

Appendix B

Immediate and Long-Term Effects of Media on Individuals and Institutions

	Immediate Effects	Long-Term Effects
Cognitive effects	Short-term learning Intensive learning Extensive learning Impression management	Learning agendas Hypermnesia Generalization Exposing secrets Continuous partial attention Blurring line between reality/ fantasy Altering cognitive activity
Attitudinal effects	Opinion creation Opinion change Contrast effect Inoculation Immediate reinforcement	Sleeper effect Sleeper curve Long-term reinforcement Cultivation Socialization
Emotional effects	Temporary reaction Mood management Enjoyment Parasocial attachment	Stunting emotional development Desensitization
Physiological effects	Temporary arousal Temporary sexual arousal Fight-flight reaction	Increasing tolerance Altering brain functioning
Behavioral effects	Attraction Selective exposure Imitation Activation Boomerang	Displacement Narcotization Addiction Learned helplessness Disinhibition Social cocooning

Macro-Level Effects	
On society	Fragmenting societies Public knowledge Public happiness Changing social interactions
On economies	Boycotts of businesses Changes in worldwide economy Creation of new economies
On politics	Campaigns Media
On religion	Attracting believers

IMMEDIATE EFFECTS

Cognitive Effects

* *Short-Term Learning.* This is the acquiring of information and retaining that information in either short-term or long-term memory. If the information is retained only in short-term memory, it will be gone and unavailable for recall within several hours. When the information is rehearsed (thinking about it repeatedly) or consciously cataloged into an existing knowledge structure, it will be retained for a far longer time. When we encode information into our long-term memories, that learning can be intensive or extensive. One important factor that has been found to reduce learning in the short term is multitasking. When people expose themselves to more than one media message at a time, their comprehension and learning from each message are reduced (Jeong & Hwang, 2012). Learning from media messages has been documented even with toddlers younger than 2 years old (Lauricella, Gola, & Calvert, 2011). Learning is enhanced when messages are simpler and the source of the information is credible (Vraga, Edgerly, Wang, & Shah, 2011). Also, learning is enhanced when messages are personalized (Lee & Oh, 2012).

* *Intensive Learning.* Intensive learning adds information to a person's existing knowledge structure; that is, people acquire another example of the same information they already have. To illustrate, imagine that a person is following a political campaign and has built a knowledge structure about the candidates as well as his or her positions. The person reads a political blog on the Internet and learns that one of the candidates has changed position on an important issue. The person adds this information to his or her existing knowledge structure. This is intensive learning. For example, media messages have been found to alter people's existing

knowledge structures about advertised products (Lowrey, 2006; Yang, Roskos-Ewoldsen, Dinu, & Arpan, 2006) and political knowledge (Baek & Wojcieszak, 2009; Cho & McLeod, 2007). Bode (2015) suggests that social media (Twitter and Facebook) have the potential to increase learning related to political information, yet that potential is not always realized in the general population. Social media users who are not interested in politics can easily opt out of political information in this environment.

* *Extensive Learning.* In contrast to intensive learning, extensive learning refers to the acquisition of information on a new topic. If this information is related to an existing knowledge structure, the person can add on to the existing knowledge structure, thus making it broader than before. If this new information is not related to any existing knowledge structure but is still important, the person will create a new knowledge structure. For example, a person opens the newspaper and finds out that there is going to be an election on a proposition to institute a curfew on all students on campus. The person never heard of this issue before but now has some important information on a new topic. The human brain is capable of storing a very large amount of information, up to three terabytes (Brooks, 2011; Silver, 2012).

* *Impression management.* Interactive media allow people to create their own messages and thereby try to stimulate their own effects in others. An important goal of many people who use the interactive nature of social media is to provide information to others and thus manage how others will view them (Baym & Boyd, 2012; Bazarova, 2012; Van Der Heide, D'Angelo, & Schumaker, 2012). Researchers have found interesting patterns of impression management by juvenile delinquents (Lim, Vadrevu, Chan, & Basnyat, 2012), gays (Vivienne & Burgess, 2012), and people who are grieving (Marwick & Ellison, 2012).

Attitudinal Effects

* *Opinion Creation.* The media provide information and images that can create a new opinion. This is most likely to happen the first time you hear a new song. You immediately develop an attitude about whether it is good or bad. You also immediately develop attitudes when you see a new character in a story (Mastro, Lapinski, Kopacz, & Behm-Morawitz, 2009), use an avatar in a video game (Chandler, Konrath, & Schwarz, 2009), or try out a new search engine (Kalyanaraman & Ivory, 2009). The media also trigger the formation of attitudes on controversial issues such as women's rights (Holbert, Shah, & Kwak, 2003), support for the death penalty (Slater, Rouner, & Long, 2006), racial policy and equality (Richardson, 2005), immigration (Seate & Mastro, 2015), national healthcare policies (Hutchens, Hmielowski, & Beam, 2015), and homosexuality (Mo Jang & Lee, 2014).

* *Opinion Change.* Media can change a person's attitudes about something by presenting information that challenges an existing attitude in a way that an alteration of attitude is motivated. For example, after watching a teenager insult her parents and be rewarded for this by the admiration of other characters, a child could change his or her attitude that it is okay (and even desirable) to insult one's parents. Or people who watch a political debate might not just acquire new information on an issue but might also change their opinion of one of the debaters. For example, media messages have been found to change people's attitudes about body image (Tiggemann, 2014), expectations for relationships (Wright & Roloff, 2015), and support for political leaders (Cho, 2005).

* *Contrast Effect.* When we see a portrayal of a very attractive character in the media, we then judge our own romantic partner, friends, and ourselves as less attractive (Kenrick & Gutierrez, 1980; Myers, 2000; Shen, Palmer,

Kollar, & Comer, 2015; Weaver, Masland, & Zillmann, 1984).

* *Inoculation.* Medical doctors inoculate people against disease by exposing them to a mild form of the disease so that their bodies can build up immunity. Later, when those people are exposed to that disease, they are not as susceptible and are much less likely to get sick. This effect is sought by designers of media messages who want to make their audience's attitudes resistant to change. For example, advertisers will try to inoculate their target audiences to an upcoming claim about to be made by their competitors. In this case, advertisers will design a message to belittle the upcoming claim so that the target audience will think the claim to be false or silly when they hear that claim later. This inoculation strategy can provide a "blanket of protection" against attitude change. Inoculation messages can confer resistance against future attacks on attitudes that are similar, but not identical, to the original inoculation message (Parker, Rains, & Ivanov, 2015).

* *Immediate Reinforcement.* The media can reinforce existing attitudes and thus make them more resistant to change. This is an especially desired effect for advertisers. It has been estimated that up to 80% of all advertising is designed *not* to change the attitudes or behaviors of consumers but to reinforce existing brand loyalties and purchasing habits. When people see an ad for a product they usually buy, they immediately feel good, and this helps to solidify their positive attitude toward the product. Researchers have found the reinforcement effect to be especially strong with solidifying existing partisan political attitudes (Holbert, 2005) and that viewing partisan media reinforces beliefs about global warming (Feldman, Myers, Hmielowski, & Leiserowitz, 2014).

Emotional Effects

* *Temporary Reaction.* When we are exposed to a story in the media, the events and characters trigger emotions in us that typically last only a few minutes. Storytellers know they must evoke our emotions to attract and hold our attention. Writers who want to tell an adventure story need to make us feel suspense, mystery, and fear. Writers of drama need to make us feel jealousy, anger, sadness, love, and happiness. Writers of comedies need to make us feel silly. The better the story, the more strongly our emotions are evoked. When the media arouse some emotions, usually those emotions dissipate shortly after the story is over. Fictional stories are especially good at triggering emotional connections with characters (Chory-Assad & Yanen, 2005; Cohen, 1997; Eyal & Cohen, 2006). Also, researchers have found that certain kinds of avatars create a heightened feeling of social presence when playing Internet games (Skalski & Tamborini, 2007). This increased feeling is important because it leads to other types of effects, such as on attitudes and behaviors.

Researchers trying to evoke emotional reactions about risky behaviors need to know about the abilities of their audience members if they want to be successful with their messages. For example, Gibson, Callison, and Zillmann (2011) found that the use of statistical information could confuse audience members who had poor arithmetic skills.

* *Mood Management.* People use the media, especially music, to manage their moods (Knobloch, 2003). People who are stressed can calm themselves down with slow music. Conversely, people who are in a lethargic mood can pep themselves up with louder, more active music. For example, Knobloch and Zillmann (2002), in a study of university students, found that the choice of music is an emotional one. People who were in a bad

mood elected to listen to highly energetic, joyful music more than did people in a good mood. The energetic music distracted them from their bad mood. Also, Knobloch (2003) reports that people who are preparing for a task requiring concentration are likely to choose to listen to “smoother tunes” rather than upbeat music. People have also been found to employ multitasking to manage their moods. Exposing oneself to messages from several different media at the same time delivers pleasant feelings, although there is a decrease in learning from any one of those messages (Wang & Tchernev, 2012). Social networking sites also provide opportunities for selective exposure and mood management (Johnson & Knobloch-Westerwick, 2014).

* *Enjoyment.* People select certain media messages with the expectation of enhancing their enjoyment. For example, video games offer enjoyment to players (Reinecke et al., 2012), especially when those games are competitive and people have a friendly partner. Even when a player’s avatar dies in the game, it can trigger enjoyment, especially when it signals that the game is challenging (Schmierbach, Xu, Oeldorf-Hirsch, & Dardis, 2012). Narratives in entertainment media are often complex and do not always lead to enjoyment. Enjoyment is a pleasurable response to a media message. When viewing a narrative with complex moral issues, the viewer may experience mixed emotions and develop an appreciation for the media message without necessarily experiencing enjoyment (Lewis, Tamborini, & Weber, 2014).

Also, the idea of enjoyment changes as people age. Bartsch (2012) found that young adults were more interested than older adults in emotionally intense entertainment experiences such as thrilling and tear-jerking experiences, whereas older adults were more interested in contemplative entertainment experiences.

* *Parasocial attachment.* Often when people follow stories in media narratives, they become emotionally attached to certain characters in those stories. This parasocial attachment is enhanced when people regard the character as attractive and when they have greater perspective-taking ability (Hartmann & Goldhoorn, 2011; Hoffner & Cohen, 2012).

Parasocial attachments can also be formed with non-human characters. For example, gamers sometimes form parasocial relationships with their in-game avatars. Parasocial relationships are considered to be one-way, non-dialectical relationships that exist in the player or consumer's mind. However, new research is challenging the assumption that player-avatar connections are purely parasocial. As game avatars become increasingly independent agents, player-avatar connections are becoming increasingly social, mirroring human social relationships (Banks & Bowman, 2014).

Physiological Effects

* *Temporary Arousal.* Being exposed to exciting messages can trigger heightened physiological arousal, as evidenced by increased blood pressure, heart rate, and a change in skin conductance. This arousal leads to greater cognitive concentration and a drive to perform behaviors (Wang & Lang, 2012).

* *Temporary Sexual Arousal.* Sexual arousal is also hardwired into our brains. When we see someone who is physically attractive to us, we become sexually aroused. This arousal ensures the propagation of the human race. The person who arouses us need not be a real person. The attraction may be to a character on a television screen or an image in a magazine.

* *Fight-Flight Reaction.* We have certain physiological reactions hardwired into our

brains. One of these is the fight-flight reaction when we are presented with danger. If we see a predator coming after us, the survival instinct is triggered. We must fight off the predator or run away. Our bodies get us ready for this by releasing adrenaline into our bloodstream, which increases our heart rate and blood pressure. The media frequently present us with situations where we identify with a character who is then put in danger. Vicariously, we experience the need for survival. Our bodies automatically release adrenaline into our bloodstreams. If we stop and think about what is happening, we know that the danger is not happening to us. But still our bodies are primed for fight or flight (Reich & Vorderer, 2015).

Behavioral Effects

* *Attraction.* The media present images that attract and hold our attention. We alter our behavior to follow what attracts us (Hardy & Jamieson, 2011). For example, we may be flipping through the channels on our television set until we see something that attracts and holds our interest. At this point, our behavior changes; that is, we stop pushing the search button on our remote control device and keep our eyes on the screen. Perhaps we even lean forward, turn up the volume, and stop talking to other people in the room. All of these are behavioral manifestations of attraction to a message on the television screen.

Violence in media messages has often been found to attract audiences, but this is too simple of a conclusion. It appears that people may be more attracted by the action that goes along with the violence rather than the violence itself (Weaver, Jensen, Martins, Hurley, & Wilson, 2011). Also the attraction of violence has been found to vary by gender, self-esteem, and family characteristics (von Salisch et al., 2011).

The attraction of video games increases when a person plays in the presence of other players and onlookers (Bowman, Weber, Tamborini, & Sherry, 2013). Also, the way games trigger different moral sensitivities has been found to attract different kinds of players (Joeckel, Bowman, & Dogruel, 2012).

* *Selective Exposure.* People have also been found to exercise their own judgments about what is attractive in the media and selectively expose themselves only to those messages that conform to their past behaviors and support their existing attitudes (Knobloch-Westerwick, 2014; Knobloch-Westerwick & Meng, 2009; Gil de Zuniga, Correa, & Valenzuela, 2012).

* *Imitation.* Children as young as 2 have been found to imitate behaviors they see in the media (Comstock, Chaffee, Katzman, McCombs, & Roberts, 1978). In a survey of young children, 60% said they frequently copied behaviors they had seen on television (Liebert, Neale, & Davidson, 1973). The copying need not be identical to the action seen on the screen—it can be generalized to similar actions. For example, children may watch Superman jump off a building and fly across town to rescue someone. Children will imitate this by jumping up and down with their arms outstretched as they run across the backyard. If they watch two kickboxers beat each other to death, they will imitate this by spin-jumping around, kicking, chopping their arms at each other, shouting, and grunting. Seldom will they actually hit each other. By fantasizing, the “hitting” is in their minds as they imagine they are inside the kickboxing world that they saw on television. Usually, these imitations during play are harmless. But because so much of it is triggered by violent messages, the potential for actual physical harm is there. And once in a while, when a real weapon is available, the resulting physical harm can be very great.

Positive examples of imitative behavior include performing physical exercises (Fox & Bailenson, 2009), signing up for organ donation (Morgan, Movius, & Cody, 2009), and voting (Kiouisis & McDevitt, 2008).

* *Activation.* The media can exert a triggering effect on our behavior. For example, when watching an ad, we might jump out of our chair and rush to the store to buy the product. Activation is different than imitation. With imitation, viewers take it upon themselves to emulate a specific behavior seen in the media. In contrast, with activation, viewers are reacting to a suggestion to do something, such as go to the store to buy an advertised product. Viewers do not see the literal behavior portrayed, so there is no pattern to imitate.

* *Boomerang.* There are times when people concerned about media literacy will try to help targets (especially children) increase their media literacy and thereby avoid potentially negative effects from media exposure, and instead of helping their targets, their efforts will backfire and actually increase the negative effect. This is known as the boomerang effect. For example, Byrne (2009) conducted a series of experiments to determine the value of media literacy interventions in reducing the negative effects of exposure to media violence. She found that an intervention can have either a negative or positive effect depending on how it is designed. Positive effects were found when the intervention was followed by a cognitive activity such as writing an essay that reinforced the message of the intervention.

The boomerang effect has also been documented in the context of science communication. Messages designed to move the public toward a consensus on scientific issues such as climate change sometimes have the effect of increasing public polarization on the issue (Hart & Nisbet, 2011).

LONG-TERM EFFECTS

Cognitive Effects

* *Learning Agendas.* By choosing certain images and themes, the media focus our attention on particular things while telling us to ignore other things. Called agenda setting, this effect was first observed in the political arena where the media were found to be very influential in telling us what to think *about* (McCombs & Shaw, 1972). For example, the media, through a continual stream of stories about social welfare programs, are effective at telling people that this is something worth thinking about, but the media are not effective in convincing people that they should support or reject social welfare programs. The agenda-setting function of the mass media is quite powerful, especially when there is an overlap in coverage among the various media.

This agenda-setting effect is not limited to telling us what to think about politics and current events. It is much broader. It tells us what kind of music we should listen to; what kinds of people we should regard as beautiful, smart, or successful; and what kinds of events are important. By bringing certain kinds of people to our attention, the media create celebrities. The media confer status on certain people, and we continue to hear what these people have to say even when they don't have anything important to say. The non-celebrities have not been given status, so we do not hear what they have to say, even if it is something potentially important. The way the media frame issues exerts an effect that has been found to be "surprisingly persistent" (Lecheler & Vreese, 2011).

Even in the new media environment, there is still continuing evidence of an agenda-setting effect. Coleman and McCombs (2007) reported that although the youngest generation used traditional media such as newspapers and television significantly less frequently

than older generations and used the Internet significantly more often, this differential media use did not eliminate the agenda-setting influence.

There is also considerable evidence that not everyone accepts the same agenda as established by the media; that is, individuals filter media information through their own needs and establish personal frames (Kepplinger, Geiss, & Siebert, 2012). With the invention of the Internet, consumers now have access to a broader range of information sources, including traditional media, blogs, and social media. Agenda setting is no longer a one-way interaction between mass media and consumers. Instead, agenda setting is a complex and dynamic interaction between consumers and message creators (Neuman, Guggenheim, Jang, & Bae, 2014).

* *Hypermnesia.* This effect appears to be the opposite of forgetting. Instead of a person being *less* able to recall information from a message as time goes by, there are situations when people become *more* able to recall that information (Wicks, 1992). For example, a person reads a story in a magazine about forest fires and is not able to recall many of the facts after the reading. But during the next few weeks, the television presents stories about several big forest fires in his area, and the person begins to recall more of the facts from the magazine story. This is hypermnesia.

How is hypermnesia possible? The key to understanding hypermnesia is to recognize that when we are exposed to information, the facts are recorded somewhere in our brains. On topics where we already have a good deal of knowledge, the recording of new facts is done in a highly organized manner by cataloging them quickly and accurately in the knowledge structure that we have previously developed on that topic. When we are asked about that information, we have no trouble

retrieving it. But with a topic that is new to us, we don't have a knowledge structure on that topic. The new facts may be stored haphazardly inside other knowledge structures, and this makes those facts very difficult to retrieve. As we begin to learn more about the new topic, we construct a new knowledge structure on that topic and sort through our older knowledge structures to bring all the facts on that topic together in one place. During periods of rest (such as sleep), our minds sort out the facts and move them around to where they can be more efficiently cataloged. Once all the facts on the new topic are assembled into a new knowledge structure, they are then easier to recall.

* *Generalization.* Generalization is the process of observing a few occurrences of something, perceiving a pattern that ties together those occurrences, and then inferring that the pattern reflects something more general than those specific occurrences. That "something more general" can be a claim about how all people behave or how things work. For example, a person watches a local news program and hears a story about a house that was vandalized in an area near his apartment. Then he hears a story on the radio that a local bank was robbed. Next he reads the newspaper and sees that there was an assault in his town last night. He has learned three facts—one from each message. But later that night, he might generalize from these three facts and draw a conclusion that crime has become a real problem in his town. This conclusion was not given to him in the media, but the media provided him with some facts that could set up his jump to this conclusion. Let's consider another example. A person watches a situation comedy where several teenagers are very witty and joke their way out of trouble. She then watches a stand-up comedian who wins the admiration of his audience. Then she

watches a romantic comedy where the characters are attracted to each other because of their shared sense of humor. She has learned facts about how these televised characters behave and the consequences of their behaviors, then generalizes to a conclusion that humor is a very useful tool that can get her whatever she wants.

* *Exposing Secrets.* For many people, the media, especially television, serve to expose secrets about how the world works. The media do this by restructuring social arenas, according to Joshua Meyrowitz (1985) in a fascinating book titled *No Sense of Place*. Meyrowitz argues that the media affect us not through their content per se but by changing the "situational geography" of social life. Meyrowitz says that we all change the way we act depending on whether we are in public or private. When we are in public, we perform on stage in front of others, such as colleagues at work. In contrast, we have "backstage" or private behaviors that we reserve for intimates, such as very good friends or spouses. The media expose important social secrets by taking viewers into the backstage, and this is often a negative effect. For example, Meyrowitz points out that adults used to be able to retreat to their private backstage area, which was hidden from children. While in the backstage, adults could talk about adult things (child-rearing practices, anxieties, sex, death, etc.) with each other without children being exposed. Parents could keep their shortcomings and anxieties in the backstage and thus hide from their children. Then, once parents had discussed how to handle their children, they could come onstage and take on the role of confident authority figures. The media, especially television, expose these adult secrets to children. When children watch situation comedies on television and see parents as buffoons and when they watch talk shows and see all the problems that some adults have, chil-

dren lose the belief that adults have superior wisdom and experience. It is much harder, then, for parents to establish a sense of authority over their children.

* *Continuous Partial Attention (CPA)*. This is the chronic fading in and out of attention while conducting multiple activities at the same time. It comes from our desire to be a live node on the network and is enhanced by so many new media distractions of laptops (e-mail, Web surfing, online bill paying, blogging, and chatting online), smartphones, tablets, and so on. When your “bubble of connectedness” is large, your options are many and you are continually looking around for something better to occupy your attention (Levy, 2005). Famed author Norman Mailer (2005) also criticizes TV for constantly interrupting our attention and thus making it hard to concentrate on one idea for more than a few minutes. He claims this reduces a child’s ability and desire to read and hence a child’s ability to learn.

* *Blurring Line Between Reality and Fantasy*. Playing video games, especially what are called MMORPGs (massively multiplayer online role-playing games), blurs players’ perception of where this line is and breaks down the line itself between the real world and the cyberworld. For example, *World of Warcraft* has guilds that function like mini-societies with their own websites, online forums, and private lore. When one guild member died in real life, his guild members held a funeral for him in the game. People meet in the game and form lasting friendships, even get married. Some go into business with each other in the real world.

* *Altering Cognitive Activity*. For decades, critics have warned that exposure to certain types of media messages leads to negative effects. For example, Marcuse (1964) argued that the mass media in America hammer the population into

having a one-dimensional mind—that is, people’s minds become paralyzed so that they are incapable of independent thought; they cannot criticize or oppose the messages in which they become immersed. More recently, Winn (2002), in her book *The Plug-In Drug: Television, Computers, and Family Life*, cautioned that television hooks children into entertainment, keeps their brains functioning at a low level, and makes them passive acceptors of the media messages as presented. With new methods of measuring brain activity, researchers have found evidence that exposure to media messages can alter that activity, but those alterations can be positive as well as negative. For example, Carr (2010) points out “dozens of studies by psychologists, neurobiologists, and educators” using fMRI scanning have found that the brain activity of experienced Internet surfers is far more extensive than that of novice surfers when they are exposed to the Internet (para. 5). Experienced surfers show much more activity in the prefrontal cortex, which is associated with problem solving and decision making. When the novices were measured about a week later, their brains were found to act like veteran surfers. Thus Internet activity can rewire a person’s brain by developing distinct neural pathways that have positive effects of increasing “hand-eye coordination, reflex response, and the processing of visual cues” (Carr, 2010, para. 19). It also strengthens brain functions related to fast-paced problem solving, particularly when it requires spotting patterns in a mass of data. The more we practice surfing and scanning, the more adept our brain becomes at those tasks. However, the brain alterations that help people become more skilled at navigating the Internet also come with a negative characteristic of turning them into shallower thinkers because Internet surfing promotes cursory reading, hurried and distracted thinking, and superficial learning.

The navigating among linked documents requires skills that are extraneous to the process of reading because it disrupts concentration and that weakens comprehension. Thus the Internet is an interruption system that attracts our attention only to scramble it.

Attitudinal Effects

* *Sleeper Effect*. This is an effect that takes a relatively long time to occur. During an exposure to a message, a person discounts the message because of a dislike for the source. But then over time, the person forgets the source, and the negative feeling about the information goes away and is replaced by a positive feeling. To illustrate, let's say you listen to a political pundit deliver an analysis of the problem of illegal immigration in which he expresses a certain opinion. You do not like or respect the political commentator, so you do not agree with his opinion while you are viewing the show. Several weeks later, you are in an argument about illegal immigration, and you start citing many of the facts that you learned from the commentator. You also express the same opinion as the commentator did. But you have now forgotten about the commentator, who made you feel bad. All you remember is the opinion and the supporting facts, which make you feel good.

When discussing controversial topics, discrediting an opposing viewpoint may not be an effective way to persuade an audience. Kortenkamp and Basten (2015) looked at the presentation of environmental science messages in the media. They found that presenting a message with two balanced viewpoints and presenting a message where one viewpoint is discredited had similar effects over time. Because of the sleeper effect, discrediting an opposing viewpoint in a communication message may not be an effective persuasion tactic.

* *Sleeper Curve*. In his book *Everything Bad Is Good for You*, Steven Johnson (2005) argues that the popular opinion that the media are harmful to us is wrong. Instead he says that exposure to media, especially television and video games, produces more net good than harm. He calls this the Sleeper Curve after Woody Allen's movie *Sleeper*, where the characters in the future view our beliefs about what is harmful as silly. He says, "The most debased forms of mass diversion—video games and violent television dramas and juvenile sitcoms—turn out to be nutritional after all. For decades, we've worked under the assumption that mass culture follows a steadily declining path toward lowest-common-denominator standards, presumably because the 'masses' want dumb, simple pleasures and big media companies want to give the masses what they want. But in fact, the exact opposite is happening: the culture is getting more intellectually demanding, not less" (p. 9).

* *Long-Term Reinforcement*. Although reinforcement can occur during exposure, the much stronger reinforcement effect is that which builds up over time. With each additional message that is the same or similar to all previous messages, a person's existing attitude gains greater and greater weight. Thus, over a long period of time, the attitude has gained so much weight that it is impossible to change it, no matter how powerful the arguments you use. The attitude has been reinforced so much that it is impervious to change even with reason, logic, and powerful counter-arguments. For example, people have been found to use media to reinforce their existing political attitudes (Knobloch-Westerwick, & Meng, 2009). Individuals who identify with a particular set of political, religious, ideological, or lifestyle beliefs seek out or selectively attend to media outlets that reflect their values, which can lead to continued reinforcement of their beliefs (Slater, 2007).

* *Cultivation.* There are certain messages embedded in the way stories are presented, that is, the way plots develop and the way characters are portrayed over and over. After exposure to these constant themes over the long term, people are cultivated to believe certain things. For example, people have been cultivated to believe that the world is a mean and violent place after watching years of television, with its focus on crime in the news and on many programs (Riddle, Potter, Metzger, Nabi, & Linz, 2011).

Some of these cultivation effects have been found to lead to behavioral changes. For example, women who have been cultivated to value a thin body image are more likely to develop eating disorders (Bissell & Zhou, 2004). Also, a study conducted by Dartmouth University Media School reported that youngsters who watch movies in which actors smoke a lot are three times more likely to take up the habit than those exposed to less smoking on screen. It was found that 52% of adolescents who smoked said they started smoking because of seeing movie stars smoke on screen (Ross, 2003). Another study found that media exposure is positively related to adolescents' intentions to smoke, especially when the adolescents' belong to a peer group that condones smoking (Yang, Salmon, Pang, & Chang, 2015).

* *Socialization.* This is a lifelong process whereby people acquire certain attitudes and beliefs by taking from the media certain lessons and themes about society. Throughout this long-term exposure to all kinds of messages (news, ads, movies, cartoons, talk shows, etc.), we infer patterns across the individual facts, events, and character portrayals. These inferences become our beliefs about how the world is constructed. This effect is similar to the cognitive effect of generalization. Both of these reflect the process of inference, whereby people are exposed to a few instances of something and

infer general patterns from these few instances. With generalization, the inferences are about factual patterns concerning our society, such as the rate of crime, the proportion of women who work, the proportion of people who are on welfare, and so on. In contrast, socialization reflects inferences about how people should interact with one another and with their social world. After many years of exposure to media messages, people have become more materialistic (Kwak, Zinkhan, & Dominick, 2002), hold more idealistic expectations about romantic relationships (Vandenbosch & Eggermont, 2011) and marriage (Segrin & Nabi, 2002), are more likely to distrust people in general (Shrum, 1999), develop a "thin ideal" for body image in their characters and sports figures (Bissell & Zhou, 2004; Vandenbosch & Eggermont, 2012), hold stereotypical attitudes about immigrants (Schemer, 2012), and are socialized to believe rape myths (Kahlor & Eastin, 2011) and to objectify women (Aubrey, Hooper, & Mbure, 2011).

Emotional Effects

* *Stunting Emotional Development.* Some critics have made the argument that watching a great deal of television stunts a child's emotional development. They point out that by the time a child reaches the age of 5, he or she has been exposed to about 6,000 hours of television. The high levels of exposure to television, coupled with the extreme level of stimulation presented by television, leaves viewers with no time for reflection. On television, the pace is extremely fast, with new images replacing old every 3.5 seconds on average and with new shows replacing old shows every few weeks. There are sound effects, music, laugh tracks, and constant interruptions. This short-circuits the natural, emotional development people need to become healthy human beings; it strangles the development of children's own voices and denies them their imaginative powers.

Others have made the argument that it is important to consider the content of media when studying media effects. Violent content and advertisements in children's programming may warrant parental concern and public policy initiatives. Yet developmentally appropriate content (e.g., shows that are designed to support learning and development) may be beneficial for cognitive, emotional, and social development in children (Vossen, Piotrowski, & Valkenberg, 2014).

* *Desensitization*. Some things in the media are presented so often that we can no longer treat them with wonder or awe. Our tolerance has been increased so that those things that used to trigger emotional responses no longer do. This is especially important with the issue of violence where people can become desensitized to violence and the suffering of its victims (Liebert et al., 1973; Linz, Donnerstein, & Penrod, 1984, 1988; Thomas, 1982) as well as one's pleasure from sexual activity (Peter & Valkenburg, 2009). This desensitization can have positive effects in a therapeutic setting. People who fear something (dogs, heights, flying in airplanes, etc.) can be gradually desensitized (Dorr, 1981; Foa & Kozak, 1986; Goranson, 1970).

Physiological Effects

* *Increasing Tolerance*. Your body builds up a resistance—or tolerance—to certain experiences. Over time, your body requires greater and greater stimulation to trigger the same physiological response in you. For example, the first time you see a horror film, your body responds with a fight-or-flight reaction by substantially increasing your heart rate and blood pressure. As you continue to view horror films over the years, your body's reaction to these stimuli is not as strong. Your heart rate and blood pressure still increase but not as much.

You are building up a higher tolerance to this type of message physiologically. In the extreme case, with massive exposure to this type of message, you might even extinguish all physiological reactions to horror.

* *Altering Brain Functioning*. Healy (1990), in her book *Endangered Minds*, argues that children's brains are being altered because of exposure to the visual media, especially computer games. Recent studies suggest that intensive game play actually redraws the brain's neural maps. And children who play a lot have cognitive strategies that are parallel—not sequential. This could make it more difficult for children who must learn sequential tasks such as reading or mathematical reasoning, both of which are very linear and analytical. She says that children who enter elementary school are smarter each year in some ways but are less able to handle school and its requirements.

Behavioral Effects

* *Displacement*. The media have changed the way we spend our time. The media consume us by consuming our time. Almost 70% of the average person's day includes some form of media use (Ransford, 2005). The A. C. Nielsen company reports that the average amount of time that U.S. households had a TV set on each day during the yearlong 2005–2006 TV season increased 3 minutes from the previous year to a record of 8 hours and 14 minutes. As for individuals, the amount was up 3 minutes to a record 4 hours and 35 minutes per day. Increases were seen in all age categories (Getlin, 2006).

There is also a concern that exposure to the media—especially with escapist fare—will prevent people from using their time more productively. This is especially an issue with children and their schoolwork. Although the

media have been found useful in stimulating interest in some topics (Schramm, Lyle, & Parker, 1961), they have not been generally found to be either a positive or a negative factor; it depends on what is exposed. Also, there is a concern that for very young children with the television viewing habit, playtime is preempted (Singer & Singer, 1981). When TV structures a child's life, the child spends less time creatively making up his or her own games and situations.

Most children use screen-based media (television, computers, tablets, etc.) for at least 1 hour per day. One study found that heavy users of screen-based media were less likely to regularly participate in sports or physical activity. Heavy users were less happy and were more likely to have socioemotional difficulties (Booker, Skew, Kelly, & Sacker, 2015).

* *Narcoticization*. The media can be like a powerful drug. The first exposure to a new magazine, CD, TV show, and so forth can bring a rush of excitement. So we go back to it to get the same feelings again. It is habit forming. When we build up a tolerance to the effect, we want more. Each time we go back, we require more from the media to get the same rush. With entertainment, we want a more outrageous story line, more attractive characters, and more visual effects. But if the media can give us only the same kinds of messages, we do not feel the rush. Over time, our expectations become very high, and we find ourselves flipping through 100 channels and saying, "There is nothing on!" What we mean by this, of course, is that TV is no longer able to exceed our expectations and to significantly arouse us in a surprising way. But we keep exposing ourselves to the TV anyway because; for many of us, it is better than not watching. People begin to withdraw from real life and become passive (Sayre & King, 2003).

* *Addiction*. Evidence has been found that some people have become addicted to certain kinds of media messages and experiences. For example, some people who spend a lot of time playing video games exhibit the classic criteria for addiction (relapse, withdrawal, conflict, and problems; Brunborg et al., 2013). Studies from various Western countries indicate that video game addiction affects between 1.5% and 11.6% of gamers (Kuss, van Rooij, Shorter, Griffiths, & van de Mheen, 2013). However, researchers have not come to a consensus on how to define and measure video game addiction. This lack of consensus may contribute to the variation in estimates of the prevalence of video game addiction.

Internet addiction disorder is a term coined in the mid-1990s by a psychiatrist who was seeing more and more patients who were unable to control their use of the Internet. These people typically forgo sleeping, eating, and other activities to spend more time on the Internet. This disorder shows up as obsessions with chat rooms, games, pornography, gambling, and shopping. Some married people have extramarital affairs online; day traders get hooked on the stock market. Almost from the start therapists began developing 12-step plans to help these people (Vranizan, 1995). A debate has been raging among health care professionals about whether to classify this as an addiction and include it as such in the *Diagnostic and Statistical Manual of Mental Disorders (DSM)* by the American Psychiatric Association. In 2007 the *American Journal of Psychiatry* called Internet addiction a common disorder and supported its recognition. The fifth edition of the *DSM* included Internet gaming disorder as a condition warranting further study. Although it is not yet recognized as a formal disorder in the *DSM-5*, it may be included in future editions.

In other countries it is recognized as a mental illness. In South Korea, where the average

high school student plays video games for 23 hours each week, the government estimated that over 200,000 adolescents needed treatment for Internet addiction, and the government opened more than 100 clinics to help people with Internet addiction (“Addicted? Really?,” 2011). In China the number of Internet users climbed from fewer than 1 million in 1999 to over 340 million in 2010. There is a growing epidemic of people who are addicted to the Internet, especially young people. The problem got so large that in 2004 the government closed 16,000 Internet cafes and also created a center for the treatment of Internet addiction that treated more than 1,000 people a year (Stewart, 2010).

* *Learned Helplessness.* Television causes a decrease in persistence, because viewers are learning to be helpless. This learned helplessness comes not from watching any one show or type of programming; it comes from the act of watching television itself.

* *Disinhibition.* This is the process of gradually wearing down your inhibitions, which prevent you from behaving in certain ways. For example, you may not like to dance in front of others, but after several months of watching dance programs, your resistance wears down, and you find yourself dancing in a club. Also, most of us have been raised to solve our problems in nonaggressive and nonviolent ways. However, after years of exposure to violent portrayals in the movies and on television, where attractive characters use violence successfully to get what they want, our aversion to using violence gradually wears down. One day, when someone steals the parking place we want, we find ourselves screaming and pounding the offender’s car; our inhibitions that prevent us from behaving violently have been worn down and cannot prevent us from behaving violently.

Disinhibition takes place in virtual worlds, too. Behm-Morawitz and Schipper (2015) studied harassment in the game *Second Life*. They found that virtual worlds can promote toxic disinhibition; because players are not interacting face to face, they may be disinhibited from acting aggressively toward or harassing other players.

* *Social Cocooning.* This is an effect first identified by sociologist Raymond Williams in 1974 as “mobile privatization” to describe the phenomenon of people forming technological bubbles around themselves. This has been enabled by devices such as Sony’s Walkman in 1979 and Apple’s iPod in 2001 (Levy, 2006b). New media allow us to be more individual. Now couples can cuddle while one person listens to music on an iPod while the other watches a sports contest on a cell phone—now that we have television on the go (Roberts, 2006a).

Others have purported that the use of new communication technologies increases social cocooning and limits our connections with weak ties. For example, text messaging reinforces our connections with strong ties (people in our social networks that we are close to), giving us the ability to frequently connect with our strong ties. However, these strong connections may come at the expense of forming connection with important weak ties since technologies such as texting do not foster communication with weak network ties (Kobayashi & Boase, 2014).

MACRO-LEVEL EFFECTS

Society

* *Fragmenting Society.* The proliferation of media outlets, particularly the new media, serve to fragment society (Donnelly, 1986; Webster & Ksiazek, 2012). Donnelly (1986)

describes this fragmentation of society when he says that we are currently living in an Autonomy Generation that will soon change to a Confetti Generation. The Autonomy Generation people believe that each individual is the center of all relevant values. We are responsible only to ourselves, and we alone can decide which activities and ways of behaving have meaning for us and which do not. We live according to our own feelings with little need for input from others. We seek out authenticity by overcoming society and other external value systems. We are guided by the regulations of our own character. We live in the present, responding to perceptions, relationships, and encounters in the current moment. To us, what is most important is how outside events are perceived and understood by the individual. He says we experience what Durkheim called *anomie*, the peculiar pain derived from individuals' inability to identify and experience their community.

Donnelly (1986) says that the new electronic media have five characteristics that will affect society: quantity (in terms of availability and use), speed (delivery and satisfaction), weightlessness of images (no context), remoteness (bring faraway information close), and choice (explosion of alternatives). Because the present generation does not possess the cultural tools to absorb such an explosion of information, we will become the Confetti Generation. The Confetti person is inundated by experience but ungrounded in any cultural discipline for arriving at any reality but the self.

* *Public Knowledge.* With the easy availability of all kinds of sources of information, the expectation is that the entire population would increase its level of knowledge, but this is not the case. Instead, there is a growing knowledge gap between people who are educated and motivated to seek out information and those who are not. This knowledge gap has been found in many countries around the

world (Nir, 2012). More information is available than ever before, but people with lower socioeconomic status, particularly those with lower levels of formal education, tend to gain access to information at a slower rate than those with higher socioeconomic status (Gaziano, 2015).

* *Public Happiness.* The overall level of happiness in society is generally down, and some critics are characterizing this as a media effect. Myers (2000) points out that from 1960 to 2000 in the United States, the divorce rate doubled, teen suicide rate tripled, violent crime quadrupled, and the prison population quintupled. Lane (2000) points out that the rate of serious clinical depression more than tripled over the last two generations. Schwartz (2004) says that the number of people who say they are very happy has been declining despite the fact that the GDP (gross domestic product, which is the primary indicator of economic prosperity) has more than doubled in the past three decades. Depression was 10 times more likely in 2000 as it was in 1900. Schwartz cites a UNICEF study that shows that suicide rates among adolescents and young adults has increased dramatically worldwide in the last several decades, especially in developed countries such as France (where it has tripled), Norway and Australia (where it has doubled), and Canada, England, and the United States (where it has increased 50%).

* *Changing Social Interactions.* The Internet serves to bring people together in cyber communities organized around common interests. This makes for a much more open and accessible social world (Weinberger, 2002). The Internet also reduces the time people spend with real individuals in real space (Nie & Erbring, 2002) and it alters patterns of civic participation (Bennett, Wells, & Freelon, 2011; Hampton, Livio, & Sessions-Goulet, 2010; Kang & Gearhart, 2010).

Economies

* *Boycotts of Businesses.* The Internet has made it possible for politically active people who do not like the practices of certain businesses to organize a boycott of those companies' products and services (Kang, 2012).

* *Changes in Worldwide Economy.* Computers and the Internet have made the widespread use of credit cards possible. Visa has issued more than 1 billion cards worldwide and is used in 21 million locations in 300 countries and territories. Visa has 60% of the credit card market, so there are likely 1.7 billion credit cards in use in the world. This makes credit cards a universal currency. People don't need to deal with the currencies of individual countries (Hunter, 2002).

* *Creation of New Economies.* There are MMORPGs that have created cyber-economies that are now influencing real-world economies. For example, *World of Warcraft* has created its own economy where players work to produce cybergoods (such as gold pieces, exotic armor, and weaponry) that increase their power and prestige in the game. However, these cybergoods can also be exchanged in the real world for actual currencies. For example, there are people in China who work an 8-hour shift in the game to earn about 100 game gold pieces that they sell in a real-world market for \$30 to newer players who want to advance fast in the game without having the time required to play themselves (Levy, 2006a).

Politics

* *Campaigns.* Political campaigns have changed in many ways with the rise of the mass media. Campaign staffs now rely much more on

media consultants. Campaigns must raise a great deal of money for paid advertising, especially on television (Bennet, 2012). Candidates create pseudo events so they can attract the press and get free coverage of their campaigns. Politicians are beginning to use social networking websites as a source of political communication. The 2012 presidential primary season was the first time Twitter was used heavily by presidential candidates. Candidates still rely on traditional media for legitimacy, but Twitter is a tool candidates can use to communicate their agenda directly to potential voters and to shape the agenda of traditional media sources. If a candidate discusses a political issue on Twitter, traditional media sources may start to cover the issue as well. Thus, candidates can influence the agenda of traditional media sources (Conway, Kenski, & Wang, 2015).

* *Media.* The media are shifting the way they cover political campaigns from simply reporting what the campaigns say to checking their facts (Poneiwozik, 2012). The newer media technologies have created a kind of e-democracy (Chadwick, 2006).

Religion

* *Attracting Believers.* Religious bodies can use the media to attract more believers, reinforce their beliefs, and minister to their needs. About 25 million people per week watch religious services on television. The Catholic Church, with 2000 years of history, is slow to change, but there are some changes that relate to the mass media. Pope John Paul II used a laptop and was flooded with e-mails (Wilkinson, 2006). Also, the Catholic Church launched an Italian-language website to allow people to ask questions about their religion and get answers. Questions are funneled out to 800 priests.

