# 6.3 Altering Consciousness without Drugs

## Learning Objective

1. Review the ways that people may alter consciousness without using drugs.

Although the use of psychoactive drugs can easily and profoundly change our experience of consciousness, we can also — and often more safely — alter our consciousness without drugs. These altered states of consciousness are sometimes the result of simple and safe activities, such as sleeping, watching television, exercising, or working on a task that intrigues us. In this section we consider the changes in consciousness that occur through *hypnosis*, *sensory deprivation*, and *meditation*, as well as through other non-drug-induced mechanisms.

## Changing Behaviour through Suggestion: The Power of Hypnosis

Franz Anton Mesmer (1734-1815) was an Austrian doctor who believed that all living bodies were filled with magnetic energy (Figure 6.13). In his practice, Mesmer passed magnets over the bodies of his patients while telling them their physical and psychological problems would disappear. The patients frequently lapsed into a trancelike state (they were said to be "mesmerized") and reported feeling better when they awoke (Hammond, 2008).


Figure 6.13 Portrait of Franz Anton Mesmer.

Although subsequent research testing the effectiveness of Mesmer's techniques did not find any long-lasting improvements in his patients, the idea that people's experiences and behaviours could be changed through the power of suggestion has remained important in psychology. James Braid, a Scottish physician, coined the term *hypnosis* in 1843, basing it on the Greek word for *sleep* (Callahan, 1997).

**Hypnosis** is *a trancelike state of consciousness, usually induced by a procedure known as hypnotic induction, which consists of heightened suggestibility, deep relaxation, and intense focus* (Nash & Barnier, 2008). Hypnosis became famous in part through its use by Sigmund Freud in an attempt to make unconscious desires and emotions conscious and thus able to be considered and confronted (Baker & Nash, 2008).

Because hypnosis is based on the power of suggestion, and because some people are more suggestible than others, these people are more easily hypnotized. Hilgard (1965) found that about 20% of the participants he tested were entirely unsusceptible to hypnosis, whereas about 15% were highly responsive to it. The best participants for hypnosis are people who are willing or eager to be hypnotized, who are able to focus their attention and block out peripheral awareness, who are open to new experiences, and who are capable of fantasy (Spiegel, Greenleaf, & Spiegel, 2005).

People who want to become hypnotized are motivated to be good subjects, to be open to suggestions by the hypnotist, and to fulfill the role of a hypnotized person as they perceive it (Spanos, 1991). The hypnotized state results from a combination of conformity, relaxation, obedience, and suggestion (Fassler, Lynn, & Knox, 2008). This does not necessarily indicate that hypnotized people are "faking" or lying about being hypnotized. Kinnunen, Zamansky, and Block (1994) used measures of skin conductance (which indicates emotional response by measuring perspiration, and therefore renders it a reliable indicator of deception) to test whether hypnotized people were lying about having been hypnotized. Their results suggested that almost 90% of their supposedly hypnotized subjects truly believed that they had been hypnotized.

One common misconception about hypnosis is that the hypnotist is able to "take control" of hypnotized patients and thus can command them to engage in behaviours against their will. Although hypnotized people are suggestible (Jamieson & Hasegawa, 2007), they nevertheless retain awareness and control of their behaviour and are able to refuse to comply with the hypnotist's suggestions if they so choose (Kirsch & Braffman, 2001). In fact, people who have not been hypnotized are often just as suggestible as those who have been (Orne & Evans, 1965).

Another common belief is that hypnotists can lead people to forget the things that happened to them while they were hypnotized. Hilgard and Cooper (1965) investigated this question and found that they could lead people who were very highly susceptible to hypnosis to show at least some signs of post-hypnotic amnesia (i.e., forgetting where they had learned information that had been told to them while they were under hypnosis), but that this effect was not strong or common.

Some hypnotists have tried to use hypnosis to help people remember events, such as childhood experiences or details of crime scenes, that they have forgotten or repressed. The idea is that some memories have been stored but can no longer be retrieved, and that hypnosis can aid in the retrieval process. But research finds that this is not successful: people who are hypnotized and then asked to relive their childhood act like children, but they do not accurately recall the things that occurred to them in their own childhood (Silverman & Retzlaff, 1986). Furthermore, the suggestibility produced through hypnosis may lead people to erroneously recall experiences that they did not have (Newman & Baumeister, 1996). Many states and jurisdictions have therefore banned the use of hypnosis in criminal trials because the "evidence" recovered through hypnosis is likely to be fabricated and inaccurate.

Hypnosis is also frequently used to attempt to change unwanted behaviours, such as to reduce smoking, overeating, and alcohol abuse. The effectiveness of hypnosis in these areas is controversial, although at least some successes have been reported. Kirsch, Montgomery, and Sapirstein (1995) found that adding hypnosis to other forms of

therapy increased the effectiveness of the treatment, and Elkins and Perfect (2008) reported that hypnosis was useful in helping people stop smoking. Hypnosis is also effective in improving the experiences of patients who are experiencing anxiety disorders, such as post-traumatic stress disorder (PTSD) (Cardena, 2000; Montgomery, David, Winkel, Silverstein, & Bovbjerg, 2002), and for reducing pain (Montgomery, DuHamel, & Redd, 2000; Patterson & Jensen, 2003).

## Reducing Sensation to Alter Consciousness: Sensory Deprivation

**Sensory deprivation** is the *intentional reduction of stimuli affecting one or more of the five senses, with the possibility of resulting changes in consciousness*. Sensory deprivation is used for relaxation or meditation purposes, and in physical and mental health-care programs to produce enjoyable changes in consciousness. But when deprivation is prolonged, it is unpleasant and can be used as a means of torture.

Although the simplest forms of sensory deprivation require nothing more than a blindfold to block the person's sense of sight or earmuffs to block the sense of sound, more complex devices have also been devised to temporarily cut off the senses of smell, taste, touch, heat, and gravity. In 1954, John Lilly, a neurophysiologist at the National Institute of Mental Health, developed the sensory deprivation tank. The tank is filled with water that is the same temperature as the human body, and salts are added to the water so that the body floats, thus reducing the sense of gravity. The tank is dark and soundproof, and the person's sense of smell is blocked by the use of chemicals in the water, such as chlorine.

Figure 6.14 Sensory Deprivation Tank.

The sensory deprivation tank has been used for therapy and relaxation (Figure 6.14). In a typical session for alternative healing and meditative purposes, a person may rest in an isolation tank for up to an hour. Treatment

in isolation tanks has been shown to help with a variety of medical issues, including insomnia and muscle pain (Suedfeld, 1990b; Bood, Sundequist, Kjellgren, Nordström, & Norlander, 2007; Kjellgren, Sundequist, Norlander, & Archer, 2001), headaches (Wallbaum, Rzewnicki, Steele, & Suedfeld, 1991), and addictive behaviours such as smoking, alcoholism, and obesity (Suedfeld, 1990a).

Although relatively short sessions of sensory deprivation can be relaxing and both mentally and physically beneficial, prolonged sensory deprivation can lead to disorders of perception, including confusion and hallucinations (Yuksel, Kisa, Aydemir, & Goka, 2004). It is for this reason that sensory deprivation is sometimes used as an instrument of torture (Benjamin, 2006).

## Meditation

**Meditation** refers to *techniques in which the individual focuses on something specific, such as an object, a word, or one's breathing, with the goal of ignoring external distractions, focusing on one's internal state, and achieving a state of relaxation and well-being*. Followers of various Eastern religions (Hinduism, Buddhism, and Taoism) use meditation to achieve a higher spiritual state, and popular forms of meditation in the West, such as yoga, Zen, and Transcendental Meditation, have originated from these practices. Many meditative techniques are very simple. You simply need to sit in a comfortable position with your eyes closed and practise deep breathing. You might want to try it out for yourself (see Video Clip: "Try Meditation").

*Here is a simple meditation exercise you can do in your own home:* **Watch: Try Meditation [YouTube]**

Brain imaging studies have indicated that meditation is not only relaxing but can also induce an altered state of consciousness (Figure 6.15). Cahn and Polich (2006) found that experienced meditators in a meditative state had more prominent alpha and theta waves, and other studies have shown declines in heart rate, skin conductance, oxygen consumption, and carbon dioxide elimination during meditation (Dillbeck, Cavanaugh, Glenn, & Orme-Johnson, 1987; Fenwick, 1987). These studies suggest that the action of the sympathetic division of the autonomic nervous system (ANS) is suppressed during meditation, creating a more relaxed physiological state as the meditator moves into deeper states of relaxation and consciousness.

Research has found that regular meditation can mediate the effects of stress and depression, and promote well-being (Grossman, Niemann, Schmidt, & Walach, 2004; Reibel, Greeson, Brainard, & Rosenzweig, 2001; Salmon et al., 2004). Meditation has also been shown to assist in controlling blood pressure (Barnes, Treiber, & Davis, 2001; Walton et al., 2004). A study by Lyubimov (1992) showed that during meditation, a larger area of the brain was responsive to sensory stimuli, suggesting that there is greater coordination between the two brain hemispheres as a result of meditation. Lutz, Greischar, Rawlings, Ricard,and Davidson (2004) demonstrated that those who meditate regularly (as opposed to those who do not) tend to utilize a greater part of their brain and that their gamma waves are faster and more powerful. And a study of Tibetan Buddhist monks who meditate daily found that several areas of the brain can be permanently altered by the long-term practice of meditation (Lutz et al. 2004).

It is possible that the positive effects of meditation could also be found by using other methods of relaxation. Although advocates of meditation claim that meditation enables people to attain a higher and purer consciousness, perhaps any kind of activity that calms and relaxes the mind, such as working on crossword puzzles, watching television or movies, or engaging in other enjoyed behaviours, might be equally effective in creating positive outcomes. Regardless of the debate, the fact remains that meditation is, at the very least, a worthwhile relaxation strategy.

Figure 6.15 Meditation Exercise. Research has found that regular meditation has positive physiological and psychological effects.

## Psychology in Everyday Life: The Need to Escape Everyday Consciousness

We may use recreational drugs, drink alcohol, overeat, have sex, and gamble for fun, but in some cases these normally pleasurable behaviours are abused, leading to exceedingly negative consequences for us. We frequently refer to the abuse of any type of pleasurable behaviour as an "addiction," just as we refer to drug or alcohol addiction.

Roy Baumeister (Baumeister, 1991) has argued that the desire to avoid thinking about the self (what he calls the "escape from consciousness") is an essential component of a variety of self-defeating behaviours. Their approach is based on the idea that consciousness involves *self-awareness*, the process of thinking about and examining the self. Normally we enjoy being self-aware, as we reflect on our relationships with others, our goals, and our achievements. But if we have a setback or a problem, or if we behave in a way that we determine is inappropriate or immoral, we may feel stupid, embarrassed, or unlovable. In these cases self-awareness may become burdensome. And even if nothing particularly bad is happening at the moment, self-awareness may still feel unpleasant because we have fears about what might happen to us or about mistakes that we might make in the future.

Baumeister argues that when self-awareness becomes unpleasant, the need to forget about the negative aspects of the self may become so strong that we turn to altered states of consciousness. Baumeister believes that in these cases we escape the self by narrowing our focus of attention to a particular action or activity, which prevents us from having to think about ourselves and the implications of various events for our self-concept.

Baumeister has analyzed a variety of self-defeating behaviours in terms of the desire to escape consciousness. Perhaps most obvious is suicide — the ultimate self-defeating behaviour and the ultimate solution for escaping the negative aspects of self-consciousness. People who commit suicide are normally depressed and isolated. They feel bad about themselves, and suicide is a relief from the negative aspects of

self-reflection. Suicidal behaviour is often preceded by a period of narrow and rigid cognitive functioning that serves as an escape from the very negative view of the self brought on by recent setbacks or traumas (Baumeister, 1990).

Alcohol abuse may also accomplish an escape from self-awareness by physically interfering with cognitive functioning, making it more difficult to recall the aspects of our self-consciousness (Steele & Josephs, 1990). And cigarette smoking may appeal to people as a low-level distractor that helps them to escape self-awareness. Heatherton and Baumeister (1991) argued that binge eating is another way of escaping from consciousness. Binge eaters, including those who suffer from bulimia nervosa, have unusually high standards for the self, including success, achievement, popularity, and body thinness. As a result they find it difficult to live up to these standards. Because these individuals evaluate themselves according to demanding criteria, they will tend to fall short periodically. Becoming focused on eating, according to Heatherton and Baumeister, is a way to focus only on one particular activity and to forget the broader, negative aspects of the self.

The removal of self-awareness has also been depicted as the essential part of the appeal of masochism, in which people engage in bondage and other aspects of submission. Masochists are frequently tied up using ropes, scarves, neckties, stockings, handcuffs, and gags, and the outcome is that they no longer feel that they are in control of themselves, which relieves them from the burdens of the self (Baumeister, 1991).

Newman and Baumeister (1996) have argued that even the belief that one has been abducted by aliens may be driven by the need to escape everyday consciousness. Every day at least several hundred (and more likely several thousand) Americans claim that they are abducted by these aliens, although most of these stories occur after the individuals have consulted with a psychotherapist or someone else who believes in alien abduction. Again, Baumeister has found a number of indications that people who believe that they have been abducted may be using the belief as a way of escaping self-consciousness.

## Key Takeaways

- Hypnosis is a trancelike state of consciousness consisting of heightened susceptibility, deep relaxation, and intense focus.
- Hypnosis is not useful for helping people remember past events, but it can be used to alleviate anxiety and pain.
- Sensory deprivation is the intentional reduction of stimulation to one or more of the senses. It can be used therapeutically to treat insomnia, muscle tension, and pain.
- Meditation refers to a range of techniques that can create relaxation and well-being.

## Exercises and Critical Thinking

1. Do you think that you would be a good candidate for hypnosis? Why or why not?
2. Try the meditation exercise in this section for three consecutive days. Do you feel any different when or after you meditate?

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## Image Attributions

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**Figure 6.15:** "Meditate" by RelaxingMusic (http://www.flickr.com/photos/83905817@N08/7676623576/in/photostream/) is licensed under CC BY-NC-SA 2.0 (http://creativecommons.org/licenses/by-nc-sa/2.0/deed.en_CA).

## 6.4 Chapter Summary

Consciousness is our subjective awareness of ourselves and our environment.

Consciousness is functional because we use it to reason logically, to plan activities, and to monitor our progress toward the goals we set for ourselves.

Consciousness has been central to many theories of psychology. Freud's personality theories differentiated between the unconscious and the conscious aspects of behaviour, and present-day psychologists distinguish between automatic (unconscious) and controlled (conscious) behaviours and between implicit (unconscious) and explicit (conscious) cognitive processes.

The French philosopher René Descartes (1596-1650) was a proponent of dualism, the idea that the mind, a nonmaterial entity, is separate from (although connected to) the physical body. In contrast to the dualists, psychologists believe the consciousness (and thus the mind) exists in the brain, not separate from it.

The behaviour of organisms is influenced by biological rhythms, including the daily circadian rhythms that guide the waking and sleeping cycle in many animals.

Sleep researchers have found that sleeping people undergo a fairly consistent pattern of sleep stages, each lasting about 90 minutes. Each of the sleep stages has its own distinct pattern of brain activity. Rapid eye movement (REM) accounts for about 25% of our total sleep time, during which we dream. Non-rapid eye movement (non-REM) sleep is a deep sleep characterized by very slow brain waves, and is further subdivided into three stages: N1, N2, and N3.

Sleep has a vital restorative function, and a prolonged lack of sleep results in increased anxiety, diminished performance, and, if severe and extended, even death. Sleep deprivation suppresses immune responses that fight off infection, and it can lead to obesity, hypertension, and memory impairment.

Some people suffer from sleep disorders, including insomnia, sleep apnea, narcolepsy, sleepwalking, and REM sleep behaviour disorder.

Freud believed that the primary function of dreams was wish fulfilment, and he differentiated between the manifest and latent content of dreams. Other theories of dreaming propose that we dream primarily to help with consolidation — the moving of information into long-term memory. The activation-synthesis theory of dreaming proposes that dreams are simply our brain's interpretation of the random firing of neurons in the brain stem.

Psychoactive drugs are chemicals that change our states of consciousness, and particularly our perceptions and moods. The use (especially in combination) of psychoactive drugs has the potential to create very negative side effects, including tolerance, dependence, withdrawal symptoms, and addiction.

Stimulants, including caffeine, nicotine, cocaine, and amphetamine, are psychoactive drugs that operate by blocking the reuptake of dopamine, norepinephrine, and serotonin in the synapses of the central nervous system (CNS). Some amphetamines, such as Ecstasy, have very low safety ratios and thus are highly dangerous.

Depressants, including alcohol, barbiturates, benzodiazepines, and toxic inhalants, reduce the activity of the CNS. They are widely used as prescription medicines to relieve pain, to lower heart rate and respiration, and as

anticonvulsants. Toxic inhalants are some of the most dangerous recreational drugs, with a safety index below 10, and their continued use may lead to permanent brain damage.

Opioids, including opium, morphine, heroin, and codeine, are chemicals that increase activity in opioid receptor neurons in the brain and in the digestive system, producing euphoria, analgesia, slower breathing, and constipation.

Hallucinogens, including cannabis, mescaline, and LSD, are psychoactive drugs that alter sensation and perception and which may create hallucinations.

Even when we know the potential costs of using drugs, we may engage in using them anyway because the rewards from using the drugs are occurring right now, whereas the potential costs are abstract and only in the future. And drugs are not the only things we enjoy or can abuse. It is normal to refer to the abuse of other behaviours, such as gambling, sex, overeating, and even overworking, as "addictions" to describe the overuse of pleasant stimuli.

Hypnosis is a trancelike state of consciousness, usually induced by a procedure known as hypnotic induction, which consists of heightened suggestibility, deep relaxation, and intense focus. Hypnosis also is frequently used to attempt to change unwanted behaviours, such as to reduce smoking, eating, and alcohol abuse.

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Meditation refers to techniques in which the individual focuses on something specific, such as an object, a word, or one's breathing, with the goal of ignoring external distractions. Meditation has a variety of positive health effects.