

CHAPTER FOUR

Piaget and Power Rangers

What Can Theories of Developmental Psychology Tell Us about Children and Media?

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There is now a growing body of evidence detailing how people use different forms of media, and how the media—primarily television, films, and video games—are likely to affect them. Much of this research shows that children of different ages use and are affected by the media differently (Dorr, 1986; Kundanis, 2003; Van Evra, 2004). Theories of developmental psychology can help us interpret this evidence by identifying the potential mechanisms explaining why those effects may occur, and by guiding our predictions about which children are most at risk for specific effects. They also help to explain how children make sense of media content, and how their understanding of the media changes with age. Finally, in the absence of a credible mechanism or theoretical explanation for how two variables are related, developmental theories can help to separate real causal relationships from spurious ones.

Generally speaking, developmental theories can be organized into three main categories: those that emphasize the development of acquired *behaviors*, those that emphasize the development of *cognition* (that is, attention, learning, memory, understanding, and judgments), and those that emphasize the development of *personality and emotions* (including the psychoanalytic theories of Freud and Erikson). Other theories that are typically part of a devel-

opmental approach include *neurobiology* theories (emphasizing brain functioning and responses), and *ecological* theories (emphasizing the multiple and interactive environments in which a child develops and functions).

Which theoretical approach you use to explain a given set of data or observations depends partly on your own view of human development and partly on the nature of the question under consideration. Theories differ in their emphasis on cognition, for example. If you are interested in how children understand (or misunderstand) what they see on television, then all of the cognitive theories will be very applicable to that question; many other theories (for example, behaviorism or Freud's psychosexual theory) have little to say about thinking or understanding. In addition, some developmental theories describe qualitative changes that occur during specific and predictable stages of development (for example, Piaget's theory), whereas others portray a more gradual process of changes that occur with age (for example, social learning and information-processing theories). Finally, some theories emphasize the importance of innate, biological, or unconscious influences ("nature"), while others stress the importance of environmental influences ("nurture"); the latter are more useful for studying children and media.

Theories and Learning

One of the key issues of interest in the study of children and media has to do with learning—how do children learn a given behavior, idea, or piece of information, and what factors play a role in whether a given child *will be likely* to learn something from a particular media example? Generally speaking, there are four basic ways in which children can learn, and a "key issue" that affects the likelihood of learning for each.

- 1 *Direct experience*. This reflects learning through *operant conditioning*, where the child actually has to *do* the behavior. If they are rewarded (reinforced), then they should be more likely to repeat the behavior again; if they are punished, then they should be *less* likely to repeat the behavior again. The key issue has to do with the nature of the reward or punishment—what will work for this particular individual? Effective reinforcers for young children are usually different from those that work for older children or teens. For example, young children are likely to be heavily influenced by praise or criticism from their parents and other family members, while teens might be more heavily influenced by feedback from their peers.
- 2 *Observational learning*. This involves learning by watching someone else do the behavior and then imitating them (or deciding *not* to imitate that behavior because of the consequences experienced by that person). Here the key issue involves the extent to which you identify with the person observed, see yourself as similar to them, and/or want to be like them. Again, this is likely to vary for children of different ages (and different genders); younger children typically identify with and look up to their same-sex parents and older siblings, while teens often model their behavior after peers and figures from popular culture.

- 3 *Symbolic learning.* For older children, adolescents, and adults, most of our learning comes through written or spoken language; we are often told to-do (or not to do) something, and why. The key issue in this case has to do with the credibility of the source: How much do you trust them or believe that they are telling the truth?
- 4 *Cognitive learning.* In this case learning is based on information that the child already has and his or her overall understanding of the issues involved. With cognitive learning, there are a number of key issues that come into play, including developmental age, cognitive ability, and prior information available.

How do these four ways of learning relate to children and media? Learning through direct experience has only limited application, because the media don't directly reinforce (reward or punish) children for their behaviors. However, positive or negative responses from parents and/or peers to something a child does (or says) after learning it on TV might well influence the likelihood that the child will do (or say) that again. Children are also likely to draw conclusions about what they see on television, depending on whether the characters are rewarded or punished for their actions; numerous content analyses have noted that violent actions often go unpunished and are sometimes even rewarded, making it more likely for children to conclude that aggression is a good thing (Bushman & Huesmann, 2001). And of course parents may also, intentionally or unintentionally, reward certain kinds of media use (for example, reading) and punish or set restrictions on other kinds (TV or video games).

Observational learning easily applies to the influence of media on children and is discussed in the section on social learning theories below. Symbolic learning and cognitive learning also apply, especially with respect to children's use of media for information (for example, *Sesame Street*, the news, or the Internet) and to developmental differences in children's interpretation of media messages and their understanding of the media in general. These are both important mediators in media effects and are discussed in the sections on cognitive-developmental theories and information processing theories below.

Social Learning (Social Cognitive) Theories

Developed by Albert Bandura, *social learning theory* was initially grounded in traditional behavioral theories, emphasizing behaviors that children could and would imitate from observing role models in their social environment and a gradual, continuous process of developmental change (Bandura, 1977). Unlike traditional behaviorist theorists, however, Bandura believed that behavior was due to more than just the influence of the environment; it also reflected children's observations and interpretations of what they saw and who they identified with most strongly. Social learning theory predicts that children are more likely to imitate people they admire, those who are rewarded for their actions, and so on.

Over time, Bandura has increasingly emphasized the importance of cognition, including the roles of individual choice, personality, and interpretation in determining a person's

modeled behaviors. His approach is now called *social cognitive theory* (Bandura, 2002), and while it is not a stage theory of development (like Piaget's, which is described in the next section), it does include the concept that social cognitive processes change with age. The role models for young children are not the same as those for adolescents, and while young children often directly and immediately imitate what they see, adolescents and adults are more likely to observe and remember a given behavior that can be demonstrated later if the appropriate situation arises. Both children and adults may also learn what *not* to do from observing the behaviors of others, especially by paying attention to the consequences of their actions in the situation observed.

Before television and movies, children's role models were limited to people they saw in their everyday lives (parents, older siblings, other family members, people in the neighborhood, teachers, and so on). Now television and other audiovisual media provide a wide range of exciting and intriguing role models for children and teens, including real people, characters who are played by live actors, cartoon characters, and superheroes like the Power Rangers. Once television became part of children's daily lives, the potential for social cognitive learning through observation and imitation of the behaviors of others skyrocketed.

But *would* children imitate mediated portrayals of behaviors in the same way they did behaviors they saw performed by real people in their own world? Bandura's earliest and most famous series of studies on this topic (Bandura et al., 1963) demonstrated that they could and would imitate specific aggressive behaviors shown on television (for example, kicking a bobo doll) as much as they would for live people, and that their imitation of a "cartoon" character (in this case, a person dressed as a cat) was almost as high as imitation of a real person. This is a particularly important finding, given children's frequent viewing of cartoons, and it has been supported by subsequent studies of imitation of cartoon violence (Bushman & Huesmann, 2001). (For complete discussions of children and media violence, see chapters 8 and 9.)

Social cognitive theory would also predict that children will learn prosocial behaviors from viewing media portrayals as well as antisocial behaviors, and indeed that is supported by research (Dorr et al., 2002). It also means that children may learn what *not* to do from cartoons and other fictional TV programs. However, such learning may only be effective if there are realistic consequences shown for an action; if the Coyote is fine again after falling off a cliff or being hit on the head with an anvil on the Road Runner cartoons, then children may well be drawing inaccurate conclusions about what they have observed.

An important tenet of social cognitive theory involves the relationship between the observer (child) and the observed (media character), especially the extent to which the child identifies with the character and sees him or her as a role model. By the age of three or four, children have developed gender awareness and gender constancy (that is, understanding that gender is permanent regardless of changes in hair, clothing, or activities), after which gender will be an important mediator of social cognitive learning. Research has shown that boys are much more likely to choose role models who are male (especially powerful ones), while girls are more likely to select both male and female role models (Anderson & Cavallaro, 2002). The same studies have found that African-American and White children

were most likely to pick role models of the same race as themselves, while Latino and Asian-American children were most likely to pick White role models (possibly because there are fewer portrayals of Latino and Asian characters on children's television).

Cognitive-Developmental Theories

While Swiss psychologist Jean Piaget actually died long before *The Mighty Morphin Power Rangers* debuted in 1993, his *cognitive-developmental theory* has important applications for the study of children's understanding of media, especially regarding the limitations in cognitive reasoning abilities of young children. Piaget's theory argues that children actively construct their understanding of the world through the ongoing processes of *assimilation* (incorporating new information into existing knowledge) and *accommodation* (reorganizing ways of understanding to take into account new information) (Flavell, 1963).

Unlike social cognitive theory, cognitive-developmental theories describe children's development as occurring in a series of stages, with dramatic and abrupt shifts in the quality of children's thinking as they move from one stage to the next. As children develop, their understanding of the world doesn't just gradually improve; it is qualitatively *different* at different ages. Piaget believed that this process unfolded naturally, and that all children proceed through these stages in the same order and at roughly the same ages. While his approach reflects many biological concepts of maturation, he did not believe that cognitive development was genetically based, occurring on a predetermined timeline that is wired into the human brain; instead he emphasized the child's own role in developing cognitive *schemes* (ways of knowing or action patterns) by actively exploring, manipulating, and making sense of his or her environment (Crain, 2000).

While Piaget himself wrote primarily about children's developmental stages in terms of understanding the *physical* world, his theory can also be applied to the understanding of *social* information provided by the media, and predictable age differences in children's interpretations of media content. Piagetian theory includes four stages of cognitive development that always occur in the same sequence (Singer & Revenson, 1996), although the age at which children move from one stage to the next may vary:

- 1 The *sensori-motor stage* (birth to two years), in which infants and toddlers get information through their senses and manipulation of objects; by age two, children have developed an internal representation of schemes including the capability for deferred imitation, an understanding of object permanence, basic grasp of cause and effect, the beginnings of language, and self-awareness.
- 2 The *preoperational stage* (two to seven years), during which there is rapid growth and reorganization of understanding and symbolic thought, but the child's thinking is illogical and his or her approach to problem-solving is unsystematic; during the early part of this stage, the child's thinking is often *egocentric* (marked by an inability to take into account other perspectives than his or her own) and *animistic*

(attributing human motivation and characteristics to inanimate objects), the child's judgments reflect *centration* (focusing on one central characteristic of an object or person to the exclusion of others), and the child has difficulty distinguishing between fantasy and reality; even after age four, children typically base their conclusions on intuitive rather than logical thought.

- 3 The *concrete operational stage* (seven to twelve years), in which children can demonstrate the ability to mentally manipulate objects and are able to take into account more than one dimension of an object and perspectives of it, but are still limited to applying this understanding to concrete (rather than abstract) examples.
- 4 The *formal operational stage* (twelve years and older), in which most adolescents can demonstrate abstract thinking, hypothetical-deductive reasoning, and systematic approaches to problem-solving.

Most of the media research using a Piagetian framework has focused on the cognitive limitations of preoperational thinking, especially for children under the age of four or five who have a difficult time fully grasping the nature of television and its content. One study showed that two- and three-year-old children often believe that the TV characters lived inside the TV set (Noble, 1975), while another found that three-year-old children interpreted a television image of a glass of water as more similar to real life (where the water would spill out if you turned it upside down) than to a photograph of a glass of water (where it wouldn't) (Flavell et al., 1990).

Research on children's understanding of fantasy versus reality shows that while children as young as two or three can both engage in fantasy play and understand that it is only pretense, they are much more confused by whether something is real or only fiction on television (Davies, 1997). This has been explored in a number of important realms, including children's consumer behavior (Valkenburg & Cantor, 2001) and the impact of media violence (Comstock & Paik, 1991). Research on media and children's fears shows that young children are most afraid of characters and scenes that *look scary* (like monsters and witches), while older children are more afraid of realistic scenes and situations (portraying things that could actually happen) (Cantor, 2001).

Other preoperational limitations are reflected in the study of children's *theory of mind*, their understanding of their own mental processes and those of other people (Flavell et al., 1995; Flavell, 2004). Preschoolers tend to believe that other people know and see what they know, and have difficulty understanding concepts like *false beliefs* (believing something that is not actually true) or *dreams* (which are often believed to be real). They also have difficulty with what is known as the *appearance-reality distinction* (understanding the difference between what something seems to be and what it actually is. It is not surprising, then, that young children may be confused by media storylines that emphasize different characters' understanding of something that happened, or include characters who appear to be good (or look nice on the outside) but are really bad, and vice versa.

Piaget also proposed stages of moral reasoning that are relevant to the understanding of media effects (Crain, 2000). During the preoperational stage, children's reasoning

reflects moral *heteronomy*, which is grounded in blind adherence to rules that are immutable, a sense of immanent justice (that is, that wrong-doers will always be caught and punished), and judgments of right and wrong that focus on the consequences of the action. Older children, especially after the age of ten, exhibit moral *autonomy*; they understand that rules can be changed and that wrong-doers might not be discovered, and base moral judgments more on the individual's *intentions* rather than the consequences of the action. Young children, then, may easily misinterpret the moral lessons found in media stories that are centered on judgments about an actor's intentions, or when someone breaks the rules in order to achieve a more positive and just outcome.

Information Processing

Information-processing theories focus on the processes of memory and attention (using a computer-based model of data input, output, and storage), and while they do not predict unique ways of processing information by children of different ages, developmental studies have shown that younger children do attend to and remember information differently than older children. For example, young children are less likely to pay attention to the central or important information, and instead will often attend to irrelevant or idiosyncratic aspects of a situation (Santrock, 2006). They are also less likely to be able to recall detailed information about something they have been taught or experienced.

Studies of children's attention to and comprehension of television confirm the importance of these developmental limitations (for example, Anderson & Burns, 1991; Collins, 1981). Young children often miss the salient information that's important for the story to make sense and may recall only unrelated pieces of information that were interesting to them rather than the main points of the story. They are also more likely to attend to unusual auditory or visual features (for example, special visual effects, funny voices, sound effects) even when they are unrelated to the main story.

Information-processing theories also emphasize the importance of information that is already available to the individual (from learning and prior experience) as a mediator of understanding and interpretation; using the computer model, an individual can only process information in the context of information he or she already has stored. Interpretation of a TV storyline, then, will be influenced by *explicit knowledge*: what the child already knows about the common structure of stories, the "formal features" of television (that is, the meaning of special visual or auditory effects), and the characters in the program. It will also be influenced by the child's *implicit knowledge*: knowledge about the real world and inferences drawn about interscene relationships and character motivations. It is this latter category that often puts children at a disadvantage (Collins, 1981; Condry, 1989).

Information processing also helps to explain how children develop beliefs and ideas (including erroneous ones) about a topic. Their beliefs are likely to be based on inaccurate sources such as advertising or fictional media stories; children are less likely to question fictional stories because they don't have the training or real-world knowledge to judge

their credibility. This is similar to cultivation theory in communications (Gerbner et al., 1994), which predicts that heavy viewers who "mainstream" themselves into the world of television are more likely to incorporate information from television (even fictional television) into their beliefs about the real world. (See chapter 10 for a thorough explanation of cultivation theory and research.) It is also reflective of cognitive script theory (Valkenburg, 2004), which deals with the ways children develop expectations about how to act in certain situations based on "scripts" they have seen in real life and the media.

In the context of gender development, information processing is reflected in gender schema theory emphasizing children's organization of information and perceptions about the categories of male and female based on sociocultural standards and stereotypes (Martin & Ruble, 2004), including those reflected in the media. Research shows that children's TV programs continue to portray stereotypical gender roles, especially with respect to appearance, relationships, and occupations (Signorielli, 2001).

Information-processing theory also helps to explain children's learning of educational content from television. Some children's television producers, such as Sesame Workshop, carefully base their program content on research about children's learning. The importance of reinforcing concepts and understanding by using explicit and concrete examples with sufficient repetition, for example, has been demonstrated by research on the effectiveness of programs like *Sesame Street* (Fisch & Truglio, 2001). (Refer to chapter 12 for a look at educational television.) These same techniques are beginning to be used in media literacy curricula aimed at improving children's understanding of the purpose of TV commercials and misleading messages about nutrition (Scheibe et al., 2005). (See chapter 13 for a discussion of media literacy.)

Other Developmental Theories

There are a number of other developmental theories that have been applied to the study of children and media, including *psychoanalytic theories* linking media influences to personality development (Aschbach, 1994), identity (Huntemann & Morgan, 2001), and fantasy play (Bettleheim, 1976). Urie Bronfenbrenner's (2000) *ecological theory* emphasizes the concentric "systems" in which children develop; television could be considered part of both the microsystem (early and immediate influences in the home) and the broader macrosystem (culture in which a child develops). Recent *neurobiology theories* have begun to be applied to research on brain responses to media violence (Murray, 2001), and some theorists have speculated that there may be a "sensitive period" during which the effects of media violence are most powerful (Eron & Huesmann, 1986). (See chapter 9 for an explanation of this line of research.)

Lev Vygotsky's *sociocultural-cognitive theory* has not really been applied to studies of children and media, despite its emphasis on how social interaction and culture combine to influence children's learning and development (Crain, 2000). His concepts of scaffolding and a "zone of proximal development" (within which children have the capacity to learn

something with help from a more experienced child or adult) certainly have potential applications for both educational television and media literacy education.

Summary and Conclusions

In 1978 former FCC commissioner Nicholas Johnson said, "All television is educational television. The question is: what is it teaching" (Quotations about Television, 2006)? Developmental theories are key to answering this question, because they go beyond simply analyzing the content shown to include the unique nature of the child who is being taught. Media effects often depend on the age of the child as well as the amount of time they spend with each medium and the content to which he or she has been exposed (Condry, 1993). Thus developmental psychology and media studies should go hand in hand. Developmental textbooks are finally starting to include media influences in discussions of cognitive development and other topics (for example, Berk, 2004; Santrock, 2006), not just focusing on the effects of TV violence on aggression in the chapter on early childhood (as was typically the case until a few years ago). Communication textbooks may well follow the same path, providing those who study media and those who produce it an increasing appreciation for the application of developmental theories in their work.

DISCUSSION QUESTIONS

- 1 Which developmental theories could be used to explain the influence of the Power Rangers on children's beliefs, behaviors, and emotions, and what would each one predict?
- 2 Think about one other effect of media content on children involving learning that you have heard about or is described elsewhere in this text. Which of the four ways in which children learn would be most applicable to explaining this effect, and why? How would the "key issues" help to determine whether a given child would be likely to learn that behavior or information from a particular media portrayal?
- 3 Based on the developmental theories presented in this chapter, what types of media might have the strongest impact on children's aggression and other behaviors, on their knowledge and beliefs, and on their feelings? How will this vary depending on the child's age?
- 4 Do you think there might be a "sensitive period" during which children are most strongly influenced by television? If so, when would it occur and how would it reflect developmental theories? Might there be other sensitive periods for other types of media?

EXERCISES

- 1 Watch two half-hour children's TV shows, one from PBS or Nick Jr. that is educational or emphasizes prosocial lessons, and one that consists of action adventure (live or cartoon) that features good guys and bad guys. Identify which characters might be role models for children's viewing, including whether they would be more appealing to boys or girls, and/or children from a particular age group. What behaviors might children be likely to imitate from these programs, and why?
- 2 Watch several TV programs or movies that are aimed at children and young teens. Take notes on the gender messages that are included (including those in the commercials shown during the TV shows). Based on the set of messages you have seen, what kind of gender schema might children develop about what it means to be a boy or a girl?

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