"We do not first see, then define, we define first and then see."
—Walter Lippmann (cited in Snyder & Uranowitz, 1978)

Look in front of you. Now look at your hands. Look at the cover of this book. How much of what you see is determined by your expectations?

If you are like most people, your perceptions are heavily influenced by what you expect to see. Even when something is right before your eyes, it is hard to view it without preconceived notions. You may feel that you are looking at things in a completely unbiased way, but as will become clear, it is nearly impossible for people to avoid biases in perception. Instead, people selectively perceive what they expect and hope to see.

**CALLING A SPADE A SPADE**

One of the earliest and best known experiments on selective perception was published by Jerome Bruner and Leo Postman (1949). Bruner and Postman presented people with a series of five playing cards on a tachistoscope (a machine that can display pictures for very brief intervals), varying the exposure time from ten milliseconds up to one second. The cards they showed these people were similar to the cards on the cover of this book. Take a moment now to note what these cards are.

Did you notice anything strange about the cards? Most people who casually view the cover of this book never realize that one of the cards is actually a black three of hearts! Bruner and Postman found that it took people more than four times longer to recognize a trick card than a normal card, and they found that most reactions to the incongruity could be categorized as one of four types: dominance, compromise, disruption, or recognition.

A dominance reaction consisted mainly in what Bruner and Postman called “perceptual denial.” For example, faced with a black three of hearts, people were very sure that the card was a normal three of hearts or a normal three of spades. In the first case, form is dominant and color is assimilated to prior expectations, and in the second case, color
is dominant and form is assimilated. In Bruner and Postman’s experiment, 27 of 28 subjects (or 96 percent of the people) showed dominance reactions at some point.

Another reaction people had was to compromise. For instance, some of Bruner and Postman’s subjects reported a red six of spades as either a purple six of spades or a purple six of hearts. Others thought that a black four of hearts was a “greyish” four of spades, or that a red six of clubs was “the six of clubs illuminated by red light” (remember, experimental subjects were shown the cards on a tachistoscope). Half of Bruner and Postman’s subjects showed compromise responses to red cards, and 11 percent showed compromise responses to black cards.

A third way that people reacted to the incongruity was with disruption. When responses were disrupted, people had trouble forming a perception of any sort. Disruption was rare, but when it happened, the results were dramatic. For example, one experimental subject exclaimed: “I don’t know what the hell it is now, not even for sure whether it’s a playing card.” Likewise, another subject said: “I can’t make the suit out, whatever it is. It didn’t even look like a card that time. I don’t know what color it is now or whether it’s a spade or heart. I’m not even sure now what a spade looks like! My God!”

The final reaction was, of course, one of recognition. Yet even when subjects recognized that something was wrong, they sometimes misperceived the incongruity. Before realizing precisely what was wrong, six of Bruner and Postman’s subjects began to sense that something was strange about how the symbols were positioned on the card. For example, a subject who was shown a red six of spades thought the symbols were reversed, and a subject who was shown a black four of hearts declared that the spades were “turned the wrong way.”

These results show that expectations can strongly influence perceptions. In the words of Bruner and Postman (p. 222): “Perceptual organization is powerfully determined by expectations built upon past commerce with the environment.” When people have enough experience with a particular situation, they often see what they expect to see.

Item #33 of the Reader Survey contains another illustration of how prior experience can interfere with accurate perceptions. In that question, you were asked to count how many times the letter f appeared in the following sentence:

These functional fuses have been developed after years of scientific investigation of electric phenomena, combined with the fruit of long experience on the part of the two investigators who have come forward with them for our meetings today.

Most native English speakers underestimate the number of times the letter f appears (Block & Yuker, 1989). The correct answer is 11 (including four times in which f appears in the word of). Because experienced speakers pronounce the word of with a “v” sound, they have more difficulty detecting these occurrences of the letter f than do inexperienced speakers, and as a result, past experience actually lowers performance.

**POTENT EXPECTATIONS**

Imagine you are a male college student participating in a study at the Rutgers Alcohol Research Laboratory. Your job, you are told, is to drink a vodka and tonic, wait twenty minutes for the alcohol to enter your bloodstream, and speak with a female assistant of the experimenter in an attempt to make as favorable an impression as possible. The experimenter then mixes a vodka and tonic in proportion to your body weight, hands you the glass, and leaves you in a private room to consume the drink.

After you have finished the drink, a female assistant enters the room, sits down, and looks you straight in the eye. You begin to talk to her. How nervous are you? How fast is your heart beating?

When G. Terrence Wilson and David Abrams (1977) conducted this experiment, they found that subjects who thought they had been given a vodka and tonic showed much smaller increases in heart rate than subjects who thought they had been given tonic water alone—regardless of whether subjects had actually ingested alcohol. Heart rates were not significantly affected by whether subjects had been given alcohol to drink; they were affected by whether subjects believed they had been given alcohol to drink. Expectations proved more important than changes in blood chemistry.

David McMillen, Stephen Smith, and Elisabeth Wells-Parker (1989) took these results one step further. Using an experimental technique similar to the one used by Wilson and Abrams, these researchers randomly assigned college students to drink either alcoholic beverages or nonalcoholic beverages. Some of the students had been previously identified as high “sensation seekers” who liked to take risks, and others had been identified as low “sensation seekers.” Then, half an hour after drinking their beverages, the students played a video game in which they drove along a roadway and had the opportunity to pass other cars by using an accelerator pedal. Students were told to drive the simulated car as they would drive a real car.

McMillen and his colleagues found that high sensation seekers who believed they had consumed alcohol—whether or not they actually had—changed lanes and passed cars significantly more often than high sensation seekers who, rightly or wrongly, did not have this belief. In contrast, low sensation seekers who thought they had consumed alcohol were more cautious than low sensation seekers who thought they had not. Equally strong expectancy effects have been found among frequent users of marijuana (Jones, 1971).
In these experiments and the experiment of Bruner and Postman, people's perceptions were strongly influenced by their prior beliefs and expectations. Psychologists refer to such influences as “cognitive” factors. Yet perception is affected not only by what people expect to see; it is also colored by what they want to see. Factors that deal with hopes, desires, and emotional attachments are known as “motivational” factors. The remaining sections of this chapter discuss instances of selective perception in which motivational factors are intertwined with cognitive factors.

WHEN THE GOING GETS ROUGH

On November 23, 1951, the Dartmouth and Princeton football teams went head to head in Princeton University’s Palmer Stadium. Shortly after the kickoff, it became clear that the game was going to be a rough one. Princeton’s star player, who had just appeared on the cover of Time magazine, left the game with a broken nose. Soon thereafter, a Dartmouth player was taken off the field with a broken leg. By the end of the game—which Princeton won—both sides had racked up a sizable number of penalties.

Following the game, tempers flared and bitter accusations were traded. Partisans on both sides wrote scathing editorials. For example, four days after the game, a writer for the Daily Princetonian (Princeton’s student newspaper) declared: “This observer has never seen quite such a disgusting exhibition of so-called ‘sport.’ Both teams were guilty but the blame must be laid primarily on Dartmouth’s doorstep. Princeton, obviously the better team, had no reason to rough up Dartmouth.” On the same day, the Dartmouth (Dartmouth’s undergraduate newspaper) charged that Princeton’s coach had instilled a “see-what-they-did-go-get-them attitude” in his players. Throughout the ensuing week, Dartmouth and Princeton students continued to fiercely debate what had happened and who was responsible.

Into that turmoil stepped Albert Hastorf (a social psychologist then at Dartmouth) and Hadley Cantril (a Princeton survey researcher). Capitalizing on the controversy, Hastorf and Cantril (1954) conducted what is now a classic study of selective perception.

They began by asking 163 Dartmouth students and 161 Princeton students the following question, among others: “From what you saw in the game or the movies, or from what you have read, which team do you feel started the rough play?” Not surprisingly, Hastorf and Cantril found a large discrepancy between common Dartmouth and Princeton reactions. Of the Dartmouth students, 53 percent asserted that both sides started it, and only 36 percent said that Dartmouth started it. In contrast, 86 percent of the Princeton students felt that Dartmouth had started it, and only 11 percent said that both sides were initiators.

This difference of opinion led Hastorf and Cantril to wonder whether Dartmouth and Princeton students were actually seeing different games, or whether they were observing the same game but simply interpreting the evidence differently. To explore this question, they asked a new group of students at each school to watch a film of the game and to record any infractions they noticed. Students from both schools watched the very same film, and they used the same rating system to record any observed infractions.

As you can see in Figure 1.1, the results showed a great deal of selective perception. Dartmouth students observed nearly the same number of infractions on both sides (4.3 for their side and 4.4 for Princeton), whereas Princeton students saw the Dartmouth team commit more than twice as many infractions as the Princeton team (9.8 compared with 4.2 for themselves). In fact, there was such a discrepancy in perceptions that when Princeton sent a copy of the film to several Dartmouth alumni for a group showing, one Dartmouth alumnus who previewed the film could not see any of the Dartmouth infractions and, in confusion, sent Princeton a telegram asking for the rest of the film!

Based on these differences in perception, Hastorf and Cantril (1954, pp. 132-133) concluded that: “It seems clear that the ‘game’ actually was many different games .... It is inaccurate and misleading to say that

![Figure 1.1](https://example.com/image1.png)

An example of selective perception. [Taken from Hastorf and Cantril, 1954.]
different people have different ‘attitudes’ concerning the same ‘thing.’ For the ‘thing’ simply is not the same for different people whether the ‘thing’ is a football game, a presidential candidate, Communism, or spinach.” In 1981, John Loy and Donald Andrews carefully replicated Hastorf and Cantril’s study, and they came to much the same conclusion.

THE HOSTILE MEDIA EFFECT

Many years after the Dartmouth-Princeton study, Robert Vallone, Lee Ross, and Mark Lepper (1985) speculated that this kind of selective perception might lead political partisans on each side of an issue to view mass media coverage as biased against their side. Vallone, Ross, and Lepper called this phenomenon the “hostile media effect,” and they first studied it in the context of the 1980 presidential election between Jimmy Carter and Ronald Reagan. Three days before the election, they asked 160 registered voters to indicate whether media coverage of the candidates had been biased, and if so, to indicate the direction of the bias. What they found is that approximately one-third of the respondents felt that media coverage had been biased, and in roughly 90 percent of these cases, respondents felt that the media had been biased against the candidate they supported.

Intrigued by these initial findings, Vallone, Ross, and Lepper (1985) conducted a second study in which 68 “pro-Israeli” college students, 27 “pro-Arab” students, and 49 “generally mixed” or “neutral” students watched the same set of televised news segments covering the tragic Beirut massacre (in 1982, a series of Arab-Israeli conflicts had resulted in the massacre of Arab civilians in the refugee camps at Sabra and Chatilla, Lebanon). The news segments were drawn from six different evening and late-night news programs broadcast nationally in the United States over a ten-day period.

In support of the hostile media effect, Vallone, Ross, and Lepper found that each side saw the news coverage as biased in favor of the other side. Pro-Arab students thought the news segments were generally biased in favor of Israel, pro-Israeli students thought the segments were biased against Israel, and neutral students gave opinions that fell between the two groups. Moreover, pro-Arab students felt that the news programs had excused Israel “when they would have blamed some other country,” whereas pro-Israeli students felt the programs blamed Israel “when they would have excused some other country.”

As in the case of the Dartmouth-Princeton game, Vallone, Ross, and Lepper found that these disagreements were not simply differences of opinion; they were differences in perception. For example, pro-Arab and pro-Israeli students differed in their perceptions of the number of favorable and unfavorable references that had been made to Israel during the news programs. On the average, pro-Arab students reported that 42 percent of the references to Israel had been favorable and only 26 percent had been unfavorable. Pro-Israeli students, on the other hand, recalled 57 percent of the references to Israel as having been unfavorable and only 16 percent as having been favorable. Furthermore, pro-Israeli students thought that most neutral viewers would become more negative toward Israel as a result of watching the news clips, whereas pro-Arab students thought that most would not.

Vallone, Ross, and Lepper concluded that partisans tend to view media coverage of controversial events as unfairly biased and hostile to the position they advocate. They also speculated that similar biases in perception might arise in the context of mediation, arbitration, or other situations in which two sides are heavily committed to prior positions. This speculation makes good sense. As we will see in Chapter 2, when people become committed to a particular cause or a course of action, their perceptions often change in order to remain consistent with this commitment.

CONCLUSION

Perceptions are, by their very nature, selective. Even the simple identification of a playing card—or the perception of one’s own intoxication—depends critically on cognitive and motivational factors. Consequently, before making an important judgment or decision, it often pays to pause and ask a few key questions: Am I motivated to see things a certain way? What expectations did I bring into the situation? Would I see things differently without these expectations and motives? Have I consulted with others who don’t share my expectations and motives? By asking such questions, decision makers can expose many of the cognitive and motivational factors that lead to biases in perception.