DİLİN TASARIM ÖZELLİKLERİ-CHARLES F. HOCKETT

Kaynak: http://en.wikipedia.org/wiki/Charles_F._Hockett (14 Ekim 2014 tarihinde erişilmiştir.)

Comparative method of linguistics

One of Hockett's most important contributions was his development of the design-feature approach to comparative linguistics where he attempted to distinguish the similarities and differences among animal communication systems and human language.

Hockett initially developed seven features which were published in the 1959 paper "Animal 'Languages' and Human Language." However, after many revisions, he settled on 13 design-features which can be found in the Scientific American article "The Origin of Speech."

Hockett argued that while every communication system has some of the 13 design features, only human, spoken language has all 13 features. In turn, this differentiates human spoken language from animal communication and other human communication systems such as written language.

Hockett's 13 design features of language

Main article: Design Features of Language

1. Vocal-Auditory Channel: Much of human language is performed using the vocal tract and auditory channel. Hockett viewed this as an advantage for human primates because it allowed for the ability to participate in other activities while simultaneously communicating through spoken language.
2. Broadcast transmission and directional reception: All human language can be heard if it is within range of another person's auditory channel. Additionally, a listener has the ability to determine the source of a sound by binaural direction finding.
3. Rapid Fading (transitoriness): Wave forms of human language dissipate over time and do not persist. A hearer can only receive specific auditory information at the time it is spoken.
4. Interchangeability: A person has the ability to both speak and hear the same signal. Anything that a person is able to hear, they have the ability to reproduce through spoken language.
5. Total Feedback: A speaker has the ability to hear themselves speak. Through this, they are able to monitor their speech production and internalize what they are producing through language.
6. Specialization: Human language sounds are specialized for communication. When dogs pant it is to cool themselves off, when humans speak it is to transmit information.
7. Semanticity: This refers to the idea that specific signals can be matched with a specific meaning.
8. Arbitrariness: There is no limitation to what can be communicated about and there is no specific or necessary connection between the sounds used and the message being sent.

9. Discreteness: Phonemes can be placed in distinct categories which differentiate them from one another, such as the distinct sound of /p/ versus /b/.
10. Displacement: The ability to refer to things in space and time and communicate about things that are currently not present.
11. Productivity: The ability to create new and unique meanings of utterances from previously existing utterances and sounds.
12. Traditional Transmission: The idea that human language is not completely innate and acquisition depends in part on the learning of a language.
13. Duality of patterning: Meaningless phonic segments (phonemes) are combined to make meaningful words, which in turn are combined again to make sentences.

While Hockett believed that all communication systems, animal and human alike, share many of these features, only human language contains all of the 13 design features. Additionally, traditional transmission, and duality of patterning are key to human language.

Hockett's design features and their implications for human language

1. Hockett suggests that the importance of a vocal-auditory channel lies in the fact that the animal can communicate while also performing other tasks, such as eating, or using tools.
2. Broadcast Transmission and Directional Reception: An auditory|audible human language signal is sent out in all directions, but is perceived in a limited direction. For example, humans are more proficient in determining the location of a sound source when the sound is projecting directly in front of them as opposed to a sound source projected directly behind them.
3. Rapid Fading of a signal in human communication differs from such things as animal tracks and written language because an utterance does not continue to exist after it has been broadcast. With this in mind, it is important to note that Hockett viewed spoken language as the primary concern for investigation. Written language was seen as being secondary due to its recent evolution in culture.
4. Interchangeability represents a human's ability to act out or reproduce any linguistic message that they are able to comprehend. This differs from many animal communication systems, particularly in regards to mating. For example, humans have the ability to say and do anything that they feel may benefit them in attracting a mate. Sticklebacks on the other hand have different male and female courtship motions; a male cannot replicate a female's motions and vice versa.
5. Total Feedback is important in differentiating a human's ability to internalize their own productions of speech and behavior. This design-feature incorporates the idea that humans have insight into their actions.
6. Specialization is apparent in the anatomy of human speech organs and our ability to exhibit some control over these organs. For example, a key assumption in the evolution of language is that the descent of the larynx has allowed humans to produce speech sounds. Additionally, in terms of control, humans are generally able to control the movements of their tongue and mouth. Dogs however, do not have control over these organs. When dogs pant they are communicating a signal, but the panting is an uncontrollable response reflex of being hot [1].
7. Semanticity: A specific signal can be matched with a specific meaning within a particular language system. For example, all people that understand English have the ability to make a connection between a specific word and what that word represents or

refers to. (Hockett notes that gibbons also show semanticity in their signals, however their calls are far more broad than human language.)
8. Arbitrariness within human language suggests that there is no direct connection between the type of signal (word) and what is being referenced. For example, an animal as large as a cow can be referred to by a very short word Archived October 27, 2009 at the Wayback Machine.
9. Discreteness: Each basic unit of speech can be categorized and is distinct from other categories. In human language there are only a small set of sound ranges that are used and the differences between these bits of sound are absolute. In contrast, the waggle dance of honeybees is continuous.
10. Displacement refers to the human language system's ability to communicate about things that are not present spatially, temporally, or realistically. For example, humans have the ability to communicate about unicorns and outer space.
11. Productivity: human language is open and productive in the sense that humans have the ability to say things that have never before been spoken or heard. In contrast, apes such as the gibbon have a closed communication system because all of their vocal sounds are part of a finite repertoire of familiar calls.
12. Traditional Transmission:: suggests that while certain aspects of language may be innate, humans acquire words and their native language from other speakers. This is different from many animal communication systems because most animals are born with the innate knowledge and skills necessary for survival. (Example: Honeybees have an inborn ability to perform and understand the waggle dance).
13. Duality of patterning: Humans have the ability to recombine a finite set of phonemes to create an infinite number of words, which in turn can be combined to make an unlimited number of different sentences.

Design feature representation in other communication systems

Honeybees

Foraging honeybees communicate with other members of their hive when they have discovered a relevant source of pollen, nectar, or water. In an effort to convey information about the location and distance of such resources, honeybees participate in a particular figure-eight dance known as the waggle dance.

In Hockett's "The Origin of Speech", he determined that the honeybee communication system of the waggle dance holds the following design features:

1. Broadcast Transmission and Directional Reception – Through the use of this dance, honeybees are able to send out a signal that informs other members of the hive as to what direction the source of food, or water can be located.
2. Semanticity – Evidence that the specific signals of a communication system can be matched with specific meanings is apparent because other members of the hive are able to locate the food source after a performance of the waggle dance.
3. Displacement – Demonstrated in the foraging honeybees' ability to communicate about a resource that is not currently present within the hive.
4. Productivity – waggle dances change based on the direction, amount, and type of resource.

Gibbons

Gibbons are small apes in the family Hylobatidae. While gibbons share the same kingdom, phylum, class, and order of humans and are relatively close to man, Hockett distinguishes between the gibbon communication system and human language by noting that gibbons are devoid of the last four design features.

Gibbons possess the first nine design features, but do not possess the last four (displacement, productivity, traditional transmission, and duality of patterning).

1. Displacement, according to Hockett, appears to be lacking in the vocal signaling of apes.
2. Productivity does not exist among gibbons because if any vocal sound is produced, it is one of a finite set of repetitive and familiar calls.
3. Hockett supports the idea that humans learn language extra genetically through the process of traditional transmission. Hockett distinguishes gibbons from humans by stating that despite any similarities in communication among a species of apes, one cannot attribute these similarities to acquisition through the teaching and learning (traditional transmission) of signals; the only explanation must be a genetic basis.
4. Finally, duality of patterning explains a human's ability to create multiple meanings from somewhat meaningless sounds. For example, the sounds /t/, /a/, /c/ can be used to create the words "cat", "tack", and "act". Hockett states that no other Hominoid communication system besides human language maintains this ability.

Later additions to the features

In a report published in 1968 with anthropologist and scientist Stuart A. Altmann, Hockett derived three more Design Features, bringing the total to 16. The additional three are:

14. **Prevarication** – a speaker can say falsehoods, lies, and meaningless statements.
15. **Reflexiveness** – Language can be used communicate about the very system it is; i.e. language can discuss language
16. **Learnability** – a speaker of a language can learn another language

Other additions

Cognitive scientist and linguist at the University of Sussex Larry Trask (1944–2004) offered an alternative term and definition for number 14, **Prevarication**:

> 14. (a) **Stimulus Freedom** – we can choose to say anything we want or say nothing at all in any given situation

There has since been one more Feature added to the list, by Dr. William Taft Stuart, a director of the Undergraduate Studies program at the University of Maryland: College Park's Anthropology school, part of the College of Behavioral and Social Sciences. His "extra" Feature is:

> 17. **Grammaticality** – a speaker's sayings conform to the rules of grammar

This follows the definition of Grammar and Syntax, as given by Merriam-Webster's Dictionary:

Grammar:
1. (a) the study of the classes of words, their inflections, and their functions and relations in the sentence (b) a study of what is to be preferred and what avoided in inflection and syntax
2. (a) the characteristic system of inflections and syntax of a language (b) a system of rules that defines the grammatical structure of a language

Syntax:
1. (a) the way in which linguistic elements (as words) are put together to form constituents (as phrases or clauses) (b) the part of grammar

Relationship between the design features and animal communication

Additionally, Dr. Stuart defends his postulation with references to famous linguist Noam Chomsky and University of New York psychologist Gary Marcus. Chomsky theorized that humans are unique in the animal world because of their ability to utilize Design Feature 5: Total Feedback, or recursive grammar. This includes being able to correct oneself and insert explanatory or even non sequitur statements into a sentence, without breaking stride, and keeping proper grammar throughout.

While there have been studies attempting to disprove Chomsky, Marcus states that, "An intriguing possibility is that the capacity to recognize recursion might be found only in species that can acquire new patterns of vocalization, for example, songbirds, humans and perhaps some cetaceans." This is in response to a study performed by psychologist Timothy Gentner of the University of California at San Diego. Gentner's study found that starling songbirds use recursive grammar to identify "odd" statements within a given "song." However, the study does not necessarily debunk Chomsky's observation because it has not yet been proven that songbirds have the semantic ability to generalize from patterns.

There is also thought that symbolic thought is necessary for grammar-based speech, and thus Homo Erectus and all preceding "humans" would have been unable to comprehend modern speech. Rather, their utterances would have been halting and even quite confusing to us, today.

Hockett's "design features" of language and other animal communication systems

The University of Oxford: Phonetics Laboratory Faculty of Linguistics, Philology and Phonetics published the following chart, detailing how Hockett's (and Altmann's) Design Features fit into other forms of communication, in animals:

Feature	Crickets	Bee Dancing	Western Meadowlark Song	Gibbon Calls	Signing Apes	Alex, A Grey Parrot	Paralinguistic phenomena	Human sign languages	Spoken Language
Vocal-Auditory Channel	Auditory, not vocal	No	Yes	Yes	No	Yes	Yes	No	Yes
Broadcast Transmission and Directional Reception	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Rapid Fading	Yes (repeating)	?	Yes	Yes (repeating)	Yes	Yes	Yes	Yes	Yes
Interchangeability	Limited	Limited	?	Yes	Yes	Yes	Largely Yes	Yes	Yes
Total Feedback	Yes	?	Yes	Yes	No	Yes	Yes	No	Yes
Specialization	Yes?	?	Yes	Yes	Yes	Yes	Yes?	Yes	Yes
Semanticity	No?	Yes	In Part	Yes	Yes	Yes	Yes?	Yes	Yes
Arbitrariness	?	No	If semantic, Yes	Yes	Largely Yes	Yes	In Part	Largely Yes	Yes
Discreteness	Yes?	No	?	Yes	Yes	Yes	Largely No	Yes	Yes
Displacement	–	Yes, always	?	No	Yes	No	In Part	Yes, often	Yes, often
Productivity	No	Yes	?	No	Debatable	Limited	Yes	Yes	Yes
Traditional Transmission	No?	Probably not	?	?	Limited	Limited	Yes	Yes	Yes
Duality of Patterning	?	No	?	No (Cotton-top Tamarin: Yes)	Yes	Yes	No	Yes	Yes
Prevarication	–	–	–	–	Yes	No	–	Yes	Yes
Reflexiveness	–	–	–	–	No?	No	–	Yes	Yes
Learnability	–	–	–	–	Yes	Yes	–	Yes	Yes

Hockett's design features

Kaynak: http://en.wikipedia.org/wiki/Hockett%27s_design_features

From Wikipedia, the free encyclopedia
(Redirected from Design Features of Language)

In the 1960s, linguistic anthropologist Charles F. Hockett defined a set of features that characterize human language and set it apart from animal communication. He called these characteristics the design features of language. Hockett originally believed there to be 13 design features. While primate communication utilizes the first 9 features, the final 4 features (displacement, productivity, cultural transmission, and duality) are reserved for humans. Hockett later added prevarication, reflexiveness, and learnability to the list as uniquely human characteristics. He asserted that even the most basic human languages possess these 16 features.

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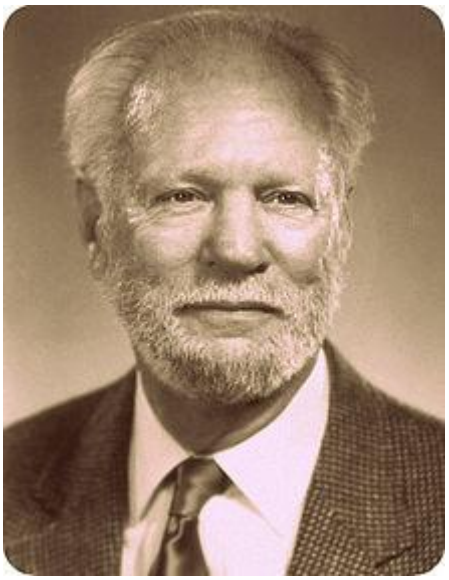
Charles Hockett



Charles Hockett

Charles Hockett was an American linguist and anthropologist, who lived from 1916 to 2000. Hockett graduated from Yale in 1939, and later taught at both Cornell and Rice. Hockett made significant contributions to structural linguistics, as well as the study of Native American,

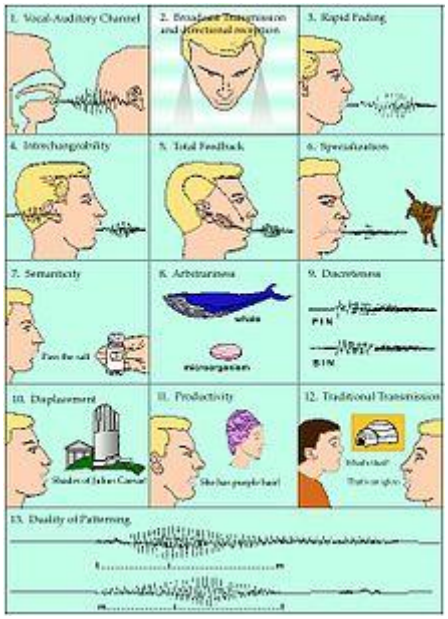
Chinese, and Fijian languages. His work focused on detailed linguistic analysis, particularly morphology and phonology, and on the concepts and tools that facilitated such analysis.[1] Up until the 1950s, language was largely viewed as a social-behavioral phenomenon. Hockett challenged this by suggesting that language is biologically-based and innately learned. He believed that humans share a universal grammar that ties all languages together. He is most famous for defining what he called the design features of language, which demonstrate his beliefs about the commonalities between human languages.[2]

Design features of language

Vocal-auditory channel Refers to the idea that speaking/hearing is the mode humans use for language. When Hockett first defined this feature, it did not take sign language into account, which reflects the ideology of orality that was prevalent during the time. This feature has since been modified to include other channels of language, such as tactile-visual or chemical-olfactory.

Broadcast transmission and directional reception When humans speak, sounds are transmitted in all directions; however, listeners perceive the direction from which the sounds are coming. Similarly, signers broadcast to potentially anyone within the line of sight, while those watching see who is signing. This is characteristic of most forms of human and animal communication.

Transitoriness Also called rapid fading, transitoriness refers to the idea of temporary quality of language. Language sounds exist for only a brief period of time, after which they are no longer perceived. Sound waves quickly disappear once a speaker stops speaking. This is also true of signs. In contrast, other forms of communication such as writing and Inka khipus (knot-tying) are more permanent.



Interchangeability Refers to the idea that humans can give and receive identical linguistic signals; humans are not limited in the types of messages they can say/hear. One can say "I am a boy" even if one is a girl. This is not to be confused with lying (prevarication). The importance is that a speaker can physically create any and all messages regardless of their truth or relation to the speaker. In other words, anything that one can hear, one can also say.

Not all species possess this feature. For example, in order to communicate their status, queen ants produce chemical scents that no other ants can produce (see animal communication below).

Total feedback Speakers of a language can hear their own speech and can control and modify what they are saying as they say it. Similarly, signers see, feel, and control their signing.

Specialization The purpose of linguistic signals is communication and not some other biological function. When humans speak or sign, it is generally intentional.

An example of *non*-specialized communication is dog panting. When a dog pants, it often communicates to its owner that it is hot or thirsty; however, the dog pants in order to cool itself off. This is a biological function, and the communication is a secondary matter.

Semanticity Specific sound signals are directly tied to certain meanings.

Arbitrariness There is no intrinsic or logical connection between a sound signal and its meaning. Whatever name a human language attributes an object is purely arbitrary. The word "car" is nothing like an actual car. Spoken words are really nothing like the objects they represent. This is further demonstrated by the fact that different languages attribute very different names to the same object.

However, some ASL signs are representative. For example, the symbol for "house" uses flat hands to form the roof and walls of a house.[3] While Hockett did not account for this, the principle still generally applies.

Discreteness Language can be broken down into small discrete units which are reproducible and combinable. These units are perceived distinctly and not continuously.

Displacement Refers to the idea that humans can talk about things that are not physically present or that do not even exist. Speakers can talk about the past and the future, and can express hopes and dreams. A human's speech is not limited to here and now. Displacement is one of the features that separates human language from other forms of primate communication.

Productivity Refers to the idea that language-users can create and understand novel utterances. Humans are able to produce an unlimited amount of utterances. Also related to productivity is the concept of grammatical patterning, which facilitates the use and comprehension of language. Language is not stagnant, but is constantly changing. New idioms are created all the time and the meaning of signals can vary depending on the context and situation.

Traditional transmission Also called cultural transmission. While humans are born with innate language capabilities, language is learned after birth in a social setting. Children learn how to speak by interacting with experienced language users. Language and culture are woven together.

Duality of patterning Meaningful messages are made up of distinct smaller units. These smaller units (such as letters) are virtually meaningless until they are combined into meaningful patterns (such as words).

Prevarication Prevarication is the ability to lie or deceive. When using language, humans can make false or meaningless statements.

Reflexiveness Humans can use language to talk about language.

Learnability Language is teachable and learnable. In the same way as a speaker learns their first language, the speaker is able to learn other languages. It is worth noting that young children learn language with competence and ease; however, language acquisition becomes more difficult once children pass a certain age.

Design features in animal communication

Hockett distinguished language from communication. While almost all animals communicate in some way, a communication system is only considered language if it possesses *all* of the above characteristics. Some animal communication systems are impressively sophisticated.

Ants

Ants make use the chemical-olfactory channel of communication. Ants produce chemicals called pheromones, which are released through body glands and received by the tips of the antenna. Ants can produce up to twenty different pheromone scents, each a unique signal used to communicate things such as the location of food and danger, or even the need to defend or relocate the colony. When an ant is killed, it releases a pheromone that alerts others of potential danger. Pheromones also help ants distinguish family members from strangers. The queen ant has special pheromones which she uses to signal her status, orchestrate work, and let the colony know when they need to raise princesses or droids.[4] Ants will even engage in warfare to protect the colony or a food source. This warfare involves tactics that resemble human warfare. Marauder ants will capture and hold down an enemy while another ant crushes it. Ants are loyal to their colony to the death; however, the queen will kill her own in order to be the last one standing. This level of "planning" among an animal species requires an intricate communication.[5]

Birds

Bird communication demonstrates many features, including the vocal-auditory channel, broadcast transmission/directional reception, rapid fading, semanticity, and arbitrariness. Bird communication is divided into songs and calls. Songs are used primarily to attract mates, while calls are used to alert of food and danger and coordinate movement with the flock. Calls are acoustically simple, while songs are longer and more complex.[6] Bird communication is both discrete and non-discrete. Birds use syntax to arrange their songs, where musical notes act as phonemes. The order of the notes is important to the meaning of the song, thus indicating that discreteness exits. Bird communication is also continuous in the sense that it utilizes duration and frequency. However, the fact that birds have "phonemes" does not necessarily mean that they can combine them in an infinite way. Birds have a limited number of songs that they can produce. The male Indigo Bunting only has one song, while the Brown Thrasher can sing over 2000 songs.[7] Birds even have unique dialects, depending on where they are from.[8]

Honeybees

Honeybee communication is distinct from other forms of animal communication. Rather than vocal-auditory, bees use the space-movement channel to communicate. Honeybees use two kinds of dances to communicate—the round dance and the waggle dance. They use the round dance to communicate that food is 50–75 meters from the hive. They use the waggle dance when it is farther than this. To do the waggle dance, a bee moves in a zig-zag line and then does a loop back to the beginning of the line, forming a figure-eight. The direction of the line points to the food. The speed of the dance indicates the distance to the food.[9] In this way, bee dancing is also continuous, rather than discrete. Their communication is also not arbitrary. They move in a direction and pattern that physically points out where food is located.

Honeybee dancing also demonstrates displacement, which is generally considered a human characteristic. Most animals will only give a food-found call in the physical presence of food, yet bees can talk about food that is over 100 meters away.

Footnotes

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