Basic Communications Models

Hide All THE TRANSMISSION MODELShannon and Weaver's model of communicationEinar Faanes[Wikimedia Commons](https://commons.wikimedia.org/wiki/File:Communication_shannon-weaver2.svg)

The most influential model of communication in the past century came out of the work of Claude Shannon, a researcher for the Bell Labs (the research laboratories of a national telephone system). Shannon was asked to work on a problem vexing telephone communication in the United States at the time: noise, or static, in the lines. The prevailing view was that noise in the lines mainly posed a technical problem: that is, the solution lay in the development of finer wires and more expensive transmission equipment. Shannon's insight was that a more efficient solution lay in the development of information algorithms. He worked out a set of mathematical formula that could predict the level of message decay over long distance (not surprisingly, these formulae are similar to those describing the laws of entropy in physics). Shannon defended the idea of reducing information to bits, convertible into zeroes and ones, and thus laid the very foundation of the digital age.

The Transmission Model of Communication[A Primer on Communication Studies](http://2012books.lardbucket.org/books/a-primer-on-communication-studies/s01-introduction-to-communication-.html)

Shannon's essay was written for a technical audience. However, Warren Weaver, a science writer housed at the Rockefeller Foundation, quickly realized that the basic model of communication designed by Shannon had broader implications. He wrote a version of Shannon's essay, which appeared in the July 1949 Scientific American, under the title "The Mathematics of Communication." Later, the University of Illinois Press combined the essays and published the book as Shannon and Weaver's The Mathematical Theory of Communication(1949). The new model proposed revolutionized the study of communication.

**THE MODEL**

Shannon and Weaver's model is straightforward. It imagines communication as a linear (left-to-right) process, where the sender encodes a message, which is transmitted through a channel, potentially interfered with by noise, and then decoded at the other end. Recalling Shannon's purpose in devising this model (the noise problem) helps explain some of its apparent shortcomings. One immediately notices how the terms derive from the metaphor of the telephone, with receivers and transmitters. One also notices that the model seems to ignore the two-way nature of communication, even over the telephone (later this was called feedback), but that wasn't particularly relevant to Shannon's technical problem. And the model doesn't seem to care very much about the content or context of the message – what goes through the wires might as well be monkey screams as a human conversation. Again, that nature of the content was not really relevant to Shannon's work.

David Berlo was among the first to recognize that, for all its flaws, the Shannon-Weaver model described something more than basic telephonic transmission. One can use these terms as a metaphor for nearly all verbal interaction. For instance, when a professor lectures to a class, she encodes her message. It is sent through the air, can be interfered with by noise, and is in turn received and decoded by listeners. Application of these terms requires some modification. Noise, for instance, is not simply the interference arising from competing sound sources (like the air conditioner or heating vent or others in the crowd). It might also describe other things that "get in the way" of the message, such as differences in language competence between speaker and listener.



**BASIC COMPONENTS**

For decades, the Shannon-Weaver model, as adapted by theorists like Berlo, served as the dominant conception of the communication process. Basic components of the Shannon- Weaver model include sources and receivers, encoding and decoding, messages, a channel, and noise. Sources and receivers

Every person who communicates is simultaneously a source and a receiver, speaker and listener. By writing, speaking, or gesturing, one becomes a sender; by reading and listening, one becomes a receiver. Shannon and Weaver's early model has been criticized for emphasizing the one-way flow of communication.

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Encoding and Decoding

When people convert their thoughts into a message, they are encoding. When they convert messages back into thought, they are decoding. The idea is that messages are communicated in a kind of code, in this case in the code or symbol system called language.

Messages

The term "message" names the substance of our communication. While we normally imagine messages as linguistic (verbal, or written down), they may also be non-verbal: our gestures communicate meaning just as surely as the words accompanying them.

Channel

The "channel" is the medium in which the message circulates. Some scholars describe channels as mainly corresponding to the human senses, and so you may see references to the "tactile channel" (which refers to the medium of touch) or the "visual channel." Others prefer to describe channels using a more technological than physical language, and so the reference may be to the air through which messages pass, or the electronic signals into which messages are converted. Those who speak of channels in this way may refer to radio as a kind of channel separate from television or speaking into the air.

Noise

In Shannon and Weaver's basic model, "noise" was a literal reference to static in the phone line. Communication researchers now think of noise as naming a much broader range of things that hinder communication. We might think of noise as anything that interferes with the communication process, and this might range from physical distractions (e.g., a buzzing light fixture or physical tics) to cultural differences (e.g., varying levels of education or cultural traditions that impede understanding). Some refer to other kinds of "noise," like semantic noise (simple misunderstandings that get in the way) or psychological noise (the way our mind wanders, or the way our stereotypical thinking undermines comprehension). Each of these ideas names factors that block the message from getting through.

**SHORTCOMINGS**

The Shannon-Weaver model assumes that meaning enters at one end of the "pipeline" and exits, ideally unchanged, at the other end. But such a model suffers from some shortcomings that have since been addressed by other communication theories. For example, the one-way nature of the Shannon-Weaver model seems to ignore the process of feedback, the give and take of communicative interaction that inevitably occurs when people assemble for the purpose of exchanging their ideas and thoughts. The one-way nature of the model also underestimates the importance of communication as an ongoing process. We do not simply talk at each other; we participate in a back and forth process that makes us simultaneously senders and receivers, encoders and decoders. Another shortcoming is that the Shannon-Weaver model views meaning, which is the substance of talk, as unproblematic, and judges a communication interaction as successful if the same sounds that go into the pipeline come out at the other end. Needless to say, this understanding greatly oversimplifies the complexities of human interaction.

THE INTERACTIVE MODELThe Interactive Model of Communication[A Primer on Communication Studies](http://2012books.lardbucket.org/books/a-primer-on-communication-studies/s01-introduction-to-communication-.html)

The interactive model was proposed by William Scramm in 1954. Schramm started with the basic elements proposed in the transmission model, but tried to capture the interactive nature of human communication. In this ways, the model differs from the transmission model in that it focuses on human behavior rather than the technological process of communication. It incorporates feedback from participants and presents human communication as an interactive process where each participant alternates between the role of sender and receiver. The model also takes into account the participants' past experiences and the impact of these experiences on the communication exchange. Understanding between the participants is only reached when the message sent taps into a common field of experience in the decoder

**SELF-CHECK**

Do you think this model more accurately portrays human communication? Is there anything missing? If so, what?

THE TRANSACTIONAL MODELTransactional Model of CommunicationJason S Wrench[Wikimedia Commons](https://commons.wikimedia.org/wiki/File:Transactional_comm_model.jpg)

The main drawback to the interactive models was that it did not indicate that people can send and receive messages simultaneously. Gone is the early idea that communication produces easily identifiable speakers and receivers. In fact, often we simultaneously receive and send messages, even if some messages are non-verbal. Gone too is the early idea that audiences are passive receivers of messages who have ideas implanted in their ears just as little birds have worms planted in their mouths. A transactional model emphasizes the active role played by audiences, not only in providing feedback, but in applying their own experiences and histories when it comes to making sense of what others say.

The Transactional Model of Communication[A Primer on Communication Studies](http://2012books.lardbucket.org/books/a-primer-on-communication-studies/s01-introduction-to-communication-.html)

This model considers communication a dynamic and ongoing process. When we talk, we not only respond back and forth, but we shape and alter future interactions by our prior interactions. One of the popular catchphrases of transactional theory is, "You cannot not communicate." That is, whenever we are involved in a communication situation, even when we are relatively passive, we are always sending messages that will be interpreted by our dialogue partner. These messages may be unintentional, nonverbal, or quite explicit. The catchphrase draws attention to the pervasiveness of communication.

If transmission is at the heart of the Shannon-Weaver model, shared meaning is at the heart of the transactional process theory. Thus, it was thought insufficient to imagine that communication is successful merely because transmission was completed; for successful communication to occur, one must have actually shared meaning. The view that communication requires shared meaning is both a strength and a weakness of the transactional view. It seems to mark definite progress conceptually since much of our communication aims to share ideas. However, it is a weakness in the sense that openness and clarity and sharing are often not the purposes of our talk. We often purposely make our talk ambiguous, if only to smooth social relations (as in, "Yes, Mom, this is the best meatloaf I've ever had!"). The transactional model does not seem to account very adequately for this very common type of communication.

WHY COMMUNICATION MODELS MATTER

Although these models of our symbolic interaction with others may seem a bit arcane, they call to mind several important lessons and serve to ground our efforts to understand the complexities of human communication.

Each of these models calls our attention to the separate but interlocking dimensions of communication exchanges. When we talk, we simultaneously play many roles, including those of encoders and decoders, transmitters and receivers, and translators who struggle to make meaning despite our differences. As we work with the major communication-related research traditions in the coming weeks, these aspects of interaction will be brought back to our attention. The models also remind us of the essential connections between substance and style, medium and message, producer and audience. A central finding of communication scholarship is the vital centrality of an audience: our words are not randomly scattered to the wind, but rather they are addressed to particular individuals with their own views of the world. Our words are not unchanged by the environment of their transmission. To the contrary, our meanings are constantly transformed by the circumstances of their production and the manner by which they are conveyed. Consider as an example, the fiery preacher who in the live performance space of a church or assembly hall conveys only passionate engagement. In what Marshall McLuhan calls the "cool" medium of television, that same preacher might easily come across as over-the-top and out of control. The recent media obsession with the Reverend Jeremiah Wright and his possible influence on presidential hopeful Barrack Obama provides a case in point.

We can also see the progression of communication study through these models:

 Why Communication Matters

**FOR MORE INFORMATION**

* [A Rhetoric Primer](http://rhetorica.net/textbook/index.htm)

 Transmission Model Exercise

Basic Principles of Communication

Before we launch into our discussion of communication theory in the next unit, it is important to outline some basic principles of communication.

Show All COMMUNICATION IS INESCAPABLE

We are always communicating whether with ourselves or with others in interpersonal, group or public speaking contexts. Although in America, we put heavy emphasis on the words we use, communication does not occur through words alone. Nonverbals such as eye contact, tone of voice, and even posture communication messages.

COMMUNICATION IS IRREVERSIBLE

Many of us should remember this principle more often than we do. Once we say something, we cannot take it back. The message has been stated and will impact future communication. Think about the times in your life when you may have said something hurtful or unintended and you wish that you could take it back. It's not possible.

COMMUNICATION IS COMPLICATED

As we saw with the models, describing the process of communication in its perfect state is a challngeing task with imperfect results. Now consider the challeges people face when actually communicating that make understanding even more problematic. Factors such as different fields of experience, language and other types of noise, and regional or cultural difference to this process. It is a wonder that we understand each other at all.

COMMUNICATION IS SYMBOLIC

We communicate through the use of symbols. Words and nonverbals are symbols that stand in for the things they represent. For example, if I wanted to tell you about my new dog, I wouldn't bring the animal to you and start pointing. I would use words and nonverbals, such as gestures to describe my dog to you. The words and nonverbals symbolize the parts of my dog. In this way, communication is symbolic.

COMMUNICATION IS CONTEXTUAL

All communication occurs in a variety of contexts that impact the interaction. These include the nature of the relationship between the individuals, the situation in which they are interacting, the environment in which they are interacting, and the culture in which they are interacting. One of my favorite examples to demonstrate the impact of these contexts on the interaction is a case where you call a friend at work to tell them you are upset with them. Their reception of the message is impacted by the fact that they are at work. They may become angry at you for calling them while they are working or they may rush you off of the phone because they don't have time to talk to you. This might make you more upset. In either case, the interaction is heavily impacted by the context.

The Communication Process: Summary

Communication matters because of its pervasiveness in our society. We spend most of our time communicating – sending and receiving messages of one kind or another. We tend to focus on human communication, but the communication that surrounds us takes not only the form of human communication but also the form of data communications. Human communication, often referred to as just "communication," is more centered on the humanities. "Communications" focuses on communication technologies. Several models help us to understand communication. The transmission model (Shannon-Weaver model), the transactional model, and the strategic model of communication have significantly influenced communication research through the early 21st century. These models depict the process of communication as it has evolved over the last five decades.

The communication process is a process we move in and out of hundreds of times per day. We are always communicating or being communicated with. Many people think that communication is all talk – that it deals primarily with the messages we send. In reality, communication also deals with the messages we receive, along with the impact of the other elements (e.g., encoders, decoders, channels, noise, and feedback) on the process of communication. One goal of this lesson has been to broaden your understanding of communication and to help you realize that human beings simultaneously send and receive messages all the time. In effect, it is impossible not to communicate.

The pervasiveness of communication also demonstrates the importance of communication as a discipline of study. Communication is not a new area of study. Formal interest in communication dates back to 5th century Greece. The sophists of ancient Greece were primarily teachers of wisdom, but in the process of teaching wisdom and virtue, they discovered the power of eloquence, and eventually became known as the first teachers of public speaking.

Communication research over the past century or so has revolved around new technologies of mass communication and their influence on the practice of public speaking. In the 20th century we saw a revolution in communication driven by technological advancement. The emergence of new technologies gave rise to more elaborate theories and models of human communication in the 20th century. As we move forward in the 21st century, newer technologies are still transforming the world of communication, making communication studies one of the most challenging, exciting, lucrative, and futuristic areas of study in the modern university.