting incidents with male coworkers three times during the week and recorded four instances of speaking calmly to coworkers (female). She estimated the mean duration of each shouting incident to be about 1 to 2 minutes. The mean duration of speaking calmly to female coworkers was 45 seconds. Figure 13.10 displays RAC-S information about Denice's problem. The therapist could graph Denice's target behaviors from the baseline data that Denice provided. In this situation, however, the behaviors occur relatively infrequently and a graph may not provide any additional information. Because Denice reported feeling anxious at work daily, the therapist could graph Denice's baseline anxiety using the subjective units of discomfort scale (SUDS; Wolpe & Lang, 1964) by having her record her anxiety level every day at work at 1 p.m. In this way, her baseline anxiety could be compared with her anxiety level after an intervention was implemented to determine if her

Description of Target Responses:

- A. Shouts at coworker
- B. Speaks calmly to coworker

<i>Days</i>	<i>Target Response</i>	<i>Response Strength (Frequency/Day; Duration)<sup>a</sup></i>
Sunday	Day off	
Monday	Spoke calmly with coworkers (female)	30 seconds, 2 occurrences
Tuesday	Shouted at coworker (male)	1 minute, 1 occurrence
Wednesday	Spoke calmly with coworkers (female)	1 minute, 2 occurrences
Thursday	Shouted at coworker (male)	2 minutes, 1 occurrence
Friday	Shouted at coworker (male)	2 minutes, 1 occurrence
Saturday	Day off	
		<i>Shouting: total, 3 times/week; average of 1–2 minutes/incident</i> <i>Spoke calmly: 4/week; average 45 seconds</i>

<sup>a</sup>Specify measure of response strength to be used. In this case, specify response strength in terms of frequency per day or duration, or both.

**Figure 13.9** Daily Behavior Recording Chart for Denice

anxiety decreased significantly. Figure 13.10 is a graph with hypothetical data of Denice’s anxiety, measured in SUDS.

The RAC-S data of Denice’s problem identified multiple antecedents prior to her shouting at male coworkers and several consequences following that behavior. The challenge for the practitioner in behavioral assessment is to determine which of the antecedents and consequences are controlling the target response. When Denice complained to a male coworker about the difficulty in meeting tight deadlines, the coworker gave her suggestions about how she could better meet the deadlines (antecedent). Denice became anxious and shouted, “You have a lot of nerve thinking you know more about programming than I do” (response). Denice’s boss criticized her shouting and warned her that she could lose her job (negative consequences). Denice’s male coworkers avoided her (positive consequences).

Analyzing the data allowed the practitioner to formulate the following hypothesis regarding which conditions exerted control over the target behaviors: Denice’s

<i>Response(s)</i>	<i>Antecedents</i>	<i>Consequences</i>	<i>Strength</i>
Denice shouted; clenched her fists; frowned; moved her arms rapidly up and down; said to coworker, "You have a lot of nerve thinking you know more about programming than I do"; she thought, "I feel anxious and angry."; rapid breathing and increased heart rate	Male coworker made a suggestion about how Denice could better meet deadlines; Denice said to herself, "I don't deserve criticism from Jake (coworker)"; anxiety about completing her assignment on time; feeling exhausted at the end of the day; thinking about a previous incident of sexual harassment	<i>Negative:</i> Boss criticized Denice's shouting ("You can't shout at your coworkers like that"); Denice could lose her job.  <i>Positive:</i> Male coworkers stop making suggestions; coworkers stay away from her.	Two times per week; mean duration of each incident was estimated to be about 2 minutes.

Figure 13.10 RAC-S Information for Denice

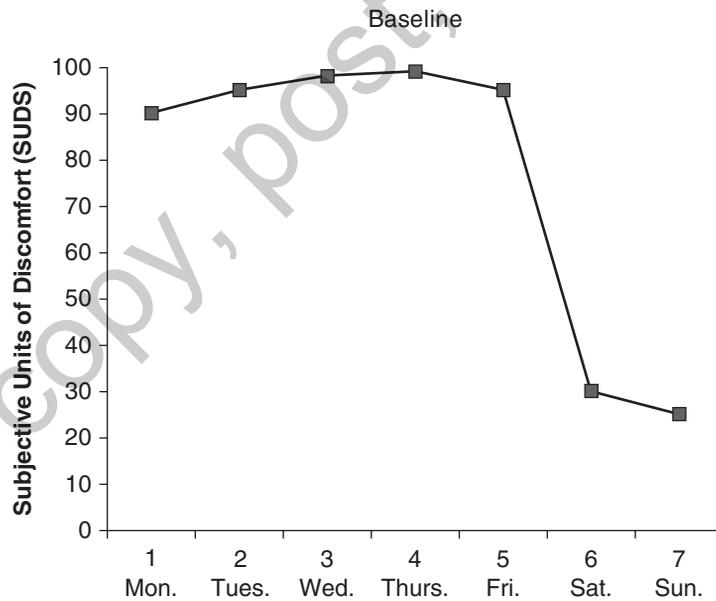


Figure 13.11 Baseline Graph of Denice's Anxiety

shouting at her male coworkers was reinforced and maintained by negative reinforcement. When she shouted, her anxiety decreased, male coworkers stopped giving her suggestions about how to do her job, and her coworkers left her alone.

## Summary

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1. Behavioral assessment is used to analyze a client's target behaviors and environmental events, including antecedents and consequences.
2. In crisis situations, the practitioner may have to intervene prior to carrying out the behavioral assessment to provide the client with necessary resources, referrals, or direct assistance.
3. Knowledge of cultural practices and diversity issues are important considerations in behavioral assessment.
4. RAC-S is an acronym for the major elements of behavioral assessment: target Response(s), Antecedent(s), Consequence(s), and response Strength.
5. A problem area is a broad concern that is often related to the role or position in which the individual experiences difficulty.
6. The practitioner and client consider the following choices in establishing problem priorities for intervention: (a) the problem of most immediate concern of the client, significant others, or both; (b) the problem that will have the most severe negative consequences if not handled immediately; (c) the problem that requires handling before other problems can be treated; and (d) the problem that can be corrected most quickly.
7. The term *controlling conditions* refers to antecedents and consequences that maintain a target behavior. Antecedents such as a CS, S<sup>D</sup>, or US precede, signal, or elicit a target behavior. Consequences follow a target behavior and influence the likelihood that it will be performed again. Positive and negative reinforcers increase the probability of a behavior recurring (strengthen the behavior), and punishers decrease the likelihood of a behavior recurring (weaken the behavior).
8. Continuous recording, interval recording, and time sampling are ways of recording data. If there is more than one observer recording data, the practitioner calculates interobserver reliability to determine the extent of agreement between the observers.
9. Data related to the strength and controlling conditions of a target behavior are recorded during assessment, intervention, and follow-up periods. These data can be obtained through direct observations, client reports, and the use of physiological measurement devices (e.g., to measure blood pressure and heart rate) and mobile technology. Additional supportive data can be obtained from reports of significant others, behavioral reenactment, assessment checklists, and questionnaires.
10. Functional behavioral assessment uses functional analysis, which is the manipulation of antecedents and consequences of a target behavior to identify the controlling conditions that maintain it.

11. The practitioner analyzes the client's RAC-S data to identify controlling antecedents and consequences and their effects on the target behavior. The results of this analysis allow the practitioner to formulate a hypothesis regarding the conditions maintaining the target behavior.

## Suggested Activities

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1. Watch several episodes of your favorite television sitcom and identify RAC-S data for a target response of one of the program's characters. Share your data with classmates.
2. Use behavioral reenactment with a friend or family member to identify RAC-S data for a response you would like to change. What information did you obtain that you did not have prior to the reenactment?
3. Discuss cultural factors in assessing the concerns of a client who was a member of a minority group.

## Chapter Posttest Questions

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- (2) 1. Give an example of a behavior deficit and an example of a behavior excess.
- (4) 2. A caseworker tells her supervisor that a client is always late for his appointments.
  - A. Which of the following questions should the supervisor ask her to obtain baseline measures of the complaint? Circle the correct answer(s).
    1. Why do you think the client is always late?
    2. How many minutes late is the client?
    3. How many times has the client been late this month?
    4. What do you think the client's lateness means?
  - B. Give one hypothetical answer to each question you chose above that would provide baseline data of the target behavior.
- (2) 3. Using the information from Denice's case in the chapter (p. 246), state two of Denice's target behaviors.
  - (1) 4. Specify one antecedent related to Denice's interaction with her coworkers.
  - (2) 5. State two negative consequences of Denice's target responses.
  - (2) 6. State two possible reinforcers for Denice's target responses.
  - (1) 7. State one hypothesis regarding the conditions that exert control over Denice's target behaviors.

- (1) 8. See Case Example 1 (p. 334). Using the information from the case example, state a possible reinforcer maintaining Robert's drug use.

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