After that he reviewed the chapter of my five-day course related to nonverbals, helped me perfect my teaching method, and allowed me to use his Micro Expression Training Tool (METT) software in the course to help hone the students’ skills during the day.

A few months later I found myself sitting on the balcony of Dr. Ekman’s apartment talking about social engineering and microexpressions. It was then that I told him I wanted to write a book that took his decades of research and applied it to a field in which it had never been applied before.

But I told him I would only do it with his blessing and support. I would not take on this task without his help, training, editing, and correction. I am serious about making sure what is said in this book is backed by science, accuracy, and years of proof. About a year later, Dr. Ekman agreed to work with me and suggested that his longtime associate, Paul Kelly (or PK) would be a part of this process.

PK and I developed a friendship through this process that helped me to learn from one of Dr. Ekman’s senior instructors. Dr. Ekman and PK spent a considerable amount of time with me to ensure that I understood the concepts and to help me make sure this book was scientifically accurate. Some of this collaboration is illustrated in Figures I-1 through I-4.

**Figure I-1:** Dr. Ekman and me reviewing some of the pictures for the book
**Introduction**

*Figure I-2:* Dr. Ekman giving me some advice for proper facial expression usage for the book

*Figure I-3:* Dr. Ekman allowing me to explain my concept for using certain pictures
Despite all of this, one of the things that moved me even more is the time that Dr. Ekman gave my daughter, Amaya. My daughter took an interest in Dr. Ekman’s work and took his online facial expression reading course, scoring an 89 percent. When she heard I was going to meet him in NYC, she begged me to let her come.

During that session, Amaya showed Dr. Ekman some of her work that was inspired by his daughter, Eve. She had made a collage of facial expressions imitating Eve from *Emotions Revealed*. Dr. Ekman took one look and said, “If you don’t use this young lady in your book you are doing a disservice.”
In the spirit of Eve Ekman from so many years ago, my daughter, Amaya, makes her debut in Chapter 5 of this book showing us her skill in mimicking facial expressions.

In the end, what I can say is that I am proud to have Paul Ekman and Paul Kelly supporting me in this book, as I know what I am writing is accurate and proven. Even more so, they have become my mentors and friends.

Let’s quickly review the topics covered in this book.

Chapter 1 takes an in-depth look at nonverbal communication and how it works from a scientific point of view.

Chapter 2 describes what social engineering is and how it is used. This chapter discusses how several recent real-life attacks used social engineering and what you can learn from these incidents.

Chapter 3 considers the science of the hands, a subset of body language, describing how you can decipher emotions displayed through the use of the hands.

Chapter 4 analyzes the emotions revealed by other key aspects of body language—the torso, legs, and feet. What does it mean when someone points his or her feet toward the door? Are signs of comfort or discomfort hidden in how someone stands or leans? Being able to pick up on these cues will enhance your ability to read anyone fast.
old enough to crawl but not old enough to speak was placed at the end of a table with a Plexiglas top and a checkerboard pattern underneath. It looked to the baby as though, halfway across, the tabletop dropped off steeply, like a tall step down, but this was an optical illusion.

At the far end, past the “dangerous cliff,” was a toy. Over the edge of the table, near the toy, the baby could see the face of his or her mother. The mother was instructed to use no words, only facial expressions, to encourage her baby to come to her. When the baby arrived at the “cliff,” the mother was to show a macroexpression—a very long facial expression—of either happiness or fear. If the mother was happy, she displayed a smile that produced wrinkles on the outer sides of each eye (what Dr. Ekman describes as a “sincere smile”) and told the baby everything was okay, as shown in Figure 1-1. If the mother showed fear, she would pull back her lips horizontally/laterally and open her eyes wide, as shown in Figure 1-2.

When the mother showed signs of happiness, the baby was more likely not to notice the visual cliff and to crawl straight across to his or her mother. If the mother showed signs of fear, the baby displayed caution. One baby even shook his head when thinking about crossing the cliff.

**Figure 1-1**: How would the baby feel at seeing this expression on his mother?
Unmasking the Social Engineer

Figure 1-2: How would the baby feel at seeing this expression on his mother?

This and similar experiments prove how important it is to understand the depth, seriousness, and impact that nonverbal communication has on the people we communicate with. Taking this a step further, we see how important it is to understand how professional social engineers can use nonverbals. Using this experiment as an example, if a social engineer’s face shows fear when approaching a target, it will create feelings of fear in the target and cause them to wonder what is going on. If, on the other hand, the social engineer shows happiness, it is easier to develop rapport and achieve the desired goal.

So far I have classified all nonverbal communication into one large group, but this type of communication has many aspects.

The Different Aspects of Nonverbal Communication

Nonverbal communication can be broken into different aspects. Numerous researchers have spent thousands of hours dividing it into
Figure 1-3: “Everything is okay,” or a derogatory statement?

Figure 1-4: Depending on where in the world you make this gesture, it could be benign or offensive.
Some people believe you can tell if someone is lying based on the direction in which he looks, but recent studies have disproven that theory. Nevertheless, you can spot many things in regards to the eyes and levels of comfort or discomfort.

The topic of eye contact interests me. I tend to learn more easily when someone tells me a fact. Therefore, I tend to look away when someone is talking. Though I may appear not to be paying attention, I am actively listening. However, the person I am speaking to may not feel that way. Even though I am not being deceptive or rude, it is culturally accepted that when you’re being spoken to, a certain amount of eye contact is proper.

Being conscious of eye contact can benefit the social engineer. At the same time, to not fall into the trap of thinking that everyone who looks away is lying. Do notice someone who shifts his or her eyes a lot or who cannot look at you when speaking. Noticing areas of discomfort can go a long way toward reading the person’s emotional state.

In one of my conversations with Dr. Ekman, when I asked about the importance of eye contact, he said, “It can have many different meanings, depending on the context. It can assert dominance, initiate a flirtation, or be a sign that someone is lying, who mistakenly believes that only liars look away when they talk.”

**Olfactics**

Olfactics is the study of smell in relation to nonverbal communication. Our bodies associate certain smells with emotions and feelings. Some
Being able to read these emotions and therefore understand what someone may be feeling (notice I said what, not why) can help you adjust your approach or opening statement to be more attractive to that person. You probably don’t want to antagonize the person at the bottom right. You might want to exercise some extra humility when dealing with the person second from left in the top row. If you see the expression at the top, third from the left, you might want to find out what is disgusting him. You get the point: Examining facial expressions can help you adjust and change your approaches.

Years of research have revealed that these expressions are universal. Across gender, culture, race, and demographics are base emotions that we all feel and express the same way. Of course, the reasons for those emotions change depending on those very same things.

How to Use This Information

The rest of this book digs a little deeper into these areas. You will see how you, as a social engineer, communicator, and human being, can use each of these cues to better understand the people around you.
There are a few key things to notice with this type of phish. First, it works because it looks like a real Facebook email. It has the same layout and colors. It is simple and not overdone. In addition, the subject line is ripped from actual Facebook emails.

A few clues give away this email as false:

- The “from” address is not Facebook. Sometimes a social engineer will use facbook.com or faceboook.com or facebook.co—little changes that may go widely unnoticed.
- The greeting is generic; it just says “Hi.” Usually it would have your name or username.
- The big clue that often goes unnoticed is the link. When you hover the mouse pointer over the link, you see that it is not going to Facebook at all. Instead, it is going to the social engineer’s website.
- This particular email is quite smart because the link, the buttons, and even the unsubscribe link all lead to a malicious site.
Another example of the seriousness of malicious phishing is a fake PayPal email, as shown in Figure 2-2.

![Fake PayPal Email]

**Figure 2-2**: PayPal is widely used in phishing attacks.

These emails affect us because they hit us in the wallet—or so we are led to believe. The fear that someone may have accessed and stolen our funds is enough to make us click a link and quickly log into our account to verify. And this is just what the attacker wants us to do. Often a fake website, a fake login, and little scripts harvest the credentials you enter. When the attacker has these credentials, he logs in and then does the very thing that created fear in you: steals your money.
Most often deliberately used with the conscious intent to send another person a particular message.

The receiver knows that the emblem was sent to him or her deliberately.

The sender takes responsibility for having made the communication.

Just as people are aware of the words they speak, most are aware of the emblems they use. In addition, just like we have slips of the tongue, “emblem slips” can occur, but for the most part the sender is very aware of the emblems being used.

Understanding the origin can help the social engineer understand the emotional state of what the person is saying or not saying based on understanding emblems.

This can sometimes have serious implications. What you see in Figure 3-1 is often thought of as “I love you,” but in certain areas it could be interpreted as a sign for a gang called the Latin Kings. You would want to be cautious with using this gesture in certain areas.

Figure 3-1: “I love you” or a gang sign?
The next figures show a few more examples to prove the point.

In the U.S. the hand emblem shown in Figure 3-2 says, “Stop what you're doing!” If used by an authority figure, it is a commanding emblem that says to cease and stay put until further notice. Yet in Malaysia this hand sign summons a waiter.

*Figure 3-2: “Come here” or “Go away”?

In the U.S. the sign shown in Figure 3-3 says, “Come here.” In Japan it is considered rude to use this sign. In Singapore it represents death.

The emblem shown in Figure 3-4 stands for “Good luck”—unless you are Italian or Turkish. To them it represents the female genitalia. In Asia it is also considered a very obscene gesture.
Figure 3-3: “Come here” or seduction or death?

Figure 3-4: “Good luck” or an obscene gesture?
point I need to bring up is that just because you notice a person is utilizing manipulators, do not automatically assume this proves deception.

Instead, looking for manipulators is a good way to notice a change in someone’s baseline. You should ask yourself how they acted before the conversation got to this emotional level. Noticing their baseline can help the social engineer see indications (again, not deception) of changes to the emotions of that person.

Examples of manipulators are people who play with their hair, hands, or rings. Or maybe they are always adjusting their cuffs, buttons, or other clothing. These indicators can be used to determine if the person is either comforting himself or if he is nervous.

Figures 3-5 through 3-7 show examples of common manipulators you may notice.

**Figure 3-5:** Hand wringing is a common manipulator.

When someone is nervous or unsure, they may wring their hands. Let’s say that Ben’s baseline was hand steepling, discussed later this chapter, showing confidence. Then I started to question him on his whereabouts the other night, and he starts to do what you see in Figure 3-5. That change in the baseline can indicate that something about that question or the thoughts the question brought up made him nervous.

A good social engineer will decide if this is an area to explore more or to leave alone, all depending on the desired emotional level.
Another nervous hand gesture to watch for is if someone starts to play with their jewelry or even buttons and other articles of clothing. Sometimes people play with clothing or jewelry as a pacifier. Maybe the person that gave them that item is a close friend or family member and when they feel uncomfortable they begin to manipulate this article of clothing and it makes them feel less nervous. Again, a great manipulator to watch for during a conversation.

In Figure 3-7, notice another such set of manipulators. If Selena were standing with her arms at her side as a baseline then during the conversation you see her fold her one arm under her breasts and across her stomach while starting to play with her jewelry, this is a good indication of an emotional change. The arm placement may indicate discomfort and the jewelry playing mixed with her facial expression can tell us she is contemplating something, and it isn’t truly comfortable for her.

In *Telling Lies*, Dr. Ekman discusses these important parts of nonverbal language: “Manipulators are on the edge of consciousness” (110). This means that even though a person knows what he is doing, he is reacting to a subconscious trigger to begin the manipulation. This is where watching for the baseline and any changes to the baseline can make a huge difference in understanding changes to emotional content during a conversation.
Noticing these signs can give the social engineer a leg up in engagements. It also can help determine if your actions or line of questions are causing the person discomfort.

**High-Confidence Hand Displays**

As I mentioned, the hands are amazing tools and amazing communicators. They also can indicate when a person is feeling confident. Knowing this is powerful for the social engineer. People enjoy being told good things about themselves, appealing to their egos. A confident person can be influenced using proper ego appeals, which can build rapport fast. The person wants to maintain that feeling at all costs—even giving up valuable information.
The next section goes through a few hand displays that can indicate the person is feeling confident about his or her position. Once you learn to see these quickly and clearly, you will be able to adjust your approaches and opening lines to match the communication style of your subjects. This will allow you to communicate with them in the way they want to be communicated with.

**The Steeple**

This hand movement occurs when the person creates a steeple with his finger. This can be done with one finger (usually the pointer) on both hands or with the whole hand, as shown in Figures 3-8 and 3-9.

![Figure 3-8: The one-finger steeple](image1)

In Figure 3-9, not only is Ben steepling but he is also looking pretty confident, which is when you normally see people steepling.

Figure 3-10 shows Jordan Harbinger. Through his company, The Art of Charm, Jordan teaches men to have more confidence and to accomplish certain goals. His stance in Figure 3-10 says, “I am confident, I am powerful, and you should listen to me.”

Not only does Jordan have a high-confidence steeple going on here, but his leaning forward posture says he is ready to take charge, and his head tilt says he is trusting. The lean-in is important to notice. If done
too aggressively it can show anger or impatience, but a slight lean in can show some increased interest and even help elicitation more. Jordan nailed it here and his slight lean-in, steeple, and head tilt all show interest and confidence at the same time. There is a lot in this photo that commands the respect Jordan is trying to sell here.

Figure 3-9: The whole-hand steeple
In some cases, steepling is used as a territorial display, basically saying, “I am confident in what I am saying despite your challenge.” Notice in Figure 3-11 how master weatherman Bernie Rayno displays this hand movement during one particularly pressing interview.

What was particularly interesting about this interview was that the more Rayno was pressed into a corner and challenged, the higher he displayed his steeple. Bernie was being interviewed about potential
Figure 3-10: What image does he want to portray?

In some cases, steepling is used as a territorial display, basically saying, “I am confident in what I am saying despite your challenge.” Notice in Figure 3-11 how master weatherman Bernie Rayno displays this hand movement during one particularly pressing interview.

Figure 3-11: Bernie Rayno saying he knows what he’s talking about

What was particularly interesting about this interview was that the more Rayno was pressed into a corner and challenged, the higher he displayed his steeple. Bernie was being interviewed about potential
damaging radiation hitting America from the damage related to the tsunami in Japan. His interviewer was pressing him into a corner and being very aggressive. The more aggressive she got, the higher his steeple was. At one point he was steepling as high as eye level, as seen in Figure 3-12. Often when territory is being threatened or when confidence is great, we can see steeple going higher and higher until the hands are behind the head with the arms out, as shown in Figure 3-13.

Figure 3-12: The more aggressive his interviewer became the higher was his steeple.

Eventually the territorial display will be high enough that it will take on the form of what you see in Figure 3-13.

Figure 3-13: A high confidence territorial display
damaging radiation hitting America from the damage related to the tsunami in Japan. His interviewer was pressing him into a corner and being very aggressive. The more aggressive she got, the higher his steeple was. At one point he was steepling as high as eye level, as seen in Figure 3-12. Often when territory is being threatened or when confidence is great, we can see steeples going higher and higher until the hands are behind the head with the arms out, as shown in Figure 3-13.

![Figure 3-12: The more aggressive his interviewer became the higher was his steeple.](image)

Eventually the territorial display will be high enough that it will take on the form of what you see in Figure 3-13.

![Figure 3-13: A high confidence territorial display](image)
Imagine that Ben is feeling very confident about an answer he just gave to a pressing question. His confidence during his answer might have been joined with a steeple; after his answer you might see that steeple end in what is shown in Figure 3-13. Ben is not only feeling confident here, but he is sure enough to let everyone else around him know that too. This display can be followed by a very confident reflective look as the person focuses on their own thoughts.

**Thumb Displays**
Thumbs are often displayed when a person feels important, confident, sure of themself or wants everyone around him or her to feel reassured. Sometimes thumbs are shown when someone is feeling confident or wants to display high confidence. We can see examples of this in photos taken of businesspeople, leaders, or other important people, as shown in Figure 3-14.

![Figure 3-14](image)

**Figure 3-14:** Using the thumbs in this manner can suggest high confidence or that what a person is saying is important.
Understanding the Language of the Hands

Figure 3-15: “Please come with me.”

Figure 3-16: “You will do what I say.”
Genital Framing

The last high-confidence hand display we will discuss is called *genital framing*. In essence this nonverbal states, “I am a virile young man. Look, here’s proof.” The person hooks his thumbs into his belt loops or pockets, and his fingers “frame” or point to his genitals. Figure 3-17 shows the normal stance that accompanies this nonverbal.

![Figure 3-17: “Look at me; I'm a strong man.”](image)

This nonverbal shows confidence and is a display of dominance. You might not believe this display is still used outside of old Westerns or *Happy Days* reruns. But now that you know about it, you will notice it more than you thought.
Although Figure 3-19 is a steeple, it is a very low confidence steeple because the thumbs are hidden.

Figure 3-19: Hidden thumbs can point to low confidence.
Figure 3-18: Thumbs down for this performance.

Although Figure 3-19 is a steeple, it is a very low confidence steeple because the thumbs are hidden.

Figure 3-19: Hidden thumbs can point to low confidence.
Closed for Confidence

As stated previously, the hands indicate a lot about the person’s emotional state. Whereas high hand signs all point to high confidence, take special notice if the person’s hands display closed nonverbal signals.

Maybe the person is standing with his hands behind his back or in his pockets, as shown in Figure 3-20. Watch for other indicators, and see if this display can point to a lack of confidence.

Although Ben has a confident stance here, hiding his hands can indicate he might not be feeling as strong as he is trying to portray.

Some other key hand movements to watch for are involved in the way someone may point at another person. Pointing in a quick jabbing motion can indicate impatience, emphasis, or even anger. Whereas pointing with the palm up and the fingers extended can build rapport and reinforce positive feelings in the person you are talking to.

Figure 3-20: Hiding hands can indicate low confidence.
Getting a Handle on the Hands

As you can probably tell, this is a huge amount of information to process, so how can you possibly master it and use it? Practice makes perfect. Maybe more accurately, someone I know in SEAL Team Six will say, “Perfect practice makes perfect.” We don’t want to practice the wrong things and reinforce bad habits. The more you observe, the more you educate yourself on the meanings of these cues, and the more you practice perfectly, the easier it will become to pick up on these little cues.

The next step, once you train yourself to notice these signs, is to teach yourself how to use them. If you walked into an office and you saw the scene shown in Figure 3-21, what would you assume? Take a minute to study the picture.

Figure 3-21: What do you see here?
It is important not to confuse these gravity-defying gestures with being jittery. People might bounce or rock on their feet a lot out of habit or due to discomfort—that would be noteworthy in determining their baseline behavior. How can you determine which it is? Look for sudden changes during the conversation. If someone is bouncing but suddenly stops when asked a question, this can indicate a change in his or her comfort level—in baseline.

In one instance with my son, who has jittery legs, I decided to try to find out the truth about a situation with his friends. I asked him to sit down with me in the living room. As if on cue, his foot started bouncing. I asked him how things were going with his friends. “Good,” he replied. I saw I would have to dig deeper, so after a few mundane questions I asked, “What is the situation between this person and this person?” His foot stopped moving, and he placed it firmly on the floor, pointing toward the door (another indicator I will discuss in a moment). Did this sudden shift mean that my son was about to lie to or deceive me? No. It meant that he went from feeling comfortable to feeling uncomfortable. This in turn meant that whatever
was going on with his friends was directly affecting him. I eventually found out that a situation between two guys in his group was affecting his friendships and upsetting him.

What did the foot plant and point mean? Our feet point in the direction we are going. Have you ever tried to walk straight ahead with your feet pointing inward or outward? Our feet and legs point not only in the direction we are heading, but also in the direction we want to head. You can see this often in conversations where one of the parties no longer wants to be there. Before he excuses himself, you can see his feet and legs shift away from the other party or group. Figure 4-2 shows an example of leg direction.

Figure 4-2: Who’s interested in whom? Look at the legs to decide.
Not only does the direction of the legs and feet indicate whether the person is staying or going, but it also can show interest or disinterest. Much emphasis is placed on the face, especially when it comes to dating. Often, in a dating scenario, one party might show polite facial expressions, even as his or her legs and feet indicate the actual interest level.

For instance, a man may approach a woman who gives a warm smile, but as he approaches, her legs and feet point away from him, or were never moved to point toward him, indicating that her interest lies elsewhere. As a social engineer, it is important to try to pick up on these cues to determine if you have built enough rapport to keep the target’s interest.

Our feet and legs also are used in territorial displays. If you engage with a target and you notice him beginning to widen his stance, this is a good indicator that he might be feeling threatened and might be trying to establish dominance over his territory. The image on the left in Figure 4-3 shows how things may look when the conversation is going well. Notice that Selena’s and Ben’s legs are close together and their feet are pointed toward each other. If something is said that changes that, or if the person becomes agitated or defensive, you may see what is pictured on the right. Selena’s legs have taken a wider, more territorial stance, and her feet are no longer pointing toward Ben in interest.

Figure 4-3: From comfort (left) to discomfort (right)
One final display I want to talk about is leg crossing. The way we cross or do not cross our legs can say much about our feelings of comfort or discomfort. If you remember when I spoke about the hands, I talked about how open gestures indicate trust and warmth, making the target trust you. Legs have similar power in that they can indicate whether we are happy, open, and warm or are putting up barriers due to discomfort.

For instance, a target sitting as shown in Figure 4-4 indicates high confidence. This comfortable, relaxed pose offers no barrier, saying, “I feel good.”

![Figure 4-4: "I feel confident in what I am saying."](image)

On the other hand, crossing our legs while also pointing them even slightly away from the other person can be a way to create some distance—a barrier of sorts. Figure 4-5 shows this type of leg stance. How
do you feel looking at this image? Is she open and friendly or closed and cold?

We decide whether we will like or trust someone very quickly, and our nonverbal behavior mirrors those feelings. We cross our legs politely toward people we favor, but we use leg crossing as shown in Figure 4-5 as a barrier for those we do not like.

**Figure 4-5:** Is she friendly or not?

Our legs and feet hold a wealth of nonverbal communications. As we move up the body, there are even more. The next section discusses the torso and arms.
In Figure 4-6, both women are leaning toward Ben, but Ben is leaning more toward Selena, indicating that is where his interest truly lies.

Even when the target is seated, the torso can tell us what he or she is thinking. Take a look at Figure 4-7, and decide whether Selena is comfortable or wants to leave.

If you think Selena wants to leave, you are correct. A shift in the torso, maybe toward the front as in Figure 4-7, indicates that Selena wants to leave.

The key with the torso is to watch for the lean. Where and how the target leans can tell you who she likes and who she doesn’t, as well as whether she is comfortable versus wanting to leave. These indicators can help you adapt, adjust, and answer appropriately.
Figure 4-7: Will you stay or will you go?

Remember, if you see a person leaning toward another, that may indicate interest or comfort, whereas leaning away means discomfort or lack of interest. That simple tell can help a social engineer in a few ways. First, if the person you are dealing with leans away from you, you're coming on too strong.

One engagement I was on, I wanted to get some information from a couple sitting on the couch in a hotel. I approached them full head on, all 6 feet 3 inches of me looming over them and leaning into the man to ask my question. What I saw told me I just blew any chance I had: He leaned so far back that he almost pushed his body through the couch. Obviously his interest was in getting away from me.
The Torso, Legs, and Feet

Figure 4-8: This very open display denotes warmth and friendliness.
In Figure 4-9, it is not difficult to intuit that crossed arms are being used to create a barrier between the woman and someone else. Note, however, that crossed arms don’t always indicate a barrier. The person might be cold or might simply be comfortable in a crossed-arm position; other signs must help indicate this emotional level. In Figure 4-9, the torso and leg positions indicate a level of disinterest. Another key indicator is where the arms are crossed. Arms crossed high on the stomach and under the breasts indicates discomfort. This type of arm-cross display is protective, in essence saying, “I am uncomfortable.”
It is important to note that crossed arms alone do not indicate disinterest or discomfort. As with most other body language signs, look for sudden changes to the baseline to help indicate emotional level.

Figure 4-8, on the other hand, shows open ventral displays (described in Chapter 3). The sensitive or front part of the arms is exposed, in essence saying, “I am comfortable with you; I trust you.” If you see the displays shown in Figure 4-8, you can assume you have built rapport.

Besides indicating comfort, ventral displays can indicate confidence. Figure 4-10 shows how ventral displays can be used to claim territory. If not kept in check, this display can seem disrespectful or arrogant.

**Figure 4-10:** When Ben sits this way, he is claiming his territory, but the open ventrals are disrespectful.
In Figure 4-10, Ben is leaning back in his chair with his legs open—a ventral display. His torso lean and arm position can be taken as a lack of respect and claiming territory that may not be his to claim.

Another arm display that many parents often see is the shrug. When mixed with words, what does a nonverbal like the one shown in Figure 4-11 mean?

**Figure 4-11:** The all-too-familiar shrug

What is interesting about this particular nonverbal is not just seeing it when someone is saying “I don’t know,” but seeing it when the verbals don’t match this sign. I’ll give an example to illustrate what I mean.

If you watch interviews, talk shows, presidential debates, or other live events, you may see this behavior. You are observing someone making a speech about something they believe in, perhaps as part of a political campaign.
When you look at this photo, what do you see? Some see arrogance or smugness. Both are good guesses. I see contempt.

Recognizing this expression allowed me to extend myself into Greg’s tribe even more. I also sensed he had some problems dealing with his female boss. “So, Greg, maybe you can help me. I have a pretty rough female boss too. How do you deal with it? Maybe you can give me some pointers.”

For the next 25 minutes Greg poured out his life to me. From then on, if I needed anything, I just had to ask. Being able to read Greg’s facial expression enabled me to alter my communication to be more fitting to him. I built rapport, established trust, and gained the information I needed to succeed.

This chapter will help you learn how to do these things. It incorporates research from scientists such as Dr. Ekman, Dr. Wallace V. Friesen, and Dr. Maureen O’Sullivan, as well as practitioners such as Paul Kelly, a former Secret Service agent and known “truth wizard” identified in Dr. Ekman’s & Dr. O’Sullivan’s research on evaluating truthfulness. You will learn how to read the emotional content of someone’s face and then alter your communication to fit.
Fear

Imagine you are watching a movie, and the music gets ominous as a woman walks through a dark room. The music tells you that something is about to happen; it has preloaded some emotional content for you. Suddenly, an assailant jumps out of a dark corner, wielding a knife. What happens?

You may gasp or scream. Your head and/or body might move back, away from the thing that is causing you fear. These things happen in response to the psychological decision that is “fight or flight.” Your body is preparing for either—in this case, most likely it is flight!

Maybe even more telling is what occurs on your face when you are afraid. As shown in Figure 5-2, your eyebrows rise, your eyes widen, your mouth opens as you gasp, your lips pull back, and your face and body get tense.

![Figure 5-2: All the classic signs of fear](image)

Note the tightness of the raised upper eyelids that show the white of the eye above the iris, and the horizontal pulling of the lips. If you saw this facial expression on a target, you probably could identify the
emotional content within. However, someone who is afraid doesn’t always display all of the physical responses just mentioned. Sometimes the signs of fear are much more subtle. Maybe the fear emotion doesn’t actually scare you but instead worries you—an emotion closely linked with fear.

As I mentioned in the preceding section, feelings can define this emotion in more depth—feelings such as scared, afraid, petrified, terrified, worried, and panicked.

Suppose you are trying to gain access to a building while working as a professional social engineer. Your request needs to be approved, and the person you are talking to is worried about making the wrong decision but is trying to conceal his feelings. After you make your request, you might see the expression shown in Figure 5-3.

![Figure 5-3: Signs of worry](image)

When someone is worried, his eyebrows rise, and you see some tension in his forehead. In Figure 5-3, Ben is showing signs of worry that can confuse his fear with sadness. While the eyes, upper lids, brows, and mouth differ, a common feature is the isolated wrinkling of the central area of the forehead. His eyes may widen as he contemplates his decision. Since you
Pull your lips horizontally, as shown in Figure 5-5. Try saying the word “Eeek!” like you just saw a mouse—that expression draws the muscles of the mouth laterally.

- Raise your eyebrows while tensing your upper eyelids to reveal the white of the eye above the iris.

Figure 5-4: The upper eyelids are raised, and the eyebrows are raised and pulled in.

Figure 5-5: The mouth is laterally open, and the lips are stretched horizontally.

The fact that Selena’s forehead and eyebrows are covered by her hair brings up an important point: Even with the face partially covered, we can clearly see that this is fear when we see both the eyes and mouth. Practice these aspects of fear in a mirror, and notice any physiological changes that occur. If you have a hard time reproducing fear, stand in
front of a mirror, open your eyes wide, and say “Eeeeeek!” while pushing your head back. That will create the mouth shape of fear and the neck tension that will help you see how this looks and know how it feels.

**Surprise**

Closely linked to fear, surprise has some similar displays. Fear and surprise are often confused. Suppose you have been traveling for a week on business. On the way back you have a nagging feeling that you have forgotten something important. You figure that you'll remember later, so you go home to rest.

You pull into your driveway. Your house is dark. You unlock and walk through the door and flip on the lights. Thirty people jump out and yell “Surprise!”

What happens? With surprise, the eyes open wide, the eyebrows rise, and the mouth drops open with an audible gasp (see Figure 5-6). Often the emotion of surprise causes the person to lean away at first, and then toward the object of surprise when he realizes he is safe.

*Figure 5-6:* The differences are subtle, but this is surprise, not fear.
The Breakdown

Taking the time to practice the steps in the breakdown will help you to gain experience in making, feeling, and seeing the expression more clearly.

The muscular movements involved in surprise are as follows:

- Raise your eyebrows while widening your eyes as much as possible, as shown in Figure 5-7. In surprise, however, the eyebrows are more arched/curved than in fear.

- Your jaw may unhinge slightly to open fully, as shown in Figure 5-8. (Think of the term “It was a jaw dropping experience!” or “When I told him, his jaw almost hit the floor!”)

- You may audibly gasp while making an “Oh” sound.

Figure 5-7: The eyes are wide, but even more so in fear.

Figure 5-8: Notice the mouth opening: The lips are not pulled back.
I was out the door with a smile, a good feeling, a clean resume, and a remote connection to the company’s network.

Was my facial expression the only reason I succeeded? No, not at all, but my expression added weight and believability to my story. If done right, this expression can make the person viewing it feel sadness, empathy, and compassion.

The caveat with this facial expression is that sometimes when we feel nervous, we can show sadness or fear. If your pretext is that you are confident, self-assured, and ready for action, but you show sadness, this can send mixed messages. Be cautious about leakage on your facial expressions.

The Breakdown
Sadness is a complex facial expression with many components. Understanding how to read, re-create, and display this facial expression is a powerful ability for any social engineer.
Sadness is composed of the following:

- The mouth may drop open, or remain closed but the corners of the lips are pulled down, as shown in Figure 5-10.
- Hold your lips in that position while raising your cheeks, similar to squinting.
- Look down while letting your upper eyelids droop, as shown in Figure 5-11.
- Another aspect in these photos is that the head may drop and the forehead may be tense, creating some isolated wrinkles there, as in Figure 5-11.
- Also, note that in classic expressions of sadness, the inner corners of the eyebrows come up and together, forming an inverted “V” shape (see Figure 5-11). Dr. Ekman notes that few people can direct this combination of AU movements intentionally. PK notes that those who can are likely to influence others favorably in evoking sympathy. He cites the actors Woody Allen and Nathan Lane as masters of their eyebrows, and now Amaya.

![Image of a person's face showing a slight downturn]  
**Figure 5-10:** Even slightly downturned lips and raised cheeks create a clear picture of sadness.
In extreme grief we can see the mouth opened more and the lips turned down. In Figure 5-10, the sadness is subtle, yet you can see the corners of Amaya’s mouth turning down.

One important point to remember is that sadness can be seen clearly in the eyes. Even if the mouth is not downturned, or the face is partially covered by clothing, we can see the emotion in the eyes.

One very hard aspect of sadness to control is the eyebrows, as shown in Figure 5-12. In some cases of sadness you see the following:

- The inner corners of the eyebrows go up, not the entire eyebrow.
- The brows are pulled up and together in the middle.
- The eyes still droop.
- A pouting protrusion of the center area of the lower lip
In extreme grief we can see the mouth opened more and the lips turned down. In Figure 5-10, the sadness is subtle, yet you can see the corners of Amaya’s mouth turning down.

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- The brows are pulled up and together in the middle.
- The eyes still droop.
- A pouting protrusion of the center area of the lower lip
Ralph quickly caught himself, smiled, and caught up with the group. He didn't want to be ousted from the tribe. I walked up to him and said, “Ralph, I'm new to the company, but listen, what that guy did was really stupid. He seems like an arrogant jerk.”

Ralph looked at me as if I could read minds and said, “He isn't that bad. He just thinks more of himself…” and his voice trailed off.

“Well, either way, I'm sure you'll kick his butt next month.”

By then we had approached the front door, which he held open for me as I tailgated into the company. He thanked me for the ego boost. He went his way, and I went mine. Being able to quickly read and react to facial expressions helped me see an opportunity to interact with someone on an emotional level that made him feel accepted. That interaction led me to success, and I was able to infiltrate the building.

Contempt is one of those emotions that I do not recommend mirroring. As a social engineer, I may see contempt and use it (as in the case of Ralph), but I do not want to add to that feeling. Contempt, if harbored, can turn into anger. Because it can lead you down a negative path, I like to leave this emotion behind.
The Breakdown

Contempt can include feelings such as superiority, smugness, or arrogance, and it is always unilaterally shown, or shown just on one side of the face, with one corner of the mouth pulled up, and the cheek and/or dimple on that same side accentuated. A social engineer needs to be able to pick out the signs and even subtle hints that a person may be feeling contempt. Look for these signs:

- One side of the face is raised, as if the cheek is pushing up to squint, as shown in Figure 5-14.
- The chin can be raised, as shown in Figure 5-13, making it easier to look down at the object of contempt.
- In many cases, contempt displays a raised cheek muscle on the same side of the face as the upturned asymmetrical lip, as shown in Figure 5-15.
- One you learn to recognize contempt, it is perhaps the easiest emotion (after happiness) to observe. You may be surprised at how often you see it, but remember the “why” question!

![Figure 5-14: Notice the raised cheek.](image)

When one side of the mouth and cheek is raised for contempt, it sometimes creates a sort of smirk. This unilateral display can be followed by a nod or another gesture indicating the feelings of arrogance.
I can't say this enough: Contempt is an easy emotion to miss for the untrained, but it's an important one to pick up. Once you learn to recognize contempt, it will jump out at you.

To illustrate the point about contempt, I'll relay a story PK told me of when he was able to see and use this expression. Once, while he was in an Arab country, his host invited PK to dine with him, but pointedly asked that they not order alcohol while at his table. This is a very common request in Islamic cultures. However, PK told me he noticed a micro of contempt appear on the face of one of his colleagues. Later, after developing rapport with the assistant he was told that the host was a “hypocrite” because he himself often imbibed alcohol while traveling abroad. The assistant, though junior to the host, likely felt he was the more devout Muslim because he never drank alcohol.

If you see it during an interaction and you are unsure why, reevaluate and assess quickly if you need to change something about your approach or body language. Ensure you are not being too aggressive in your approach or speech, and that you do not use any offensive language or jokes. In addition, before you even go out on an engagement make
sure your appearance is not offensive in any way for the crowd you are targeting.

**Disgust**

While contempt is always directed toward a person, disgust can be triggered by a smell, taste, touch, sight, or even thoughts of something or someone—even yourself or your own actions. Disgust can trigger a strong physiological response in someone. When things disgust you, how do you feel? Some people gag at the sight of blood. Others feel sick when they think about vomit. Maybe while reading this short paragraph you started to display the expression shown in Figure 5-16.

![Figure 5-16](image)

*Figure 5-16:* In this disgust expression, we can see both disgust and hints of anger.

In my discussions with PK, he told me that disgust is often missed when people are tested on it and in real life because they don’t recognize it for what it is. Yet training ourselves to see disgust when interacting with others can change our communications profoundly. When asked to name Ekman’s seven universal emotions, most people list happy, sad, surprise, fear, and anger quite quickly. They seldom mention disgust or
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contempt, yet both are important to the social engineer. Though disgust is often confused with anger, each has its own unique characteristics.

Imagine a law enforcement officer interviewing a suspect, asking about a missing person, and seeing a flash of disgust on the suspect’s face. What would that tell you? The officer needs to head down this avenue of questioning more deeply. The officer needs to find out if the suspect is disgusted at the officer or is imagining a scene of violence or something else that can bring up that emotion.

Once you are trained to see this expression, as PK puts it, “You will see it a lot more than you want to.”

The Breakdown

Disgust is broken into a few different areas that the social engineer can try to pick up and use in interactions. Try to notice these signs:

■ The nose wrinkles, as shown in Figure 5-17, almost as if to shut off the nose to an offensive smell. Often, wrinkles will appear on the bridge of the nose.

■ The lips become furled and in some cases can even open, showing part of the teeth. Figure 5-18 shows disgust with both closed and open lips. In classic disgust, the upper lip is drawn up to the nose, exposing the upper teeth.

■ The brow can become furrowed to an extent that the offensiveness of the object of disgust can cause irritation, as shown in Figure 5-19.

Figure 5-17: Notice the nose wrinkling.
Figure 5-18: With disgust, the lips may be closed or open. Either way, you can see the lips furl, exposing the upper teeth almost in a snarl. The cheeks often sharply crease to form a large inverted “U” shape going from one cheek across the bridge of the nose, to the other.

Figure 5-19: Disgust can be followed by anger or irritation, as shown in the eyes and eyebrows. Though the eyebrows may come somewhat down and together, as in anger, no glare of the eye is evident as in anger.

It is hard to breathe through the nose when this expression is in play. The body tries to block this offensive object from our smell and sight.
I could tell this man was angry. As I got closer, I pulled out my phone to pretend I was answering, and then I slowed my pace so that I could hear what he was saying.

I overheard what sounded like a minor argument between the man and a vendor. This was a good opportunity for me to make a pretext change. From the comments he was making, I knew that the vendor he was talking to manufactured time clock systems. I walked in the door and up to the front desk and said, “Hi, I’m Paul. I’m here to check out your time card system. The boss told me you’re having some major issues with your present vendor, and you wanted a competitive quote. Can you tell me where I can check the server?”

The receptionist took me through the locked doors to the server room and yelled to one of the IT guys: “Roy, Paul here needs to get in and check the time card system. He’ll fix all our problems.”

This is an instance in which seeing anger led to my success. Another example where I didn’t do so well was one time when I was interacting with a target and he started talking about a female coworker in a derogatory way. I felt myself getting a little heated, and he must have
In addition, the face displays a lot of tension and furrowing. Recreate these with caution, as you will feel angry:

- Pull your eyebrows down and together, almost like you’re trying to touch your nose to the inner part of your eyebrows, as shown in Figure 5-21.
- While you are doing this, try to create a glare (shown in Figure 5-21).
- Your lips are pressed together tightly. Or, if they are open, as in Figure 5-22, your teeth are clenched, with a tight jaw.
- The chin often is lowered to protect your neck. (Fight not flight!)

![Figure 5-21: The brow furrowing and stare are intense.](image1)

![Figure 5-22: A tense jaw and clenched teeth are indicators of anger.](image2)

These pictures don’t show intense anger, but these subtle hints are still important to notice. When you look at this expression, even with its subtle hints, as a whole it is much easier to pick up this anger emotion.
Dr. Ekman often refers to the *sincere* smile versus the *polite* smile. In a sincere smile, shown in Figure 5-23, we can see that Selena’s mouth and eyes are engaged. The wrinkles on the outer corners of the eyes, sometimes called “crows’ feet,” are a characteristic of the sincere smile. In fact, you can see happiness in her eyes even if you can’t see her mouth. In addition, there is a “twinkle” in her eyes that just doesn’t exist with the “social smile,” shown in Figure 5-24.

*Figure 5-23:* With the Duchenne smile, the mouth is raised, and the eyes are involved.
If you display a social smile, the average person may not look at you and think, “Wow. That person is using only her zygomatic major and not the orbicularis oculi. That smile is definitely fake.” But the person may feel uneasy because she senses that you are not displaying a true emotion.

A social engineer wants to make her target smile, feel good, and always view her as trustworthy. A sincere smile does all that. In their study “The Value of a Smile: Game Theory with a Human Face,” researchers Scharlemann, Eckel, Kacelnik, and Wilson indicate that the simple act of smiling creates a bond with the person you are interacting with, telling him that you are trustworthy and want to encourage his happiness. To read the full article, visit www.sciencedirect.com/science/article/pii/S016748700100599.

Knowing all this, it behooves the social engineer to ensure that he or she can master this emotion despite nervousness, fear, anger, and other feelings. What helps is mixing in other aspects, such as a head
tilt (discussed in the next chapter), open ventral displays (discussed in Chapters 3 and 4), and a lower tone of voice (discussed in Chapter 2).

The Breakdown

Follow these steps to create a sincere smile:

1. Start by thinking about something that makes you happy.
2. Raise your cheeks while bringing up the corners of your lips, as shown in Figure 5-25.
3. Without squinting, raise your cheeks. Doing so pushes up your eyes, giving you crow’s feet (see Figure 5-26).

**Figure 5-25:** Notice the way the cheeks are raised bringing the lips up in a smile. The sincere smile involves much more of the face—the mouth, the cheeks, the chin—and some blushing may even occur.

**Figure 5-26:** The eyes are where we see the true happiness.
For the social engineer, this is a huge tell. You can clearly see the emotion Ben is feeling and how it affects him. At this point, a smart social engineer will quickly determine if he can push harder or back off, depending on the goals of the engagement.

This short chapter is about noticing these subtle or not-so-subtle signs of comfort and discomfort and how a social engineer can use them. The following sections break this topic into a few areas you can watch for.
Neck and Face Pacifying

In addition to the neck-rubbing behavior just discussed, the social engineer can notice other signs that can be strong indicators of discomfort. The key is to watch for a change in behavior that indicates that something is making the target uncomfortable.

Similar to when a man rubs the back of his neck, when a woman feels scared, threatened, or worried, she often covers the area of her neck called the suprasternal notch, as shown in Figure 6-3.

![Image of a woman covering her neck]

*Figure 6-3: This neck-pacifying move shows discomfort.*

I have spoken with people who have reviewed security videotapes after a child has gone missing in a store. They have noticed that the first thing the mother does is the gesture shown in Figure 6-3.

Another thing that a social engineer may see is a baseline of comfort transition into face rubbing, as shown in Figure 6-4.

These moves, when noticed, can tell the social engineer that the person is feeling threatened, unsafe, or uncomfortable with the decision or situation at hand. Dr. Ekman and other psychologists might classify such nonverbal movements as “manipulators.”
When you're trying to make hard choices, it can be comforting to rub or touch two nerves that run through the neck and upper chest—the vagus nerves and the carotid sinus.

**What to Watch For**

As a social engineer, watch for changes in these behaviors. It is important to notice if someone is comfortable when you first approach him but then starts rubbing his face or neck. If you see this happen, quickly determine whether something about you or something you said caused this behavior.

I was talking to a law enforcement agent once about face and neck rubbing. He told me about a time when he went to a home to inquire about the whereabouts of a relative of the residents, who was fleeing from the law. Every time my friend brought up the person's name and a certain location on their property—the garage—he noticed that the mom would move her hand to her neck, as seen in Figure 6-3. After seeing this happen a couple of times, he decided to pose the question
Mouth Covers

While reading a newspaper or magazine story about some disaster, it is not uncommon to see people at the scene displaying what is seen in Figure 6-5.

![Mouth open and covered in shock or surprise](image)

**Figure 6-5:** Mouth open and covered in shock or surprise

As mentioned in Chapter 5, when we are scared or surprised, we gasp to prepare for the “fight or flight” response. It is believed that we cover our mouths as an automated response to self-comfort, much as we self-comfort using face and neck touching. The shock, surprise, or fear is followed by a feeling of discomfort, which is followed by self-comforting actions.

If you see a calm baseline change to the type of action shown in Figure 6-5, reevaluate your approach and make sure you are not the one who is causing the shock.
Figure 6-6: Pursed lips are tight like in anger.

Figure 6-7: Showing some signs of uncertainty
Although by itself none of these is a clear sign of deceit, if a social engineer sees these signs, he or she can target that area of information to see if deception is in play.

One last lip display I will discuss is one of high discomfort. Lip biting indicates anxiety, as shown in Figure 6-9.
Figure 6-8: Discomfort and uncertainty

Although by itself none of these is a clear sign of deceit, if a social engineer sees these signs, he or she can target that area of information to see if deception is in play.

One last lip display I will discuss is one of high discomfort. Lip biting indicates anxiety, as shown in Figure 6-9.

Figure 6-9: Lip biting and signs of anxiety
Understanding Nonverbal Displays of Comfort and Discomfort

As shown in Figure 6-9, you can see anxiety not only in Selena’s lip display, but also in her eyes. The wideness of her eyes is similar to what you might see in fear or surprise, indicating she may be feeling anxious. Some people have a habit of doing this, so notice when it starts and stops, because it can indicate a baseline; then look for changes. Generally this display occurs when someone feels anxious.

Sometimes the lips are not the only things that get bitten when someone feels anxious. You may also see displays similar to Figures 6-10 and 6-11.

Figures 6-10 and 6-11 both show a display that can indicate contemplation, anxiety, or thought (cognitive load).

**Figure 6-10:** Finger biting is another sign of anxiety or nervousness.

**What to Watch For**

In all these lip displays, a social engineer would be smart to look for changes. Notice when a person starts these displays, and remember the conversation or questions that occurred at the time. Similarly, a person licking his/her lips, along with all the other lip displays, can fall into the category of nonverbal manipulators. An increase in displaying
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Manipulators is a departure from a baseline—and can be a hot spot for you to note.

These can all be indicators of stress, anxiety, or holding back—all good signs that discomfort is setting in or has set in.

As a social engineer, you should notice if your communication is causing this reaction and then adjust your behavior. Similar to other areas mentioned in prior sections, you can use your own lip displays, subtly, to influence someone’s emotions.

Figure 6-11: Object biting or chewing can indicate nervousness or contemplation.

For example, when you ask someone for a favor, a little lip bite or pucker can show that it is difficult for you to ask, eliciting sympathy from the person. Or suppose you’re telling a story, and you get to the details of how you might lose your job if this task doesn’t get done. Displaying some lip pursing can add weight to your story, showing how difficult it is for you to say what you have to say.

Whether you are watching for these signs or using them, learning to recognize their meanings can make a huge difference in your success as a social engineer.
Eye Blocking

Often when someone is extremely sad, she squeezes her eyes shut or even covers them, as shown in Figure 6-12. Why? A physiological response causes us to block or cover the object making us sad. This same display can be seen when someone is not extremely sad but is trying to block an object that irritates, saddens, or angers her.

Figure 6-12: Eye blocking is a classic sign of sadness.

If you see the person you are engaged with displaying this sign, it is a good idea to analyze the topic of conversation—the “why” question—and see if it is a basis for this emotion.

When I was young, a popular kind of insult began with “Your mom” or “Your mama.” It seemed to fit any situation, and it generally brought smiles and laughter. One time I was with a close friend, and we were trading insults when I threw in a “Your mom.” I was met with something similar to the image shown in Figure 6-12 and then some tears. I had forgotten that, only a couple weeks before, my friend’s mom had died. My insensitive and callous remark caused her to think about her painful loss, and she tried to block out the object of that pain: me.
The key is to notice if the display starts at a particular point. Suppose you approach a group and notice a woman standing with her arms at her sides. She sees you coming and crosses her arms. This may be a good point at which to analyze your approach to see if it is causing her discomfort.

Reviewing the circumstances, the surroundings, and what might have changed can give you a good indication of emotional changes. A good social engineer will analyze a person’s level of discomfort, try to determine the cause through observation and questions, and then adjust accordingly.

The last comfort display I will discuss in this chapter is head tilts. This concept is similar to open ventral displays. A good head tilt, combined with a smile, is a powerful tool. Just remember that the smile must be genuine, and the head tilt must be subtle. A fake smile and severe
head tilt will make you look deranged, not trustworthy. But the proper angle will give you a powerful sense of trustworthiness and friendliness, as shown in Figure 6-14.

![Image of Ben with a genuine smile and subtle head tilt](image)

**Figure 6-14:** The comfort of a good head tilt and smile

Here Ben displays a genuine smile and a subtle head tilt. This display says, “I trust you, and I’m happy to see you, so you can trust me.” This high-comfort display creates a warm feeling in the person you are interacting with, as shown in Figure 6-15. This display says to the person you are talking to, “I trust you, so you can trust me.”

Selena is happy, trusting, and ready to participate in this relationship. You can see that her whole face is involved in the smile, and her head tilt, not as subtle as Ben’s, says that she is open.

Mixing the head tilt and smile with an open ventral display is a powerful tactic. Former U.S. president Bill Clinton had this down pat. He would hold up his palms, smile, tilt his head, and invite you to join his cause. He won the hearts of the American people using this nonverbal display.
Former U.S. vice presidential candidate Sarah Palin also tried to use this display. She had a great smile and a good head tilt, but when she used her open ventral displays, she often added a shrug to the mix. This one gesture made her seem unsure of herself and her message.

**What to Watch For**

As a social engineer you want to watch yourself when it comes to this display. When you get nervous, you become tense, and tension will make you look rigid and stiff. If you're tense, you won't be able to give a good head tilt and smile. So, firstly, watch your own displays and make sure you are showing the proper emotions for your pretext.

Also, I know I said this a lot in this section, but I can't tell you how important it is to continually watch for subtle changes in the baseline that can be hot spots. Recently my wife was telling me about a situation in which she was with some friends. While telling the story, she had a warm smile, and she was open. I asked her about a particular person and she crossed her arms in front of her, her voice lowered and she became
Additional research indicates that the amygdala has a dense core of nerve nuclei that processes input from all modalities, or senses. In essence, all our sensory input passes through this area of our brain and then is projected to various brain regions.

Researcher D.G. Amaral states in his 1992 research that “the amygdala has dense projections to many brain regions, including the brain stem, hypothalamus, hippocampus, basal ganglion and the cortical regions.” These regions all play a part in processing emotions and our responses.

How the Amygdala Processes Information

Wataru Sato from Kyoto University in Japan released an excellent paper titled “The Information Processing Role of the Amygdala in Emotion.” He breaks down the processing roles of the amygdala and how our sensory inputs and outputs are affected by that processing.
Each principle is displayed nonverbally in a certain way that either adds to or detracts from the message being portrayed. The following sections examine a few principles and discuss how nonverbal communications affect them.

**Artificial Time Constraints**

As I mentioned previously, one of the first questions that we ask internally when a stranger approaches us is, “How long will you be part of my life?” Even if we answer the other questions that may be internally asked, leaving this one unanswered can make the person feel uneasy.
Action Unit 1: Inner Brow Raiser

One large muscle runs vertically from the top of the head to the eyebrows, covers almost the whole forehead, and raises the eyebrows. To use this muscle, pull up the inner portion of the eyebrows. This causes the eyebrows to form an oblique shape, and the skin in the center of the forehead wrinkles (only in the center—not across the whole forehead). Figure 8-2 shows Dr. Ekman performing this action.

![Figure 8-2: Action unit 1 from the FACS program](image)

Action Unit 2: Outer Brow Raiser

The lateral part of the same muscle that helps create AU1 creates AU2. This action pulls up the eyebrows and adjacent skin. To create AU2, pull up the outer portion of the eyebrows. Doing so arches the eyebrows and stretches up the outer portion of the eye fold. Sometimes short wrinkles appear in the lateral portions of the eyebrows. Figure 8-3 shows this action unit.
Figure 8-3: Action unit 2 from the FACS program

Action Unit 4: Brow Lowerer

Three strands of muscle run through the forehead and help control this action unit. Typically all three of these strands act together, although more of one strand than another may be involved in any of these actions. To create AU4, lower the eyebrows—the inner portion, the middle, or the whole brow. Contracting the muscles in this manner pushes down the eye fold cover, narrows the eye aperture, and pulls the eyebrows closer together. While pulling down the brows, do not wrinkle the nose. Figure 8-4 shows an example.

These details are pretty technical, but they are essential as a baseline for understanding the next section. As I talk about these conversational signals, I will refer to AU1, AU2, and AU4 used individually or in various combinations.
Conversational Signals of Emotions

Just as certain facial expressions indicate an emotion, you can look for signals during a conversation that can indicate an emotion that the person is feeling. The paper Human Ethology outlines the emotions I spoke about in Chapter 5 with these action units.

For instance, in surprise you notice both AUs 1 and 2. Both the inner and outer parts of the eyebrows are raised and arched, followed by the raising of the upper eyelids and the dropping of the jaw. In fear you see AUs 1 and 2, as well as 4 in combination with the raising of the upper eyelids, tightening of the lower lids, and stretching of the lips. In anger you notice AU4 with the brows coming down and together, and with a tightening of the lips and lower lids. In sadness you notice either AU1 or AUs 1 and 4, forming the brows in an inverted V. This is combined with the relaxation of the upper eyelids, slight raising of the cheeks, and depression of the chin.

AU4 can be seen in some expressions of both disgust and happiness, where the brows are lowered, though often more slightly in happiness.