





phenomenon by examining it from many different perspectives. Suppose they want to understand how people experience music and are affected by it. The researchers will study many aspects of musical experience. They might examine, for instance, how musical preferences vary among individuals and across cultures, how music affects emotional states and thought processes, and even how the brain perceives sound as music rather than noise. Let's see how psychologists today might research this one topic in diverse ways across four levels of psychological analysis.

DIFFERENT LEVELS OF PSYCHOLOGICAL ANALYSIS Table 1.2 outlines the four broadly defined levels of analysis that reflect current approaches to investigating topics in psychology: biological, individual, social, and cultural.

The *biological level of analysis* deals with how the physical body influences our thoughts and behavior. The last three decades have seen tremendous growth in understanding the biological bases of mental activities. We now know that genes affect thoughts, actions, feelings, and disorders and that certain psychological processes are associated with activity in specific parts of the brain. Psychologists today who work at this level of analysis have shown that musical training changes brain structures associated with learning and memory (Herdener et al., 2010).

TABLE 1.2

Four Levels of Psychological Analysis

	LEVEL OF ANALYSIS	FOCUS	WHAT IS STUDIED?
	Biological	Brain systems	Neuroanatomy, animal research, brain imaging
		Neurochemistry	Neurotransmitters and hormones, animal studies, drug studies
		Genetics	Gene mechanisms, heritability, twin and adoption studies
	Individual	Individual differences	Personality, gender, developmental age groups, self-concept
		Perception and cognition	Thinking, decision making, language, attention, memory, vision
		Behavior	Observable actions, responses, physical movements
	Social	Interpersonal behavior	Groups, relationships, persuasion, influence, workplace interactions
		Social cognition	Attitudes, stereotypes, perceptions
	Cultural	Thoughts, actions, behaviors in different societies and cultural groups	Norms, beliefs, values, symbols, ethnicity

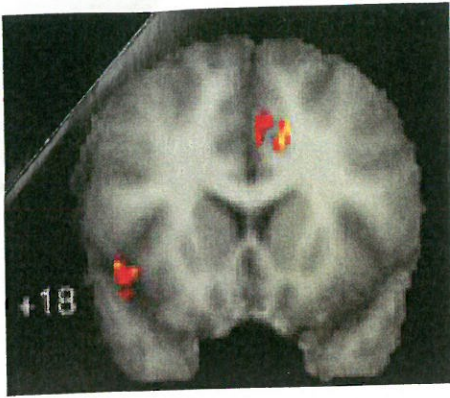


FIGURE 1.20

Your Brain on Music

Certain regions of the brain are associated more with organized sounds than with scrambled sounds. The highlighted region on the left becomes more active when you hear spoken language or music. Noise does not activate that region.

Listening to pleasant music increases activation of brain regions associated with positive experiences (Koelsch, Offermanns, & Franzke, 2010). And music appears to be treated by the brain as a special category of auditory information (**Figure 1.20**). One 35-year-old woman whose brain was damaged lost the ability to recognize even the most familiar tunes, although other aspects of her memory system and language system were intact (Peretz, 1996).

The *individual level of analysis* focuses on individual differences in personality and mental processes that affect perception and understanding. In the case of music, researchers who work at this level of analysis look for individual differences in music's effects on mood, memory, and decision making (Levitin, 2006). Have you ever had a bad romantic breakup and spent a lot of time listening to sad songs? Studies have shown that listening to certain types of music changes people's moods and makes their feelings more intense (Baumgartner, Lutz, Schmidt, & Jäncke, 2006). Indeed, young children listening to sad music tend to interpret a story negatively, and those listening to happy music tend to interpret a story more positively (Ziv & Goshen, 2006). Our expectations also shape how we experience music (Collins, Tillmann, Barrett, Delbé, & Janata, 2014).

Was there ever a time when you were sad and a friend dragged you to a party? In that situation or a similar one, what happened to your mood? The *social level of analysis* involves investigating how groups affect people's interactions and people's influence on each other. In studying the effects of music, researchers look at the types of music people prefer when in groups versus when they are alone. They also investigate whether certain types of music promote negative behaviors. For instance, certain types of rap music have been associated with violence and drug use (Miranda & Claes, 2004). Similarly, people who prefer heavy metal, punk, reggae, and techno music are more likely to use alcohol, drugs, and tobacco than are people who prefer pop or classical music (Mulder et al., 2009). However, listening to music with prosocial lyrics led participants to be more empathic and increased their helping behavior (Greitemeyer, 2009). Such associations do not mean that listening to music always *causes* these behaviors. Perhaps people who already behaved that way also developed those musical preferences.

The *cultural level of analysis* explores how people's thoughts, feelings, and actions are similar or different across cultures. **Culture** is made up of beliefs, values, rules, norms, and customs that people learn from one another when they share a common language or environment. If you have friends from other cultures, or if you listen to world music, you're aware that different cultures prefer different types of music (**Figure 1.21**). Part of the explanation may lie in the music itself. For instance, African music has rhythmic structures different from those in Western music (Agawu, 1995), which may be due to the important role of dancing and drumming in these cultures. Further, attitudes about people who are different from us can affect our perceptions of their musical styles. For example, societal attitudes toward rap and hip-hop music in the United States and United Kingdom revealed subtle prejudicial attitudes against blacks and a greater willingness to discriminate against them (Reyna, Brandt, & Viki, 2009).

As these examples show, when the research question calls for it, psychologists today investigate a question across different levels of analysis in an interconnected way. And conducting innovative research at several levels of analysis creates a broader understanding of both mental processes and behavior. Throughout this book, you will see how this multilevel approach has led to breakthroughs in psychological understanding. The Gestalt psychologists were right: The whole is different from the sum of its parts.

culture

The beliefs, values, rules, and customs that exist within a group of people who share a common language and environment and that are transmitted through learning from one generation to the next.