

## Cognitive Development

### LEARNING OUTCOMES

Describe Piaget's formal operational stage of cognitive development and provide examples of scientific thinking that use hypothetical-deductive reasoning.

Describe post-formal-operational thinking and provide examples of epistemic developments that reflect objectivist, subjectivist, and evaluativist theories of knowledge.

Explain the relationship between information-processing approaches and adolescent thinking.

Explain the relationship between sociocultural approaches and adolescent thinking.

How adolescents interpret and react to their changing bodies, as well as to their changing social life and relationships, is influenced by their developing intellectual abilities—that is, the ways in which they reason about themselves and their development and about the world around them. Indeed, some of the most fascinating developments of the adolescent period are those that concern the workings of the mind. When G. Stanley Hall argued that adolescents are the future of our species, he was thinking in particular of their newly acquired capacities for reasoning, planning, deciding, and imagining—intellectual ingredients that are essential to our species' proudest accomplishments, as well as to the individual's success in the world. As in earlier chapters, we look at various approaches to cognition—at Piaget's theory and then at information-processing and sociocultural approaches.

### Piaget's Theory of Formal Operations

It was Piaget's contention that changes in the way adolescents think about themselves, their personal relationships, and the nature of their society have a common source: the emergence of **formal operations** (Table 14.3, p. 500). An "operation" in Piaget's terminology is a mental action that fits into a logical system. Examples of *concrete operations*, typically achieved in middle childhood, include the mathematical operations of adding and subtracting as well as other logical operations, such as placing items in a serial order—say, from shortest to tallest. The concrete-operational child is able to apply operations to the real world. What distinguishes the formal-operational adolescent is the ability to apply operations to operations—that is, to systematically relate sets of relationships to each other. For this reason, formal operations are also called *second-order operations*. David Moshman provides the following illustration:

**formal operations**

this case) between two relations. A proportion, in other words, is a relation between two relations, a second-order relation. (Moshman, 1999, p. 13.)

**TABLE 14.3** Piaget's Stages of Cognitive Development: Formal Operational

Age (years)	Stage	Description	Characteristics and Examples
Birth to 2	Sensorimotor	Infants' achievements consist largely of coordinating their sensory perceptions and simple motor behaviors. As they move through the six substages of this period, infants come to recognize the existence of a world outside themselves and begin to interact with it in deliberate ways.	Formal-operational reasoning, in which each partial link in a chain of reasoning is related to the problem as a whole
2 to 6	Preoperational	Young children can represent reality to themselves through the use of symbols, including mental images, words, and gestures. Objects and events no longer have to be present to be thought about, but children often fail to distinguish their point of view from that of others, become easily captured by surface appearances, and are often confused about causal relationships.	<ul style="list-style-type: none"> <li>• Capacity to solve scientific problems by systematically testing all possible combinations</li> <li>• In forming a personal identity, taking into account how young people judge others, how others judge them, how they judge the judgment process of others, and how all this corresponds to social categories available in the culture</li> </ul>
6 to 12	Concrete operational	As they enter middle childhood, children become capable of mental operations, internalized actions that fit into a logical system. Operational thinking allows children to mentally combine, separate, order, and transform objects and actions. Such operations are considered concrete because they are carried out in the presence of the objects and events being thought about.	Application of formal-operational thinking to a wide variety of life's problems for young people
12 to 19	Formal operational	In adolescence, the developing person acquires the ability to think systematically about all logical relations within a problem. Adolescents display keen interest in abstract ideas and in the process of thinking itself.	<ul style="list-style-type: none"> <li>• In thinking about politics and law in terms of abstract principles and seeing the beneficial, rather than just the punitive, side of laws</li> <li>• Being interested in universal ethical principles and critical of adults' hypocrisies</li> </ul>

Formal-operational thinking is the kind of thinking needed by anyone who has to solve problems systematically. To give two examples from the adult world of work, the ability to use formal-operational thinking is needed by the owner of a gasoline station who, to make a profit, has to take into account the wholesale price of gasoline, the kinds of cus-

Formal-operational thinking is the kind of thinking needed by anyone who has to solve problems systematically. To give two examples from the adult world of work, the ability to use formal-operational thinking is needed by the owner of a gasoline station who, to make a profit, has to take into account the wholesale price of gasoline, the kinds of customers who pass by the station, the types of services the station needs to offer, the hours it needs to stay open, and the cost of labor, supplies, rent, and utilities; or by a lawyer who must consider a wide variety of alternative strategies, legal precedents, and possible consequences in deciding how best to present a case and counter the arguments of the attorney on the opposing side.



Nicholas K. Geranios/AP Images

New powers of reasoning and imagination emerging in adolescence no doubt contributed to Kira Powell's science project, which gained international attention. Her project involved lacing farmland in drought-stricken areas with a moisture-retaining material used in disposable diapers.

**SCIENTIFIC AND HYPOTHETICAL REASONING** INHELDER AND PIAGET'S STUDIES OF FORMAL-OPERATIONAL THINKING FOCUSED ON VERY BASIC VERSIONS OF THE KINDS OF PROBLEMS ENCOUNTERED IN SCIENTIFIC LABORATORIES. TYPICALLY, THESE PROBLEMS REQUIRE PARTICIPANTS TO HOLD ONE VARIABLE OF A COMPLEX SYSTEM CONSTANT WHILE SYSTEMATICALLY SEARCHING MENTALLY THROUGH ALL THE OTHER VARIABLES. TO ILLUSTRATE, SUPPOSE YOU REMEMBERED THE FIRST TWO DIGITS OF YOUR COMBINATION LOCK (2, 5) BUT COULD NOT REMEMBER THE LAST TWO. THUS, YOU NEED TO SOLVE THE PROBLEM: 2-5-X-Y, WHERE X AND Y ARE VARIABLES THAT CAN VARY FROM 0 TO 9. SOLVING THE PROBLEM WITHOUT FORMAL OPERATIONS, YOU MIGHT PLUG IN VALUES RANDOMLY, OR INSERT YOUR BROTHER'S AGE, THE NUMBER OF TIMES YOU HAVE BEEN LATE FOR CLASS, AND SO ON. THIS STRATEGY IS OBVIOUSLY FLAWED. FOR ONE THING, IT WOULD BE VERY DIFFICULT FOR YOU TO KEEP TRACK OF ALL YOUR PREVIOUS ENTRIES AND SEPARATE THE "TRIED" FROM THE "TO BE TRIED." A FORMAL-OPERATIONAL STRATEGY, ON THE OTHER HAND, WOULD SYSTEMATICALLY TEST EVERY POSSIBLE PAIR OF DIGITS—0-0, 0-1, 0-2 . . . 1-0, 1-1, 1-2 . . . ALL THE WAY THROUGH TO 9-0, 9-1 . . . 9-9, IF NECESSARY.

A central feature of scientific thinking is **hypothetical-deductive reasoning**, which involves the ability to judge an argument entirely on the basis of its logical form, regardless of whether the argument is true. Consider, for example, the following arguments (information from [Moshman, 2011](#)):

#### hypothetical-deductive reasoning

Reasoning that involves the ability to judge an argument entirely on the basis of its logical form, regardless of whether the argument is true.

### Argument 1

formation from [Moshman, 2011](#)):

### hypothetical-deductive reasoning

Reasoning that involves the ability to judge an argument entirely on the basis of its logical form, regardless of whether the argument is true.

#### *Argument 1*

First premise: Elephants are bigger than mice.

Second premise: Dogs are bigger than mice.

Conclusion: Therefore, elephants are bigger than dogs.

#### *Argument 2*

First premise: Mice are bigger than dogs.

Second premise: Dogs are bigger than elephants.

Conclusion: Therefore, mice are bigger than elephants.

Because all the statements in the first argument are true, the concrete-operational child will judge it to be more logical than the second argument, for which all of the statements are false. The formal-operational individual, on the other hand, will understand that the second argument is logical—that is, the conclusion follows from the premises—whereas the first argument is not. Correctly solving this task demonstrates the ability of formal thinkers to distinguish between truth and logic, an ability of vital importance in thinking beyond actual experience to consider and evaluate the possible.

In general, research finds a steady increase in logical reasoning between the 4th and 12th grades (roughly, between 10 and 18 years of age; [Markovits, 2014](#)). In fact, formal-deductive reasoning is very rare before 6th grade (11 to 12 years of age).

**VARIABILITY IN FORMAL-OPERATIONAL THINKING** CROSS-CULTURAL EVIDENCE THAT PEOPLE FAILED TO REACH FORMAL OPERATIONS WITHOUT EXTENSIVE SCHOOLING LED PIAGET TO CONCLUDE THAT THE STAGE OF FORMAL OPERATIONS IS NOT UNIVERSAL BUT, INSTEAD, DEPENDS ON CERTAIN TYPES OF EXPERIENCE. IN FACT, EVEN EXTENSIVE SCHOOLING DOES NOT GUARANTEE THE ATTAINMENT OF FORMAL OPERATIONS. FOR EXAMPLE, STUDIES FIND THAT AS FEW AS 30 TO 40 PERCENT OF WELL-EDUCATED AMERICANS IN THEIR LATE TEENS AND EARLY 20S ARE ABLE TO SOLVE THE COMBINATION-OF-LIQUIDS AND OTHER FORMAL-OPERATIONAL PROBLEMS ([MOSHMAN, 2013](#)). IN ADDITION, FORMAL OPERATIONS SHOW A HIGH DEGREE OF VARIABILITY WITHIN INDIVIDUALS; THAT IS, MANY INDIVIDUALS WHO ARE CAPABLE OF FORMAL-OPERATIONAL THOUGHT DO NOT EMPLOY FORMAL-OPERATIONAL STRATEGIES IN ALL SITUATIONS ([MARKOVITS & BARROUILLET, 2002](#)). THUS, A CAR MECHANIC WHO USES FORMAL-OPERATIONAL THOUGHT TO TROUBLESHOOT AN ENGINE PROBLEM MAY USE CONCRETE-OPERATIONAL THINKING IN MOST OTHER DOMAINS OF LIFE. INDEED, THERE IS MOUNTING EVIDENCE THAT MOST DECISIONS IN EVERYDAY CONTEXTS, WHETHER BY ADOLESCENTS OR ADULTS, DO NOT EMPLOY THE STRATEGIES OF FORMAL-OPERATIONAL THINKING ([KEATING, 2004](#); [KLACZYNSKI & COTTRELL, 2004](#); [KOKIS ET AL., 2002](#)).

**POST-FORMAL-OPERATIONAL THINKING** IN ADDITION TO QUESTIONING THE Pervasiveness of FORMAL-OPERATIONAL THINKING IN EVERYDAY CONTEXTS, RESEARCHERS HAVE ASKED WHETHER THERE MIGHT BE ADDITIONAL COGNITIVE DEVELOPMENTS THROUGH LATE ADOLESCENCE AND INTO EARLY, EMERGING ADULTHOOD. ONE OF THE MOST INTERESTING AND PRODUCTIVE AREAS OF RESEARCH TO ADDRESS THIS QUESTION HAS EXAMINED CHANGES IN HOW INDIVIDUALS REASON ABOUT THE NATURE OF KNOWLEDGE, KNOWN ALSO AS **EPISTEMIC DEVELOPMENT** ([MAGOLDA, 2008](#); [PERRY, 1970](#); [WEINSTOCK, 2015](#)). HOW DO YOU KNOW THAT SOMETHING IS TRUE, THAT IT CAN BE BELIEVED? WHAT MAKES ONE ARGUMENT PERSUASIVE AND ANOTHER SOUND LIKE SO MUCH POPPYCOCK? THE FOLLOWING EXAMPLES OF EPISTEMIC REASONING, WHICH WERE TAKEN FROM COLLEGE STUDENTS WHO WERE INTERVIEWED ABOUT THEIR EXPERIENCES IN SCHOOL, REFLECT THREE TYPES OF EPISTEMIC REASONING THAT REPRESENT VERY DIFFERENT VIEWS OF THE NATURE OF KNOWLEDGE ([PERRY, 1970](#)):

### epistemic development

Refers to changes in how individuals reason about the nature of knowledge.

1. I feel rather insecure thinking about these philosophical things all the time and not coming up with any defi-

**epistemic development**

Refers to changes in how individuals reason about the nature of knowledge.

1. I feel rather insecure thinking about these philosophical things all the time and not coming up with any definite answers. Definite answers are, well, they're sort of my foundation point. In physics you get definite answers to a point. Beyond that point you know there *are* definite answers, but you can't reach them (yet).
2. The instructor kept trying to force her ideas about the poem on us. . . . I mean, what makes her ideas any better than mine, anyway?
3. So here were all these theorists and theories and stuff—and hell, I said, “These are *games*, just *games* and everybody makes up their own rules! So it's gotta be bullshit.” But then I realized “What else have we got?” and now every time I get into a thing I set out to learn all its rules, 'cause that's the only way I can tell whether *I'm* talking bullshit.

The first example reflects an **objectivist theory of knowledge**—that is, a belief that knowledge involves an accumulation of objective facts and “definite answers.” In contrast, the second example reflects a **subjectivist theory of knowledge**, according to which there is no absolute truth because truth can change depending on one's perspective. Finally, the third example expresses an **evaluativist theory of knowledge**, in which it is recognized that although truth can change, it is nevertheless subject to particular standards of evaluation—the “rules of the game” (Hallett, Chandler, & Krettenauer, 2002; Weinstock, 2015).

**objectivist theory of knowledge**

A belief that knowledge involves an accumulation of objective facts and “definite answers.”

**subjectivist theory of knowledge**

A belief that there is no absolute truth because truth can change depending on one's perspective.

**evaluativist theory of knowledge**

A belief that although truth can change, it is nevertheless subject to particular standards of evaluation—the “rules of the game.”

Most studies of epistemic reasoning in late adolescence and early adulthood find that these three types of reasoning form a developmental hierarchy: An objectivist theory of knowledge emerges first, followed by a subjectivist theory, and then by an evaluativist theory. However, recent studies have found that cultural factors may influence epistemic development, with some cultures emphasizing one theory of knowledge over another (Hofer, 2008; Weinstock, 2015). Cultures that value tradition, for example, may believe that knowledge resides in, and is transmitted by, authority figures (worldly or spiritual), thereby tending to support the objectivist theory of knowledge. Other cultures, in contrast, may believe that knowledge must be evaluated in terms of scientific standards, thereby supporting the evaluativist theory of knowledge.

In light of the high degree of variability of formal-operational thinking both between and within cultures, as well as evidence that additional cognitive developments occur in late adolescence and early adulthood, modern researchers have argued that the study of advanced intellectual development should shift from focusing on a general stage of formal operations to looking at specific forms of reasoning associated with particular types of tasks and cultural practices.

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## Information-Processing Approaches

Whereas in the Piagetian view the advances in adolescents' cognition result from global, qualitative change, information-processing theorists believe that adolescents' expanded cognitive abilities are better explained as resulting from the continuing development of various cognitive structures and processes and the ability to control them. So, for example, information-processing approaches emphasize how adolescents' ability to think systematically arises from the increased capacity of their working memory and from their ability to apply more powerful problem-solving strategies with increasing reliability ([Markovits & Lortie-Forgues, 2011](#)). In problem solving, increased memory capacity makes it possible to coordinate several different factors at once, keep intermediate results in mind, and come up with a solution that is comprehensive and consistent.

Information-processing approaches also examine increasing abilities to control one's thoughts. As we first introduced in [Chapter 11 \(p. 394\)](#), *executive function* refers to cognitive skills that control and regulate one's cognitive processes in order to achieve particular goals—for example, inhibiting or resisting an impulsive or desirable behavior, such as going out to a party with friends, in order to go to the library to study for an important exam. Although executive functions are apparent in middle childhood, they expand considerably during the years of adolescence and are associated with the maturation of the brain ([Treit, Chen, Rasmussen, & Beaulieu, 2014](#); [Vara et al., 2014](#)). High levels of executive function in adolescence have been linked to academic achievement, whereas low levels have been linked to a number of problem behaviors, including eating disorders and risk-taking ([Kittel, Schmidt, & Hilbert, 2017](#); [Schiebener et al., 2015](#)).

Not surprisingly, developmentalists have been eager to identify factors that support or impede the development of executive function. An interesting example is **multitasking**, which involves attending and responding to multiple sources of information simultaneously, such as following a text stream on a phone while also watching a video. Needless to say, in this age when many adolescents are using multiple digital devices simultaneously, questions have emerged about the benefits of multitasking to the development of executive function. Does multitasking contribute to the development of executive function by providing practice in switching attention from one task to another? Perhaps counterintuitively—certainly counter to what many adolescents will claim when their parents urge them to put away the phone in order to better focus on their online homework—it does not. Instead, multitasking appears to interfere with attention, causing heightened distractibility and decreased performance on tasks ([Courage et al., 2015](#); [Moisala et al., 2016](#)). So put that phone away while you're studying—and driving!

### multitasking

Cognitive processes involving attending and responding to multiple sources of information simultaneously.

Whereas multitasking appears to interfere with executive function, another common adolescent behavior may provide benefits: action video game play ([Courage et al., 2015](#)). A number of studies suggest that action video game play has positive effects on attention, cognition, and motor control ([Bavelier & Green, 2016](#); [Cardoso-Leite, et al., 2016](#)). For instance, gamers, in contrast to non-gamers, are more able to control their attention and visually track moving objects. In light of evidence that gaming increases adolescents' cognitive strategies and skills, developmentalists and educators have questioned whether these skills may impact academic achievement. At this point, there is no clear consensus ([Blumberg, Altschuler, Almonte, & Mileaf, 2013](#)). Although gaming and schoolwork are similar in some respects—both involve solving difficult and benefit from practice—it remains unclear whether the strategies and skills developed through video game play are relevant to solving the sorts of problems that teens are likely to encounter in school. Some developmentalists, however, argue that gaming could be used to foster higher levels of student engagement in and learning of course material ([Morris et al., 2013](#)).

## Sociocultural Approaches

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## Sociocultural Approaches

Like information-processing theorists, developmentalists who examine adolescent thinking from a sociocultural perspective focus mainly on specific forms of thinking used in particular problem-solving situations. In addition, however, sociocultural theorists emphasize how the means of solving problems are influenced and guided by the social interactions of the participants (Rogoff, 2003; Subrahmanyam & Greenfield, 2008).

From a sociocultural perspective, games provide an ideal setting for exploring the development of complex reasoning skills in adolescence. As we discussed in [Chapter 13](#) (pp. 447–448), games typically include material and symbolic tools of culture, provide a means of transmitting cultural values and norms, and often involve quite sophisticated forms of reasoning. In addition, many games are highly social, requiring players to coordinate goals and strategies with each other. Using a Vygotskian sociocultural approach, Na'ilah Nasir has explored reasoning in the context of a game of strategy popular in many African American communities—dominoes (Nasir, 2005).



GoGo Images/AGE Fotostock

Sociocultural approaches focus on how social interactions, relationships, and cultural norms contribute to intellectual development and learning. It is likely that these boys, thoroughly engrossed in their books, receive a lot of support from family, teachers, and peers for excelling at school.

In the version of the game used in Nasir's study, pairs of individuals play in teams against one another. Each player selects 7 dominoes from the total set of 28 tiles placed facedown. The faces of the dominoes are divided into halves, each of which is embossed with 0 to 6 dots, or pips. Whoever draws the double-6 tile (the one with 6 pips in each half) places it faceup on the board, and the game begins. If the next player has a domino with 6 pips at one end, the player lays the 6 end against one side of the first domino. The game then proceeds with the players taking turns similarly "matching" their pips with those that have been laid down. If a match can't be made, the player must "pass." If, after a domino is played, the sum of all the end dominoes is a multiple of five, then the player receives those points; if the sum is not a multiple of five, no points are scored. Playing the game well involves scoring points by making the right sorts of matches (resulting in multiples of five), assisting one's partner to make matches, and blocking matches of opponents, thereby preventing them from scoring. (Successful blocking requires keeping track of the opponent's passes, which provide clues to the possible matches available.)

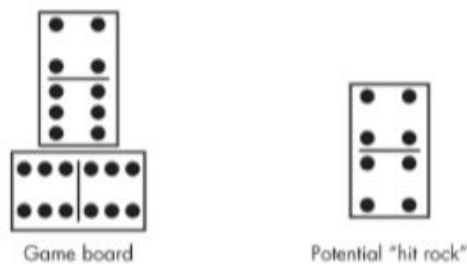
As you can see, dominoes can be a complexly strategic game involving the ability to calculate various point values associated with different possible moves, remembering earlier moves by partners and opponents, thinking hypothetically about possible future moves, and making inferences about how to help or hinder those possibilities through one's own game play. Nasir's analysis documents fascinating transformations in domino play from childhood to adolescence. As we would expect from Piagetian research, adolescents were much more adept at generating and evaluating the point value of possible moves—for themselves as well as for their partner and opponents—than were younger children, who were primarily concerned with the matching of ends. Likewise, adolescents were also much more skilled than younger children in using information about previous moves and passes to anticipate and make inferences about future possible moves of op-

a domino is played, the sum of all the end dominoes is a multiple of five, then the player receives those points; if the sum is not a multiple of five, no points are scored. Playing the game well involves scoring points by making the right sorts of matches (resulting in multiples of five), assisting one's partner to make matches, and blocking matches of opponents, thereby preventing them from scoring. (Successful blocking requires keeping track of the opponent's passes, which provide clues to the possible matches available.)

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David isn't sure which domino to play, so he holds one out towards his partner, Tyrell, saying, "Man, put that down there, dog." Tyrell says, "It goes right there!" and plays the domino for David.

Deondre begins the game by playing a double 6. Aaron, on the opposing team, follows with the 6-4 ([Figure 14.7](#)). Realizing that this move opens the possibility that Deondre's team can score 20 points by playing the 4-4 (known as the "hit rock"), Aaron's teammate, James, immediately criticizes this play by saying "What you doin' over there, man?" Deondre's teammate, Latrisha, chimes in, affirming James's criticism, "He lucky I ain't got the hit rock. I sho' would tax your butt." ([Nasir, 2005, pp. 13, 20.](#))



**Figure 14.7**  
Lightfoot/Cole/Cole, *The Development of Children*,  
8e, © 2018 Worth Publishers

**FIGURE 14.7** Popular in many African American communities, the game of dominoes calls on complex formal-operational reasoning skills.

From a Vygotskian perspective in which intellectual development is emphasized not as a solitary process but as one that emerges in the course of social participation, these types of social interactions are critical to the learning process. Whether responding to a peer's uncertainty (like David's) or mistake (like Aaron's), adolescents are often able to engage each other in new forms of thinking and acting. Just as social participation contributes to intellectual development, intellectual development, as we will see below, contributes to the adolescent's social participation by affecting moral reasoning and behavior.

## Moral Development

### LEARNING OUTCOMES

Apply Kohlberg's levels and stages of moral reasoning to moral development in adolescents.

Explain Gilligan's theory of moral reasoning as it relates to moral development during adolescence.

Point out some contributions of parents and peers in the moral development of adolescents.

Identify some cultural variations in moral development for adolescents around the world.

Regardless of their theoretical orientation, developmentalists agree that adolescence is a time during which issues of moral behavior take on special importance for young people, typified by such questions as What is right? What is wrong? What principles should I base my behavior on and use to judge the behavior of others? Evidence suggests that the processes used to think about such questions, like those used to think about science problems, undergo important changes between the ages of 12 and 19 years ([Moshman, 2011](#); [Nucci, 2016](#)).

### Kohlberg's Theory of Moral Reasoning

As we noted in [Chapter 13 \(pp. 447–450\)](#), the study of moral development has been greatly influenced by Lawrence Kohlberg, who proposed that moral reasoning may progress across three broad levels, each consisting of two stages ([Table 14.4](#) on [page 506](#) summarizes these levels and stages). As they develop from one stage to the next, children make more-complex analyses both of moral obligations among individuals and of moral obligations between individuals and their social groups.

**TABLE 14.4** Kohlberg's Six Moral Stages

Level and Stage	Doing Right	Doing Right: Reasons	Social Perspective
<b>Preconventional Level I</b>			
Stage 1—Heteronomous morality	<ul style="list-style-type: none"><li>• Conform to rules.</li><li>• Obey for the sake of obedience.</li><li>• Avoid causing</li></ul>	<ul style="list-style-type: none"><li>• Avoid punishment.</li><li>• Follow the power of higher author-</li></ul>	Egocentric point of view

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<b>Preconventional Level I</b>			
Stage 1—Heteronomous morality	<ul style="list-style-type: none"> <li>Conform to rules.</li> <li>Obey for the sake of obedience.</li> <li>Avoid causing physical harm to objects or people.</li> </ul>	<ul style="list-style-type: none"> <li>Avoid punishment.</li> <li>Follow the power of higher authority.</li> </ul>	Egocentric point of view
Stage 2—Instrumental morality	<ul style="list-style-type: none"> <li>Follow rules when in your best interest to do so.</li> <li>Act to serve your own interests and needs and allow others to do the same.</li> <li>Be fair, seen as an equal exchange.</li> </ul>	<ul style="list-style-type: none"> <li>Allow yourself and others to achieve interests and fulfill desires.</li> </ul>	Concrete individualistic perspective: right is relative, an equal exchange
<b>Conventional Level II</b>			
Stage 3—Good-child morality	<ul style="list-style-type: none"> <li>Live up to expectations of those who are close to you.</li> <li>Have good intentions and concern for others.</li> <li>Show trust, loyalty, respect, and gratitude—all fundamental to mutual relationships.</li> </ul>	<ul style="list-style-type: none"> <li>Be a good person according to your own and others' standards.</li> <li>Care for others.</li> <li>Believe in the Golden Rule.</li> <li>Desire to maintain rules that enforce good behavior.</li> </ul>	Perspective of the individual: sharing feelings, agreements, and expectations with others
Stage 4—Law-and-order morality	<ul style="list-style-type: none"> <li>Uphold the law.</li> </ul>	<ul style="list-style-type: none"> <li>Keep the community viable.</li> </ul>	Perspective of an individual in relationship to the social group: takes the point of view of the system that defines roles and rules

	<ul style="list-style-type: none"> <li>• Have good intentions and concern for others.</li> <li>• Show trust, loyalty, respect, and gratitude—all fundamental to mutual relationships.</li> </ul>	<p>dards.</p> <ul style="list-style-type: none"> <li>• Care for others.</li> <li>• Believe in the Golden Rule.</li> <li>• Desire to maintain rules that enforce good behavior.</li> </ul>	
Stage 4—Law and-order morality	<ul style="list-style-type: none"> <li>• Uphold the law.</li> </ul>	<ul style="list-style-type: none"> <li>• Keep the community viable.</li> </ul>	Perspective of an individual in relationship to the social group; takes the point of view of the system that defines roles and rules

**Postconventional, or Principled, Level III**

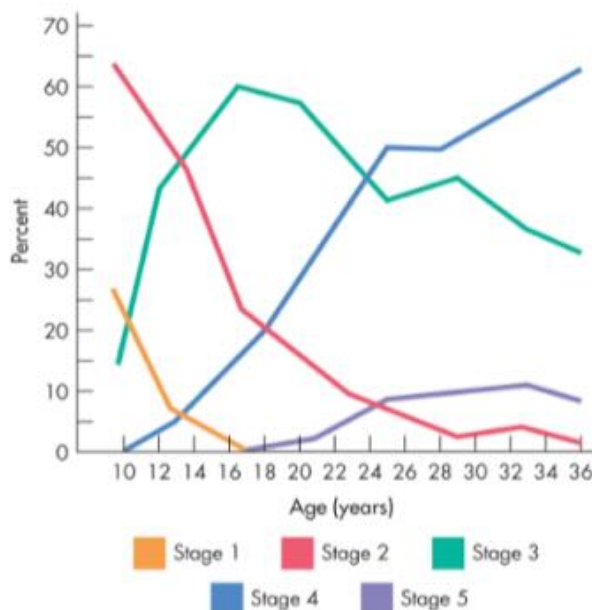
Stage 5—Social-contract reasoning	<ul style="list-style-type: none"> <li>• Be aware that people hold a variety of values and opinions, most of which are relative to the group that holds them.</li> <li>• Understand rules as a social contract, upheld in order to be impartial.</li> <li>• Let universal values and rights, such as life and freedom, take precedence over the majority opinion.</li> </ul>	<ul style="list-style-type: none"> <li>• Have a sense of obligation to the law because of a social contract to make and abide by laws for the welfare of all and for the protection of all people's rights.</li> <li>• Implement a freely chosen commitment to a contract, which results in feelings of obligation to others and your relationships with them.</li> <li>• Believe that laws and duties should be based on reasons of overall utility, "the greatest good for the greatest number."</li> </ul>	Prior-to-society perspective: perspective of a rational individual aware of values and rights prior to social attachments and contracts
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Stage 6—Universal ethical principles	<ul style="list-style-type: none"> <li>• Choose to follow universal principles of justice: human rights, equality, and respect for the dignity of each individual.</li> <li>• Evaluate laws or social agreements according to how well they exemplify such principles.</li> <li>• Let principles take priority over laws.</li> </ul>	<ul style="list-style-type: none"> <li>• Believe in the validity of universal moral principles.</li> <li>• Act with a sense of personal commitment to those principles.</li> </ul>	Perspective of a moral point of view from which social arrangements derive: understanding that rational individuals recognize the moral nature of actions, and that all individuals must be treated with equality, respect, and dignity
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Information from [Kohlberg, 1976](#).

Recall that, according to Kohlberg, at the start of middle childhood, moral reasoning is at the *preconventional level* (stages 1 and 2), with children judging the rightness or wrongness of actions purely in light of their own wants and fears. Toward the end of middle childhood, children attain the first stage of the *conventional level*, stage 3, in which they begin to make moral judgments in terms of their relationships with others, taking into account shared feelings, expectations, agreements, and standards of right and wrong, especially those shared with people whom they are close to (see [Chapter 13, p. 451](#)). Kohlberg called stage 3 reasoning “good-child morality” because he believed that for individuals in this stage, being moral means living up to the expectations of one’s family and other significant people in one’s life.

In adolescence, moral reasoning at stage 4, the second stage of the conventional level, begins to appear, although stage 3 remains the dominant mode of moral reasoning until people reach their mid-20s ([Figure 14.8](#); [Colby, Kohlberg, Gibbs, & Lieberman, 1983](#)). Reasoning at stage 4 is like that at stage 3 except that its focus—the social perspective from which judgments are made—shifts from relationships between individuals to relationships between the individual and the larger society. People who reason at stage 4 believe that society has legitimate authority over individuals, and they feel an obligation to accept its laws, customs, and standards of decent behavior. Moral behavior from this point of view is behavior that upholds the law, maintains the social order, and contributes to the group. For this reason, stage 4 reasoning is also called “law-and-order morality” ([Brown & Herrnstein, 1975, p. 289](#)).



Publishers  
Data from Colby et al., 1983.

**FIGURE 14.8** Mean percentage of U.S. citizens at each of Kohlberg's stages of moral reasoning at different ages.

Kohlberg believed that moral thinking at stages 3 and 4 depends on a partial ability to engage in formal-operational reasoning; specifically, it requires the ability to consider simultaneously the various existing factors relevant to moral choices (Kohlberg, 1984). People who are reasoning at stages 3 and 4, however, are still reasoning concretely insofar as they do not yet simultaneously consider all possible relevant factors or form abstract hypotheses about what is moral.

With the transition from stage 4 to stage 5 comes another basic shift in the level of moral judgment. Reasoning at the *postconventional* (or *principled*) level requires people to go beyond existing social conventions to consider more abstract principles of right and wrong. Reasoning at stage 5, called *social contract reasoning*, is based on the idea of a society as bound by a social contract designed and agreed upon by the group to serve the needs of its members. People still accept and value the social system, but instead of insisting on maintaining society as it is, they are open to democratic processes of change and continual exploration of possibilities for improving the existing social order. Recognizing that laws are sometimes in conflict with moral principles, they become creators as well as maintainers of laws. Kohlberg found that stage 5 moral reasoning never appears before early adulthood and then only rarely.



Spencer Platt/Getty Images

These protestors at the Stonewall Inn in New York City—a historical LGBTQ site—are protesting against the possible withdrawal of transgender protections.

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To reach stage 6 in Kohlberg's system, the stage of *universal ethical principles*, the individual must make moral judgments in accordance with ethical principles that he or she believes transcend the rules of individual societies—principles of the equality of human rights and respect for the dignity of human beings as individuals. From this perspective, laws are valid only insofar as they rest on these principles. Kohlberg and his colleagues failed to observe stage 6 reasoning in their research on moral dilemmas, and Kohlberg eventually concluded that this stage is more usefully thought of as a philosophical ideal than as a psychological reality. Nonetheless, there are examples of people who have put their lives at risk because of moral beliefs guided by stage 6 reasoning. Such was the case during World War II, when many European gentiles attempted to protect Jews from the Nazi efforts to exterminate them, even though being caught would have resulted in their own execution. According to Samuel [Oliner and Pearl Oliner \(1988\)](#), most of these individuals were motivated by ethical principles that they believed apply to all of humanity, the hallmark of stage 6 moral reasoning.

By and large, research confirms that children and adolescents progress through the sequence of moral reasoning proposed by Kohlberg ([Rest, Narvaez, Bebeau, & Thoma, 1999](#)). However, Kohlberg's approach is not without its difficulties ([Moshman, 2011](#); [Turiel, 2002](#)). Three important critiques address specific limitations associated with Kohlberg's theory.

Kohlberg's theory.

### Gilligan's Theory of Moral Reasoning

Since her car accident, Tara had been in a persistent vegetative state, kept alive by sophisticated medical machinery. Her case became headline news in Canada when doctors refused the request of Tara's family to disconnect her life-support system and allow Tara to die. Emotionally charged arguments emerged on both sides of the issue as the case went to court. Some insisted that acceding to the family's request would violate Tara's right to life; others insisted that failing to do so would violate her right to die with dignity. At one point in the hotly debated and highly publicized drama, the press interviewed Tara's older sister, Kim. "Everyone is talking about rights—the right to life; the right to die. It's become a big legal thing," said Kim. "But this isn't about rights at all. It's about my sister, and about our family, and how we take care of each other. I wish people could see that, and feel some compassion for what we're going through."

One of the most strident criticisms of Kohlberg's theory is that its conception of the nature of morality is too narrow. Taking a different approach to moral reasoning, Carol [Gilligan \(1982\)](#) asserted that Kohlberg's theory reflects a **morality of justice**—that is, a morality that emphasizes issues of rightness, fairness, and equality. As Kim illustrated in her comments to the press, the debate regarding her sister's right to life or right to die with dignity reflects a morality of justice orientation. However, from Gilligan's perspective on moral development, Kohlberg's emphasis on justice neglects a key dimension of moral reasoning and action that Gilligan termed the **morality of care**. This second dimension focuses on relationships, compassion, and social obligations—just the sort of issues that Kim said were being overlooked in the case of her sister.

#### **morality of justice**

A morality that emphasizes issues of rightness, fairness, and equality.

#### **morality of care**

A morality that stresses relationships, compassion, and social obligations.

Gilligan's work inspired a great deal of debate not be-

Gilligan's work inspired a great deal of debate not because of her conception of a morality of care but because of her claim, based on largely anecdotal evidence, that there is a gender difference in moral orientation, with girls and women being oriented to the morality of care and boys and men being oriented toward the morality of justice ([Moshman, 2011](#)). More systematic research, including a meta-analysis of 180 studies, has found few gender differences in moral reasoning ([Jaffe & Hyde, 2000](#); [Weisz & Black, 2003](#)). Despite the lack of evidence for strong gender differences, Gilligan's conception of a morality of care provides a broader, more inclusive view of moral reasoning than Kohlberg's original formulation and has helped orient researchers to the broader contexts of moral development and judgment ([Held, 2014](#)).

### Parent and Peer Contributions to Moral Development

Kohlberg maintained that parents have a minimal role in the moral development of their children and that peer interactions are essential to promoting moral growth ([Walker, Hennig, & Krettenauer, 2000](#)). This is due, he argued, to the differences in power inherent in the two types of relationships. Because children are under the unilateral authority of their parents, they are not inclined to try to understand their parents' point of view when it differs from their own or to negotiate and compromise on issues of disagreement.

Recently, however, developmentalists have challenged Kohlberg's idea that parents have little impact in the moral realm ([Augustine & Stifter, 2015](#); [Carlo et al., 2011](#)). Research finds that authoritative, democratic, responsive parenting is generally associated with higher levels of moral maturity in children. For instance, adolescents whose parents express disappointment—as opposed to love, withdrawal, or power assertion in response to their children's misbehavior—are more likely to describe themselves in terms of moral dimensions (“I am a kind person” or “I am a fair person”) rather than in non-moral terms (“I am smart” or “I am athletic”); [Patrick & Gibbs, 2012](#)).

Research also finds that peers can impact teens' moral reasoning. In one study, young adolescent best friends were videotaped as they discussed social dilemmas, such as whether to tell on a friend who had done something wrong or dangerous ([McDonald, Malti, Killen, & Rubin, 2014](#)). Best friends who reported that they were able to constructively resolve their own conflicts also engaged in

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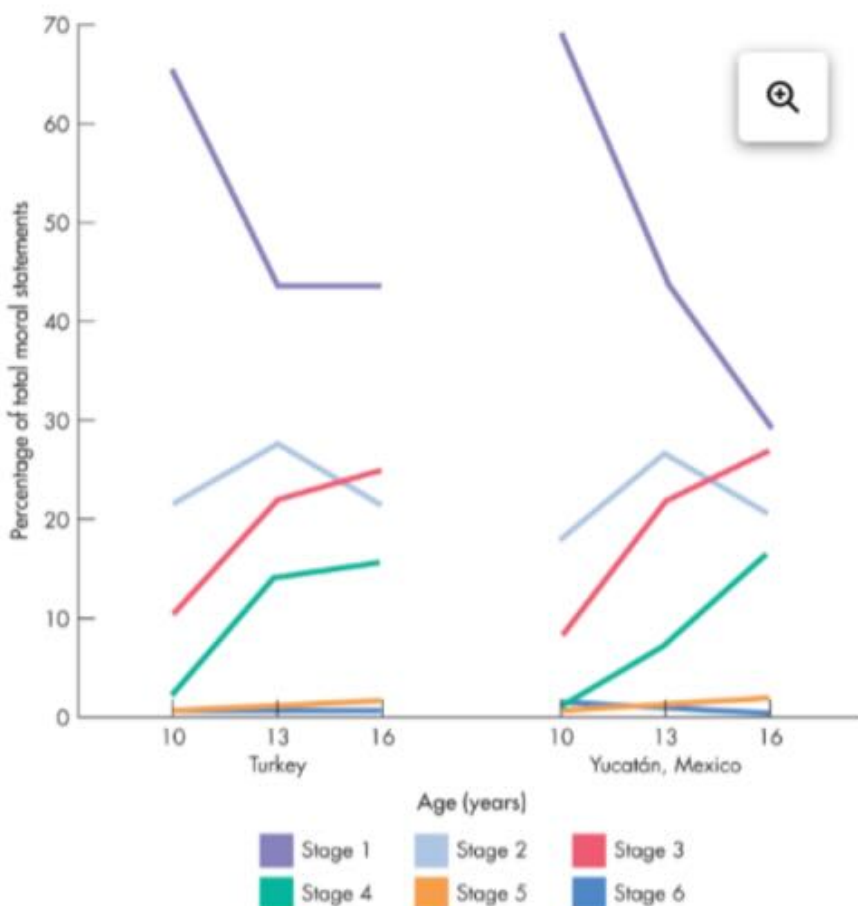
Research also finds that peers can impact teens' moral reasoning. In one study, young adolescent best friends were videotaped as they discussed social dilemmas, such as whether to tell on a friend who had done something wrong or dangerous ([McDonald, Malti, Killen, & Rubin, 2014](#)). Best friends who reported that they were able to constructively resolve their own conflicts also engaged in more moral reasoning in discussing the social dilemmas. The upshot of this research is that both parent and peer relationships were highly influential in moral development and reasoning, but each type of relationship contributes in distinctive ways.

## Cultural Variations in Moral Reasoning

Like studies showing cross-cultural variability in formal-operational reasoning, studies using Kohlbergian dilemmas

## Cultural Variations in Moral Reasoning

Like studies showing cross-cultural variability in formal-operational reasoning, studies using Kohlbergian dilemmas (such as the Heinz dilemma) reveal significant differences between cultural groups in moral reasoning ([Sachdeva, Singh, & Medin, 2011](#); [Turiel, 2008b](#)). Although there are some exceptions ([Shweder, Mahapatra, & Miller, 1987](#)), most studies show that people who live in relatively small, technologically unsophisticated communities have primarily face-to-face interactions with others and have not received extensive schooling that exposes them to ways of life other than their own rarely reason beyond stage 3 on Kohlberg's scale ([Figure 14.9](#)). Furthermore, social relationships in these communities may be strongly hierarchical in nature throughout life, providing little opportunity for the sort of equality of power that Kohlberg argued is essential to moral development ([Eberhardt, 2014](#)).



**Figure 14.9**

Lightfoot/Cole/Cole, *The Development of Children*, 8e, © 2018 Worth Publishers  
Data from Kohlberg, 1969.

**FIGURE 14.9** This figure reflects trends in the moral judgments of boys in small, isolated villages in two nations. Note the continuing high incidence of stage 1 responses even by 16-year-olds.

Kohlberg suggested that cultural differences in social stimulation produce differences in moral reasoning. However, several developmentalists have argued that Kohlberg's stage sequence, particularly in the higher stages, contains built-in value judgments that reflect the moral views of Western culture and democracy. Are we really to believe, such critics ask, that people who grow up in a traditional village in a developing country and reason at stage 2 of Kohlberg's sequence are less moral than the residents of a city in a more developed country ([Shweder, Minow, & Markus, 2002](#))?

[Kohlberg \(1984\)](#) denied that cultural differences in performance on his dilemmas lead to the conclusion that some societies are more moral than others. He echoed the classical position of modern anthropology that cultures should be thought of as unique configurations of beliefs and institutions that help the social group adapt to both local conditions and universal aspects of life ([Eberhardt, 2014](#)). In this view, a culture in which stage 3 is the height of moral reasoning would be considered "morally equivalent" to a culture in which some people reason at stage 5 or 6, even though the specific reasoning practices could be scored as less "developed" according to Kohlberg's criteria.

Nevertheless, other approaches to moral reasoning have produced results that depart markedly from those obtained using Kohlberg's methods. Cross-cultural studies have reported that by adulthood, a shift from conventional to post-conventional moral reasoning is quite widespread if not universal ([Gielen & Markoulis, 2001](#)). For example, using their *social domain theory*, which emphasizes the need to separate moral issues from issues involving social convention and personal choice (see [Chapter 13, pp. 451–452](#)), Elliot Turiel and his colleagues also provide evidence that the pattern of development for moral reasoning, defined in terms of justice and rights, is universal across cultures. The areas in which cultural differences *do* appear tend to be those related to social conventions and personal choice, the importance of obedience to authority, and the nature of interpersonal relationships ([Turiel, 2002](#); [Wainryb, 1995](#)).

An extensive study by Cecilia Wainryb provides an excellent example of how moral reasoning is culturally universal while reasoning in other social domains is culturally specific. Wainryb compared judgments about social conflicts given by a large sample of Israeli 9- to 17-year-olds. Half the

An extensive study by Cecilia Wainryb provides an excellent example of how moral reasoning is culturally universal while reasoning in other social domains is culturally specific. Wainryb compared judgments about social conflicts given by a large sample of Israeli 9- to 17-year-olds. Half the participants were Jews from a secular, Westernized part of the Israeli population. The other half were from Druze Arabic villages, where the cultural norms emphasize hierarchical family structures, fixed social roles, and severe punishment for violating traditional duties and customs. The study pitted questions about justice and personal choice against questions about authority and interpersonal considerations.

Wainryb found no cultural or age differences in response to questions involving justice. For example, an overwhelming percentage of participants at all ages said that a boy who saw someone lose money should return it, even though the boy's father said to keep the money—a conflict with authority. Jewish children were slightly more likely than Druze children to choose personal considerations over interpersonal considerations, but the variability within each cultural group was far larger than the variation between them. The only really significant cultural difference was that Jewish children were much more likely than Druze children to assert personal rights over authority—a result in line with the hierarchical family structure in Druze culture, in which obedience to authority is a central value.

In a similar vein, Joan Miller and her colleagues found that while people from India and the United States may differ in where they draw the line between moral infractions and personal conventions, members of both groups distinguish between the two ([Miller & Schaberg, 2003](#)). For example, people from India and the United States judged the violation of dress codes in terms of social conventions, not moral issues; and members of both societies judged theft to be a moral issue, not a matter of social convention. These studies suggest that by dividing up questions of morality into separate domains, it is possible to obtain a subtler picture of cultural influences on moral reasoning in which there are both universal and culture-specific elements.

## The Relationship Between Moral Reasoning and Moral Action

At some points in your life, you have probably acted in ways

morality into separate domains, it is possible to obtain a subtler picture of cultural influences on moral reasoning in which there are both universal and culture-specific elements.

## The Relationship Between Moral Reasoning and Moral Action

At some points in your life, you have probably acted in ways that violated your moral principles; you may have lied to your parents, cheated on an exam, betrayed a friend's confidence, or stolen someone's property. In adolescence (as in childhood; see [Chapter 13, pp. 446–451](#)), the links between moral reasoning and moral action are not particularly close, prompting developmentalists to examine factors that contribute to the variability in moral behavior—that is, why young people sometimes make moral choices in accordance with their moral principles and sometimes do not ([Nucci, 2016](#)).



snapphoto/Getty Images

According to a 2009 national survey, over one-third of adolescents admitted to having used their cell phone to cheat on tests and about one-quarter of those surveyed didn't think there was anything wrong in such behavior.

In some cases, societal standards and expectations contribute to variability in moral behavior. For example, studies of cheating among U.S. school students generally find that

In some cases, societal standards and expectations contribute to variability in moral behavior. For example, studies of cheating among U.S. school students generally find that it is widespread and is heavily influenced by school norms and the attitudes of teachers and friends ([Galloway, 2012](#); [Lucifora & Tonello, 2015](#)). High school students seem to be less guilt-stricken than college students and more apt to blame others—schools, teachers, and society—for their dishonesty ([Anderman & Murdock, 2007](#)). As a participant in Donald McCabe’s study explained, one reason that cheating is common is because there is no threat of being caught:

I don’t know if it’s just our school, but like everybody cheats. . . . And the teachers don’t care. . . . The students keep on doing it because they don’t get in trouble. ([McCabe, 1999](#), p. 683.)

However, even in the absence of an obvious deterrent, some students expressed ambivalence about their behavior, suggesting that although initial cheating may result in feelings of guilt, repeated cheating becomes easier over time. However, cheating takes its toll in ways that can be easily discerned by students. One student claimed that he was at a point where “I don’t know nothing. . . . If I don’t cheat, I just fail” ([McCabe, 1999](#), p. 682).

A factor that helps adolescents to act morally is their increasing ability to understand the plight of others and to reason prosocially ([Carpendale, Hammond, & Lewis, 2010](#); [Peter, Tasker, & Horn, 2016](#)). One study found, for example, that teens were significantly less likely to engage in sexual and gender-based harassment when they believed that such behaviors caused harm to the victims; in contrast, knowing that harassment violated school policies had no impact on the likelihood of teens engaging in harassment ([Peter et al., 2016](#)). And as we will discuss in [Chapter 15](#), moral behavior is also tied to identity issues and the degree to which individuals are motivated to lead exemplary moral lives.

Yet another way to examine the relationship between moral reasoning and behavior is to approach it from the perspective of social domain theory. In the same way that

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Yet another way to examine the relationship between moral reasoning and behavior is to approach it from the perspective of social domain theory. In the same way that this theory has proved useful in accounting for cross-cultural variability in moral reasoning, it provides insight into the relationship between adolescents' moral reasoning and their moral actions. In particular, the behaviors that researchers (and parents, as we discuss in [Chapter 15](#)) define as "moral" may not be defined as such by adolescents. An example comes from a study of the relationship between moral reasoning and risky behavior. Tara [Kuther and Ann Higgins-D'Alessandro \(2000\)](#) found that, compared with adolescents who report lower levels of drugs and alcohol use, those who report higher levels are more likely to see their risky behaviors as personal decisions rather than as moral or conventional decisions. The researchers suggested that directors of drug and alcohol intervention programs take heed of this tendency and encourage youth to explore their views of the personal-choice, social convention, and moral realms and examine their behavior in light of each realm.

### **APPLY > CONNECT > DISCUSS**

Suppose you want to facilitate moral development in juvenile delinquents participating in a counseling program. How would you go about this from a Kohlbergian perspective? How would you do this from the perspective of social domain theory? In each case, consider whether your intervention programs would be most effective if carried out with teens individually or in family or peer groups.