

## ICON, INDEX, AND SYMBOL

The nineteenth-century American philosopher C. S. Peirce developed extensive sign theories in order to explain **REFERENCE**, meaning, **COMMUNICATION**, and cognition. One of the central and most innovative features of his theories was the icon, index, symbol classification of signs.

A crucial aspect of understanding Peirce's icon, index, symbol division is his account of sign structure. According to Peirce, any instance of signification consists of three interrelated parts: a sign, an object, and an interpretant. For the sake of simplicity, we can think of the sign as the signifier, for example, a written **WORD** or an animal's footprint. The object, on the other hand, is whatever is signified, for example, the object denoted by the written word or the animal that left the print. The interpretant is the understanding or interpretation that the sign/object relation generates, for example, that the word or utterance is meant to refer to its object or that the animal track signifies the presence of the animal that made it. The importance of the interpretant for Peirce is that signification is not a simple dyadic relationship between sign and object: A sign signifies an object only if it can be interpreted as such.

With this structure in mind, Peirce was interested in classifying the various ways in which the sign/object relation might generate an interpretant. In particular, he thought that a sign might come to signify its object, and so generate an interpretant, in three possible ways. First, a sign may be understood as signifying in virtue of similarities or shared qualities between it and its object. As Peirce says, "I call a sign which stands for something merely because it resembles it an icon" (1935b, 362). His own preferred examples of icons are portraits or mathematical diagrams – indeed, he thought icons were especially important to mathematical thought. However, we can also include examples such as color swatches, sculptures, and so on. What is central to iconic signification is that the qualities of the sign are also qualities of the signified object and that this sharing of qualities is crucial in enabling the sign to signify.

The second way in which a sign might be understood as signifying is in virtue of some physical or causal connection between it and its object. Such a sign is an index. Peirce's own description of an index is as "a sign which refers to the object that it denotes by virtue of being really effected by that object" (1935a, 248). Again, there are numerous and wide-ranging examples, including demonstratives and indexical expressions, weather vanes, barometers, fever as a sign of an underlying illness, or smoke as a sign of fire. What is crucial to indices is that the object has a causal effect upon the sign (as in the case of fire causing the smoke that indicates it) or has some spatio-temporal proximity to its sign, which can be used to aid an interpreter of the sign to grasp that object (as in the case of pointing to some nearby object).

The third way in which a sign might be understood as signifying is in virtue of some convention or law that connects it to its object. Peirce's own description of a symbol is as "a sign which refers to the object that it denotes by virtue of a law, usually an

association of general ideas, which operates to cause the symbol to be interpreted as referring to its object" (1935a, 249). There are numerous examples of symbols, from the various words and utterances in human languages to such things as road signs. What is crucial in the case of symbols is that there exists some underlying convention, agreement, habit, or law that means that invoking some symbol invokes its associated object. For instance, a red traffic light's being symbolic of a lack of priority at a road junction works because we have all agreed (by habit, by convention, and by imposing traffic regulations) to use red traffic lights this way.

Throughout his life, Peirce made numerous alterations to his account of signs (see, for instance, Short 2004), but the broad division among icons, indices, and symbols tends to find a place throughout. There are, of course, some subtleties to Peirce's account. For instance, it is not clear that there are very many examples of signs that are purely iconic, indexical, or symbolic – that is, which do not overlap with one or both of the other elements of the trichotomy. As an example, take a painted portrait as a sign of the person it depicts. This sign is an icon in that it signifies its object in virtue of the qualities it shares with that object – the skin and hair color of the depicted person are replicated in the painting. But, of course, many of the things that make a portrait a successful depiction of its sitter are due to particular conventions governing paintings and how particular blocks of color in two dimensions can "stand for" some subject. This seems to make the painting look as though it has symbolic elements, too. Similar considerations hold for indices such as barometers – although such signs indicate their objects in virtue of a causal and physical connection with their object; conventions about how we should interpret this physical connection also seem to play a part in signification. What's more, there are clear instances of symbols that have some iconic element. Obvious examples might include forms of writing, such as Chinese, that involve pictograms, at least partially. Even onomatopoeic words such as "cuckoo" present clear cases of symbols with a strong iconic element – the phonic qualities of the object are aped by the phonic qualities of the word.

Peirce was aware of the various overlaps among icons, indices, and symbols, and at some point proposed to call icons and indices with symbolic elements hypo-icons and subindices as a way of acknowledging this. However, in any case where more than one of the three elements is present, one will be most prominent. Consequently, we can think of Peirce's trichotomy as dividing signs according to whether they are *predominantly* iconic, indexical, or symbolic.

The main influence of Peirce's division is in **SEMIOTICS**, where his work is considered foundational. However, the icon, index, symbol distinction has had some influence in philosophy, particularly through the work of Arthur Burks (1949), and has even been used in such diverse areas as literary theory (see, for example, Sheriff 1989), film theory (see, for example, Wollen 1969; see also **FILM AND LANGUAGE**), and musicology (see Turino 1999; see also **MUSIC, LANGUAGE AND**). The use and relevance of this distinction to linguistics are similarly diverse, but it features most prominently in analyses of the relation between **ANIMAL COMMUNICATION AND HUMAN LANGUAGE** and in some explanations of the evolution of language.

In explaining animal communication, the distinction is especially useful since it allows us to classify various cases of animal “language” without treating all such instances as uniform. Consequently, a diverse range of animal camouflage or cases of mimicry can be classified as iconic instances of communication. For example, the harmless milk snake’s mimicking of the poisonous coral snake’s red, black, and yellow coloring in order to avoid predation is easily explained as an instance of iconic communication – these colors mean poisonous! As for indexical communication, a well-discussed case is vervet monkey warning calls (see Seyfarth, Cheney, and Marler 1980; see also PRIMATE VOCALIZATIONS). In such an example, the calls are classifiable as indexical since they rely upon a causal and physical connection with particular predators in order to refer – the calls are made in response to the snakes, eagles, or leopards whose presence is perceived. And this is all in contrast to human language, which is predominantly symbolic and can enable communication even if the objects referred to are not present. Ingar Brinck and Peter Gärdenfors (2003) make compelling use of the icon, index, symbol trichotomy in explaining animal communication where they discuss the role of such communication in cooperation.

The most prominent use and interesting development of Peirce’s icon, index, symbol trichotomy is Terence Deacon’s (1997) account of the coevolution of human language and BRAINS. According to that account, language evolution is to be explained by seeing iconic, indexical, and symbolic communication and reference as related to one another in a hierarchy. What this means is that in order to master symbolic communication, we must first master indexical communication. And in order to master indexical communication, we must first master iconic communication. For instance, a predator’s inability to distinguish the milk snake’s coloring from that of a coral snake is suggestive of iconic reference – it is manifest in the predator’s inability to distinguish one type of snake from the other. However, this iconic communication needs to be in place in order for the predator to take the coloring of those snakes as an indexical signifier of the poisonous status of the snake – red, yellow, and black banding are an index of a venomous snake. Other instances of indexical reference work in just this way. It is because the vervet monkey sees the eagle above as being qualitatively similar to previously experienced eagles (that is, as an icon of a recognized predator) that it is able to produce a warning cry (an indexical reference) when that predator is present. Symbolic reference requires the presence of indexicals but also requires that the indexical relationship between words/sounds and their objects has become ingrained, habitual, and appropriately interconnected with other symbols so that reference and communication are maintained even if the stimulus to indexical reference is lost or removed.

Once this symbolic threshold is achieved, complex relationships between words develop, allowing words to signify other words and explain the relationships that exist among them. Such a model is useful for explaining various differences between cases like vervet monkey warning calls, captive chimpanzee symbol manipulation, and human language learning – in the two former cases, the connection between sign and object is lost when the object is absent for sustained periods. Consequently, the habituation and interconnectedness of indexical signs that

allows for the symbolic communication typical of human language is never attained, and vervet monkey calls and chimpanzee symbol manipulation never rise above the level of indexical communication.

– Albert Atkin

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#### IDEAL SPEECH SITUATION

This term was coined by the German social theorist and philosopher Jürgen Habermas to refer to the conditions necessary for free and transparent communication and discussion. The concept of ideal speech situation plays a key part in his early formulations of a theory of COMMUNICATIVE ACTION and of UNIVERSAL PRAGMATICS (Habermas 1979, 1–68; 1984; 1987). In his later writings, the term has tended to be replaced by Karl-Otto Apel’s notion of an “unrestricted communication community” (Apel 1980; Habermas 1990, 88).

An ideal speech situation may be understood as the conditions that would allow for open discussion between free and equal participants, who strive to come to an agreement upon any topic purely through the force of better argument. Thus, the participants enter a discussion assuming that their ideas may be challenged by any other participant, but that only those ideas and arguments that are rationally formulated and supported by relevant and persuasive evidence will survive interrogation. The personality, status, power, or rhetorical abilities of the person holding the idea will be rendered irrelevant in the course of debate.

The idea of an ideal speech situation has its origins in the work of the American pragmatist philosopher Charles Sanders Peirce. In his philosophy of science, Peirce proposed the notion of an ideal community of scientists. He recognized that scientific research is a necessarily communal enterprise. Typically, scientists work in