

Gestures and Propositions

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Abstract: On Peirce's view, every proposition minimally consists of both an index and a rheme. To illustrate the role of the index in a proposition, he occasionally remarks that gestures may supply the index of a proposition, the gesture making it such that an utterance conveys information about something. I explore the role that gestures play in Peirce's theory of the proposition and in information conveyance, and I argue that in some contexts a pointing index finger alone is sufficient to express a proposition.

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1. Peirce's Analysis of the Proposition

As this journal issue testifies to, with the publication of Stjernfelt's *Natural Propositions* (2014) along with earlier studies such as Hilpinen (1982), Houser (1992), and Short (2007: chs. 8 and 9) and later studies such as Bellucci (2018a: passim), Peirce's theory of the proposition is finally getting its due. Without doubt, Peirce's theory of the proposition is highly distinctive. A part of its distinctiveness stems from the sorts of propositions he regards as paradigmatic. Rather than using the stock examples common to contemporary discussions – *snow is white*; *grass is green* – Peirce uses examples such as *it rains* or *that is a balloon*. Why he should do this is evident if we consider these propositions in predicate logic. A proposition such as *snow is white* is expressed as *there is something that is snow and that is white*: $\exists x (Sx \wedge Wx)$. But insofar as this proposition uses the logical connective “and” it is not the simplest proposition expressible. An even simpler proposition would be *something is snow*, $\exists x Sx$.

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A good policy when undertaking an investigation is to start by examining the simplest cases possible and to treat those as paradigmatic. Since *snow is white* is not the simplest proposition possible, a different sort of example should be taken as paradigmatic.

Peirce sometimes turns to Latin to find the simplest propositions. The simplest propositions can be expressed in one word, such as *lucet* or *fulget*, *it is light* or *it lightnings*. At other times, given the grammatical conventions of English, Peirce also uses such examples as *it rains*, *there is a fire*, or *that is a balloon*. Peirce's use of these examples leads him to a non-standard analysis of the structure of propositions. If one takes examples such as *snow is white* or *grass is green* as paradigmatic, one might be led to the analysis of propositions found in Aristotle and throughout the Medievals and Moderns, viz., that propositions minimally consist of a subject term, a copula, and a predicate term. But in a proposition such as *lucet*, this sort of analysis falls apart. There is no copula and it is not clear whether that one word – *lucet* – should be treated as a subject term, predicate term, both, or neither (for more on this, see Atkins, 2019 and 2018: Ch 2).

Based on these most simple sorts of propositions and inspired by the elegance of his existential graphs, Peirce maintains that the right analysis (setting aside some complications regarding analysis, on which see Bellucci, 2018b) is that propositions minimally consist of two elements. The first element is an index. The second element is a rheme, which is a clause that contains information and at least consists of a common noun sometimes containing a copula or a verb. (Peirce sometimes uses “rheme” generically for any term but I shall use it in the more restricted sense indicated, viz. as that which is capable of supplying information about something. Rhemes may be identified by replacing parts of a proposition with blanks which, when those blanks are replaced with proper names, results in a proposition – see Peirce, 1998: 292 and 299.) Denying the logical importance of the copula, he writes,

while it is true that one of Aristotle's memoirs dissects a proposition into subject, predicate, and verb, yet as long as Greek was the language which logicians had in view, no importance was attached to the substantive verb “is”, because the Greek permits it to be omitted. It was not until the time of Abelard, when Greek was forgotten, and logicians had Latin in mind, that the copula was recognized as a constituent part of the logical proposition. I do not, for my

part, regard the usages of language as forming a satisfactory basis for logical doctrine. (Peirce, 1998/1904: 308-9)

And affirming that the proposition *lucet* has an index even though it is only one word and propositions have both an index and rheme, he states,

Some logical writers are so remarkably biased or dense as to adduce the Latin sentences *fulget* and *lucet* as propositions without any subject. But who cannot see that these words convey no information at all without a reference (which will usually be Indexical, the Index being the common environment of the interlocutors)? (Peirce, 1998/1903: 281)

Peirce claims the reference – that is, the relation of referring – will “usually” be indexical because sometimes it is not an index but a rule stating how an index may be had (see Peirce, 1998: 168, 1903). For example, “someone is sleeping” does not indicate who is sleeping but in ordinary contexts of utterance the index is a rule stating that if one scours the world (or some other place implied by the context of utterance) one will find a person who is sleeping. I shall make a comment on this later, but my focus shall primarily be on gestures functioning as the index.

2. *The Index and the Relations of Signs to Referents*

2.1. *An Index Is Not an Indexical*

One important point is that what Peirce calls an index is different from what contemporary philosophers of language call an indexical. An indexical is a word or term whose referent changes depending on the context of utterance. For instance, if I say “I am a person” the indexical “I” refers to me whereas if you say “I am a person” the indexical “I” refers to you.

In contrast, on Peirce’s view, an index is not a word or term but, typically, an existential relation of a sign to its object (I use “typically” because sometimes we seem to refer to nonexistent objects, such as unicorns, a complication of no particular concern in this essay, but see Peirce, 1998: 209, 1903, and Wilson, 2017). It is helpful to think of the index in the context of Peirce’s icon, index, symbol distinction. Although Peirce regards these distinctions as distinc-

tions among signs, they are better thought of as distinctions among the kinds of relation that obtain between the object or referent of the sign relation and the sign itself (or, as Peirce sometimes call it, the representamen). With respect to iconicity, the relation is one of resemblance, often of form. A map of New York City's subway system stands in the relation of iconicity to the subway system itself because the formal relations between the subway stations are the same. That is, if I start from the 69th Street subway station in Woodside, Queens, I can get to the W. Fourth station in the West Village, Manhattan, by taking the 7 train to Times Square and then transferring to the A train downtown. This formal relation between the stations obtains in reality by virtue of the design of the subway system itself and on the map by virtue of the lines and dots representing the subway tracks and stations.

With respect to indexicality, the relation between the sign itself and the referent of the sign is one of force, action, causality, or compulsion. A telescopic image of a double star stands in a relation of indexicality to the double star system itself because the telescope is oriented and designed in such a way that the light from the double star causes the telescopic image. A human footprint in the wet sand on an otherwise uninhabited beach stands in the relation of indexicality to a person somewhere nearby because the footprint was caused by someone taking a step in the wet sand.

Finally, with respect to symbols, the relation between the sign itself and the referent is one of generality, where the scope of reference is typically established by convention (see Bellucci, 2018: 64-69). The word "horse" stands in a relation of symbolicity to horses. The relation is clearly not iconic; the word "horse" looks nothing like a large, four-legged mammal with a mane. Neither is the relation indexical; horses themselves do not cause the word "horse" (though seeing a horse might cause one to utter the word). Rather, it is by the general consensus of English language users that the order of phonemes (or graphemes) comprising the word "horse" is used to refer to the kind horse.

2.2. Genuine and Degenerate Indexes

There is much more to Peirce's icon, index, and symbol distinctions, but what I want to stress is that the distinctions are best

understood as distinctions of relations that the sign bears to its referent. This is because one and the same sign can stand in a relation of iconicity and a relation of indexicality to its referent simultaneously. A telescopic image of a double star is an example. The double-star image stands in the relation of iconicity to the double star system because the form of the relation of the stars in the image to each other (e.g., their distance from one another) is the same as the form of the relation of the stars to each other when the light was emitted from those very stars. Moreover, as already noted, the image stands in a relation of indexicality to those stars as well; the light from the stars is what causes the image.

This example also leads us to an important distinction in Peirce's writings on indexicality. In the 1903 Harvard *Lectures on Pragmatism*, Peirce distinguishes between two sorts of indexes. The first sort of index is such that the "dual character" is «in the index so that it has two elements, by virtue of one serving as a substitute for the particular object it does, while the other is an involved icon that represents the representamen itself regarded as a quality of the object» (Peirce, 1998/1903: 163). This is obtuse, but Peirce's point is that some relations of indexicality are such that they also carry information with them and so are iconic. Paradigmatically, these are indexical relations of causality. The telescopic image of a double star is such an example. Photographs are such examples. So are weathervanes, hygrometers, thermometers, and other such instruments (which also incorporate symbols in the use of scales of measurement – see May, 2017: 107-8). Even a «piece of mould with a bullet-hole in it» (Peirce, 1931-58/1902: vol. 2 par. 304) is a genuine index, since it conveys ballistic information about the bullet that causes the hole. These indexes stand in a causal relation to their referents and by virtue of that causal relation convey information about them. As Peirce says of the hygrometer, «its connection with the weather is dualistic, so that by an involved icon, it actually conveys information» (Peirce, 1998/1903: 163). These are genuine indexes.

In contrast, the second kind of index – or, as I would prefer to say, sign that stands in a relation of indexicality – does not have an "involved icon". In this case, Peirce writes, «there [is] really no such dual character in the index, so that it merely denotes whatever object it happens to resemble» (Peirce, 1998/1903: 163). The relation

is still one of indexicality because the sign is “as a matter of fact associated with that thing”, but the “matter of fact” association in this case is not typically one of physical causality as with relations of genuine indexicality. What is it? Peirce tries to illustrate such a relation of indexicality by using a pointing finger as an example. Obviously, a pointing finger is not causally connected with the object being pointed at in the way that a weathervane is causally connected with the blowing wind, for the object does not physically cause the extension of one’s finger towards it. But what a pointing index finger does do is physiologically compel the person who sees the pointing index finger to look in the direction the finger is pointing. Peirce makes this clear at least twice. Once is in 1906, when he writes, «What the sign virtually has to do in order to indicate its object, – and make it its, – all it has to do is just to seize its interpreters eyes and forcibly turn them upon the object meant; it is what a knock at the door does, or an alarum or other bell, a whistle, a cannon-shot, etc. It is pure physiological compulsion; nothing else» (Peirce, 1998: 380). In 1908, he writes to Victoria Welby that «indicatives» such as «a pointing finger, brutally direct the mental eyeballs of the interpreter to the object in question, which in this case cannot be given by independent reasoning» (Peirce, 1998: 484). Here the relation is not one of physical causality but one of physiological compulsion. The heart of the distinction Peirce is drawing, though, lies in the fact that some indexes carry information along with them and in so doing “actually convey information” about their objects (genuine indexes) whereas others do not. The latter he calls degenerate indexes.

2.3. *Proper Names as Indexes*

I have just distinguished between genuine and degenerate indexes in that the former is a sign that stands in both iconic and indexical relations to its object whereas the latter is a sign that stands in only an indexical relation to its object. My aim now is to show that, on Peirce’s account, a sign can “grow” in that while it may initially function merely as a degenerate index, the sign can subsequently gain an iconic relation to its object, i.e., function not merely indexically but also iconically. In order to make the case for this claim, I will turn to Peirce’s theory of proper names. My comments on Peirce’s theory of proper names will be limited to just this aspect,

but for more on his theory of proper names, see Hilpinen (2013), West (2013), Pieterinen (2010), Weber (2008), Thibaud (1987), and Pape (1982).

Peirce mentions «a proper name without signification» as an example of an index that does not carry information along with it. In qualifying his statement that the proper name must be “without signification”, Peirce means that its utterance must not call up an image of someone who has that name. For instance, if I merely say the proper name “Božanka” it may not call to mind any person named Božanka, as you may not know anyone with that name. However, since it is a proper name, you know that it stands for some person, place, or thing. Accordingly, while the proper name “Božanka” suggests someone or something having that name, it does not carry information about what it is and so has no signification. Stjernfelt (2019) explores an interesting contrast case, viz., when a street vendor’s call leads one to connect the proper name to the call, as when one hears the call and judges that Molly Malone has made the call and is outside selling her wares. In this case, the name already has a signification.

Proper names are particularly interesting to consider in light of the various sorts of relations that they stand in relative to their referents. As has just been suggested, a proper name stands in a relation of indexicality to its referent. The name “Richard” stands in a relation of indexicality to me because there was an act of “baptism” by which the name “Richard” was caused to be connected to me. For this reason, Peirce states, «[a] proper name, when one meets with it for the first time, is existentially connected with some percept or other equivalent knowledge of the individual it names. It is *then*, and then only, a genuine Index» (Peirce, 1998/1903: 286). But note Peirce’s claim here: it is then a *genuine* index. That is, the name carries information with it. The information it carries is that “Richard” is the person who looks like *this* or, in the case of “equivalent knowledge”, he is the person who may be described as so-and-so. Had one heard the name “Richard” without ever meeting me, it would be a degenerate index. Upon meeting me in person later, someone introduced to me now has an icon or image (or upon having me described, some equivalent knowledge) associated with the name “Richard”. The proper name plus the “percept or equivalent knowledge of the person it names” is now a genuine index. The proper

name has “grown” from being merely a degenerate index to being a genuine index. Once the proper name has acquired an informational or iconic relation, it is possible for someone who has met me to call up in her mind a sort of image of me, so that even when I am not present one can say “That paper Richard delivered in Milan was extremely tedious” and know who the referent of “Richard” is.

But the name “Richard” with a signification does not merely stand in relations of iconicity and of indexicality to me. It also stands in a relation of symbolicity to me. For it is by the general consensus of those who have known me that the order of those phonemes (or graphemes) comprising the word “Richard” is used to refer to me. After all, the word itself in no way resembles me; it is not tall, male, myopic, and it does not have a receding hairline. And, for my part, I am not made of seven letters. Also, while when I was born I was named Richard and so the word is connected with me, those phonemes or graphemes are connected with me by habit or convention and used to refer to me at all moments throughout my life. Accordingly, Peirce claims at one point that «A *Proper Name*, also, which denotes a single individual well known to exist by the utterer and interpreter, differs from an index only in that it is a conventional sign» (Peirce, 1998/1903: 307). First, since a proper name denotes a single individual, it stands in a relation of indexicality to that individual, and can stand in that relation without anyone having met the person it names. But, second, here Peirce also postulates that the proper name is used when the individual is well-known to exist by both utterer and interpreter. In this case, the name has a signification and so also stands in a relation of iconicity to its referent. It may acquire this iconic element when one is introduced to me. But finally, the name is also a conventional sign standing in general for all instances of me throughout time, and so it stands in a relation of symbolicity to its referent. Having met me, on future occasions when the name is used, its use may call an image of me to mind.

2.4. *Propositions and Indexes*

There is, however, an ambiguity that is lurking in these considerations, one I hinted at earlier. Sometimes, we use “sign” to mean the very thing that stands in for another thing, such as the very photograph or the very image produced by the telescope. On this

account, with respect to the photograph, the telescopic image, and the name accruing an iconic relation, there is just one sign and it stands in two relations to its object, an indexical relation and an iconic relation. Other times, we use “sign” to mean the relation itself or how the sign signifies its object. On this account, a photograph is two signs, one indexical (the causal relation) and the other iconic (the formal relations depicted in the photograph). Undoubtedly, some propositions are signs (they can also be interpretants). If, though, a proposition consists of both an index and a rheme, on the first account just described the proposition is one sign which stands in two relations to its object whereas on the second account just described it is two signs, each of which signifies the object.

In many cases, the way in which we describe the semiotic relation will not matter much. With respect to propositions, however, it does. The reason is that if a person points at a horse and says “horse”, and if we opt for the second description, then it is not clear how the person has expressed a proposition. All she has done is pointed (the index) and uttered a word (horse). She has not said that the thing pointed at is a horse. Perhaps, after all, she simply has a nervous tic that causes her to spontaneously utter the word “horse” whenever she points her finger, be it at a horse, a cat, a house, or a car. For her utterance to be a proposition, the two signs first need to be *interpreted* together as a proposition. Second, that interpretant may now serve as a unified but complex sign representing the thing indicated to be a horse. It is one sign standing in two relations to its object. (I am clearly here touching on questions of the unity of the proposition, but exploring the topic would lead too far afield – for an examination, see Bellucci, 2014.)

A similar point may be made with respect to proper names. When one first hears the name “Božanka” without any collateral information, it is merely an index. However, when a person meets Božanka, the name will gain an iconic relation. On the second description canvassed earlier, we should now have to say that there are two signs, the index-name and the icon-name. But even if we treat these as distinct signs, they will need to be interpreted together as signs of the same person. In that case, they become a unified but complex name for Božanka, a single sign standing for a person. This, though, leads us to the first description: There is one sign that relates to its object both indexically and iconically.

When it comes to unified but complex signs, to the extent that we may claim that a sign is an icon or a sign is an index, we may do so only in a secondary or accidental way. When a unified but complex sign stands in diverse relations to its referent, we may claim in this secondary way that the sign itself is an icon or an index or a symbol. But all things considered, it is better to speak of the sign considered in its relation of iconicity or the sign considered in its relation of indexicality. There is only one sign, and while that sign may have come about by first being an interpretant of other signs, it is a mistake to regard the unified and complex sign as two signs.

Thinking of the matter this way helps clarify why Peirce thinks single words can be propositions even though propositions, again, are structured entities minimally consisting of an index and a rheme. One of Peirce's examples, again, is *lucet*, or *it is light*. The rheme is obviously *light*: the word "light" tells us something about how "it" is. But what is the correspondent of "it" in the Latin proposition? Judging superficially and grammatically, it would seem the proposition has no index. But Peirce thinks this is obviously an ill-conceived view, «the Index being», he tells us, «the common environment of the interlocutors» (Peirce, 1998/1903: 281)

At first glance, Peirce's comment seems deeply confused. Why is the common environment the index rather than the thing indexed? But when we keep in mind that indexes are (properly speaking) relations between signs and their referents and that grammatical terms are called indexes only in a secondary or accidental way, Peirce's statement becomes a little clearer. Peirce is saying that there is a causal relation (which, again, may be mere physiological compulsion) between the sign (here the utterance *lucet*) and the common environment. It is the common environment of the interlocutors that (in a suitable context of conversation) causes the utterance of *lucet*. Ordinarily, we would then identify a feature of the proposition – say a demonstrative pronoun or proper name – as the index. In the case of *lucet*, though, there is no such feature of the proposition. It has no obvious grammatical correlate to identify as the index. But because the sign itself, while a single word, can stand in two relations to its object, it may have both a rhematic and an indexical relation. The rhematic relation functions by evoking a composite image of bright days (I shall more about composite images later) which represent the current weather. The indexical relation is

the causal relation leading to the utterance. The fact that it is light is what causes the person to utter *lucet*, much as the light from the star causes the photographic image (see Atkins, 2019).

3. *Propositions and Information Conveyance*

3.1. *Three Elements of Propositions as Signs*

Plainly stated, a proposition tells someone something about something. That is, propositions convey information about something to someone. For instance, in ordinary contexts of utterance, the proposition *it rains* tells the hearer that right now and in this location, it is raining outside. If in fact it is raining outside then and there, the proposition is true. If not, the proposition is false. As Peirce says in his obtuse way,

Truth belongs exclusively to propositions. A proposition has a subject (or set of subjects) [i.e., an index] and a predicate [i.e., a rheme]. The subject is a sign [viz., an index]; the predicate is a sign [viz., an icon or a symbol that elicits in the mind of the hearer an icon or image]; and the proposition is a sign that the predicate is a sign of that of which the subject is a sign [i.e., the proposition is a unified but complex sign constituted by interpreting the index and rheme as signs of the same object]. If it [i.e., the thing indicated by the indexical relation] be so [i.e., has the property or attributes mentioned in the rhematic relation], it [i.e., the proposition] is true. (Peirce, 1998/1906: 379)

Keeping this characterization of propositions in mind and thinking of the distinctions among icons, indexes, and symbols as distinctions of relations between signs and their referents as I urged earlier helps explain how a single photograph can be a proposition even though propositions are structured entities consisting of an index and a rheme. Peirce states of photographs that «the mere print does not, in itself, convey any information. But the fact that it is virtually a section of rays projected from an object *otherwise known*, renders it a *Dicisign* [i.e., makes it propositional]» (Peirce, 1998/1903: 282). Although one sign, a photograph stands in two different relations to its referent. On the one hand, it stands in an indexical relation to the object photographed because the camera itself is oriented and designed in such a way that the light reflecting off the object causes the photographic image. On the other hand, it is rhematic insofar

as it supplies information about the thing photographed, just as a rheme supplies information about the thing of which it is said by eliciting a composite image in the mind of the hearer. But these two relations alone do not suffice to make the photograph propositional. As Peirce says, the mere print does not *convey* information, where information conveyance is conveyance of information to someone. What is also required is that someone know the image to be caused by a section of rays absorbed and reemitted by the thing photographed and that light striking a photographic plate. The person may then interpret the image as unified but complex sign involving both a rheme and an index. If one were to simply see the photograph without knowing it to have been so caused, it would not be an informational index.

From these considerations, it is clear that a series of graphemes or phonemes expresses a proposition only if (1) it is addressed to someone (or, to use Peirce's broader conception, it has an interpretant), (2) it conveys information, and (3) it indicates what thing that information is supplied about.

With respect to the first condition, propositions are proposals typically made to someone (perhaps one's future self), with the recommendation that the person believe it, assert it, or consider it to be true. They are distinct from suppositions, which are to be granted by one's interlocutor even if she does not believe, assert, or consider them to be true. In short, propositions *tell someone* something about something.

With respect to the second condition, the rhematic relation of the proposition is what supplies us with information. It tells someone *something*. As I have already suggested, the rheme in paradigmatic propositions such as *it rains* provides information by eliciting in the mind a composite image or icon of the referent. Obviously, the word "rain" looks nothing like rain. But to a competent user of the English language, the word can bring to mind a composite image of the rainy days one has seen and, in that way, supply information about what the weather is like on this day. As Peirce says,

It is impossible to find a proposition so simple as not to have reference to two signs. Take, for instance, "it rains". Here the icon is the mental composite photograph of all the rainy days the thinker has experienced. The index is all whereby he distinguishes that day, as it is placed in his experience. The symbol is the mental act whereby he stamps that day as rainy. (Peirce, 1998/1895: 20)

A key part of this story is that the utterance of the word “rain” is what elicits that icon or composite image of rainy days. As Peirce notes in 1905, «a proposition consists of two parts, the *predicate* [i.e., rheme], which excites something like an image... in the mind of its interpreter, and the subject, or subjects [i.e., index], each of which serves to identify something which the predicate represents» (Peirce, 1839-1914: ms. 280: 31-2).

The composite image need not be a visual image. Although we often use “image” in this narrow sense, in a broader sense an “image” is simply whatsoever we can imagine. But the imagination is not restricted to visual content. We can imagine sounds, feels, tastes, odors, and so on. Peirce remarks, «If I write the “sound of sawing”, the reader will probably do little more than glance sufficiently at the words to assure himself that he could imagine the sound I referred to if he chose to do so. If, however, what [I] proceed to say about that sound instigates him to do more, a sort of auditory composite will arise in his imagination» (Peirce, 1998/1905: 317). For more on Peirce’s theory of composite images, see Hookway (2002), Ambrosio (2016), and Paolucci (2017).

With respect to the third condition, the indexical relation functions as an indicator. It tells someone something *about something*. Unless it is clear to what the rheme is to be applied, no information is conveyed. What is important is not simply that there is information for someone to extract but that there is a conveyance of information to someone about something. The information supplied *is about something* and understood by the hearer to be about that thing. As Peirce states, a proposition «conveys information, in contradistinction to a sign from which information may be derived» (Peirce, 1998: 275, 1903). A footprint in the wet sand is a sign from which information may be derived, but it is not a proposition since it does not tell us who left the footprint.

3.2. Gestures as Indexes of Propositions

Gestures such as a pointing index finger oftentimes function as the index of a proposition by physiologically compelling the hearer to attend to the object about which something is being said. As Peirce states in 1903, «the perceptual judgment I have translated into “that chair is yellow” would be more accurately represented

thus: “☞ is yellow”, a pointing index-finger taking the place of the subject» (1931-58: vol. 7 par. 635). Similarly, suppose I am with my children, point to a horse, and say “horse”. I have now uttered a proposition roughly equivalent to “that is a horse” where the copula and article are part of the rheme “horse” and my pointing index finger takes the place of the demonstrative pronoun “that”. Though it consists of only one word, my utterance of “horse” along with my pointing finger, interpreted into a unified but complex sign, constitute a proposition. Had I simply said “horse” without pointing, I would have merely uttered a word and not identified something to be a horse. The gesture makes it such that my utterance conveys information.

Peirce makes this point about information conveyance and pointing at least three times. One time is in letter to Georg Cantor. Here is the quotation in full:

A man walking along a lonely road sees at a distance a house on fire. He trudges on for twenty kilometres, when he meets another man. He says “There is a fire”. The second man does not derive much information from this; so he asks “Where?” The first man stretches out his arm and points out the direction of the fire, and says “There, twenty kilometres back”. The second man has now to look at the arm, which compels his eyes to look at the country in a certain direction, to recall what he remembers to have experienced [and so on]. All these things must come before his mind before that man’s first proposition can convey any information. (Peirce, 1979/1900: vol. III/2:70)

In order for the utterer to convey information to the hearer – that is, to provide information about something to someone – he needs to point to, to put the hearer into a relation of indexicality to, the referent of the proposition. While informational insofar as it contains the word “fire”, which a competent user of the English language would understand, “there is a fire” is not sufficient to convey information to someone about where there is a fire. The man needs to point, to gesture, toward the location of the fire as well. By virtue of his pointing, the hearer is physiologically compelled to look in the direction of the pointing finger and to recall what he has seen along that road.

The second time Peirce mentions information conveyance and pointing is when he writes, «A man walking with a child points his arm up into the air and says “There is a balloon”. The pointing arm is an essential part of the Symbol [i.e., the proposition “There is a

balloon”] without which the latter would convey no information» (Peirce, 1998/1903: 275). Again, the utterance contains information insofar as a person who understands English could identify the sorts of things that are balloons. But without a pointing finger the utterance conveys no information. Information is supplied by the rheme “balloon” insofar it elicits a composite image. The conveyance of that information to a hearer requires a gesture, a pointer, to supply the indexical relation.

A third time Peirce makes this claim is in a letter to Lady Welby. He remarks,

No object can be denoted unless it be put into relation to the object of the commens [i.e., what is common between the two minds communicating]. A man, tramping along a weary and solitary road, meets an individual of strange mien, who says, “There was a fire in Megara”. If this should happen in the Middle of the United States, there might very likely be some village in the neighborhood called Megara. Or it may refer to one of the ancient cities of Megara, or to some romance. And the time is indefinite. In short, nothing at all is conveyed, until the person addressed asks, “Where?” – “Oh about half a mile along there” pointing to whence he came. “And when?” “As I passed”. Now an item of information has been conveyed, because it has been stated relatively to a well-understood common experience. (Peirce, 1998/1906: 478)

Again, Peirce is clear that an indexical relation indicating where and when the fire occurred is necessary for information about the fire in Megara to be conveyed.

I hope I am being sufficiently clear that statements such as “there is a fire” and “there is a balloon” still contain information insofar as they evoke a composite image. What they fail to do – unless accompanied by a gesture or some context suggesting the scope of application of the rheme – is to convey information to someone about something. Or, to put it another way, such utterances as “there is a balloon” with no indication of which thing the utterance is about conveys no information. At best, in an ordinary context, it only tells us that if we care to scour the entire world, we will find a fire or we will find a balloon. But the utterance may not even do that, since as Peirce notes it might be about a romance or fictional story. Is such an utterance a proposition? Without some additional information which restricts the rheme’s scope of application, it does not convey information and so is not a proposition.

If you will allow me a little moment of humor to drive the point I

am making about information conveyance home, school children in America often tell a simple joke that illustrates how important gesturing is to fixing the referents of pronouns. Here is the joke: One boy asks another boy, "What did you eat under there?" without gesturing or otherwise indicating the location to which he refers. Accordingly, the other boy responds inquisitively, "Under where?" The first boy replies, "Oh, gross, you ate underwear under there?!" The joke plays off of the homophony of "under where" and "underwear", but the joke also highlights an important role that gesturing plays in fixing the referents of pronouns and especially demonstrative pronouns. If, without any context, a person asks "what did you eat under there?" for the person's question to elicit any response in the form of a proposition, the question typically needs to be accompanied with ancillary information supplied by a gesture. Unless he adds another descriptor to clarify to which location he refers, the questioner must point to the place he means, must nod to the place he means, or must somehow non-verbally indicate what the referent of the demonstrative pronoun is. If the questioner fails to do so, he will not get an answer to his question but another question asking what the referent of "there" is supposed to be.

4. *Gestures as Propositions*

Following Peirce, I have been characterizing propositions as unified but complex entities derived from interpreting an index and a rheme as signs of the same object. Propositions, of course, are not entities in that they are individuated physical existents but are entities in that they are things to which predicates can be applied. In the case of propositions, the most notable predicates which apply to them are truth and falsity. Propositions tell someone something about something. When the thing indicated has the property or attribute stated in the rheme, the proposition is true. Otherwise, it is not true, which many people (for better or worse) equate with being false.

We have also seen that gestures such as pointing are sometimes the index of propositions. Peirce, though, apparently denies that a gesture such as a pointing index finger suffices to express a proposition. As we have seen, he distinguishes between genuine and de-

generate indexes and classes pointing fingers along with the latter. In what remains, I am going to call this into question and argue that gestures alone can constitute propositions.

Now in one case, this is obviously true: Those who use sign language communicate using gestures and they surely make assertions which are either true or false. Also, Giovanni Maddalena (2015) has explored a much broader theory of gestures than the sorts of gestures with which I am concerned here. The point I wish to make is that in very basic and simple cases, we sometimes use gestures to communicate propositions to one another, and sometimes these propositional signs consist of nothing more than a pointing index finger.

Here is an example: A bicyclist signals she is turning left by extending her left arm to be parallel with the road and pointing. Translated into an English sentence, the gesture means, “I am turning left” or “I am turning that way” or “Watch out for me! I am about to turn”. All of these translations of the gesture into English suggest the gesture itself is propositional: It tells someone something about something. In this case, it tells a driver that the bicyclist is going to turn left.

Considering such an act of signaling in light of Peirce’s analysis of the proposition, the index consists of the fact that the cyclist is the one raising her hand and is pointing in the direction she plans to turn. What supplies the rhematic or informational relation? First, the direction of her pointing is itself iconic with the line the bicyclist will begin taking on her turn. That is, currently, she is going forward, but on her turn she will be going in the direction towards which she is pointing. Second, because bicycling arm gestures are conventional, the extended arm also evokes a composite image of all the bicyclists one has seen signal by pointing. That composite image also stands in a relation of iconicity to the left turn the signaling bicyclist will take.

Earlier, I mentioned that proper names as signs of some person can have a merely indexical relation to their objects initially and acquire an iconic relation. When a proper name has signification, it is one unified though complex sign. A proper name, merely uttered on its own, may sometimes be a proposition. It may be so in cases of first introduction, as when a third person introduces two others by successively saying and pointing to the individuals, “Božanka, Rich-

ard. Richard, Božanka”, which may be rephrased as, “Božanka, this is Richard; and Richard, this is Božanka”. The name, as Peirce tells us in the earlier quotation, is here a genuine index since it becomes associated with an icon or image of to whom the name applies. But apart from these contexts, a proper name merely uttered is not usually a proposition. That is because a proper name on its own does not usually convey information. What is requisite for a proper name all on its own to convey information is a broader context, such as that it answer a question. For example, a person might ask, “Who is married to Richard” and another person might reply “Božanka”. The proper name now, as an answer to a question, conveys information to someone about something, viz., that Božanka is the wife of Richard.

I submit that a pointing finger all on its own can be a proposition because while it stands in an indexical relation it can also stand in an iconic relation by having an established convention of use such that it generally means thus-and-so. A pointing index finger, while ordinarily a degenerate index, in some contexts of use has accrued an iconic relation so that the gesture is also a rheme. The bicyclist points in the direction she will turn. This is one sign, but it is a complex sign conveying the information that she will turn in the direction indicated. As such, she is stating through her gesture a proposition; she is “saying” to other drivers that she is about to turn. In these cases, a pointing index finger alone is not importantly different from a single word such as *lucet*, *fulget*, or the utterance of the name “Božanka” when two people are introduced. As *lucet* and *fulget* indicate the environment and evoke a composite image of light or of lightning and as the use of the name “Božanka” when making introductions supplies information about who the bearer of the name is, so too the pointing index finger indicates the direction the bicyclist will turn and evokes a composite image of bicyclists pointing in the direction she will turn.

As already noted, propositions may be true or false. One might then wonder whether the bicyclist’s signal can be true or false. It can be. A bicyclist can signal that she will turn left and yet proceed in a straight line. She has signaled a false proposition. This is akin to someone driving a car and signaling that he will turn left but not doing so. In this case, the blinking light tells other drivers something about something – namely, that the person in the car with the turn

signal on is turning left – but that proposition turns out to be false if the person does not turn left.

Here is another example. One time, I came to a stop at a stop-light. I looked over to my right, and the man driving in the lane next to mine gestured first by pointing to himself and then by pointing to the left. He was saying something to me. It is not entirely obvious how we should render what he was trying to saying in English. He might have been saying “May I turn left in front of you?” or “Let me turn left in front of you!” or “I am going to turn left in front of you.” or “I wish to turn to left in front of you. May I?” Now some of these renderings are interrogatives, others are imperatives. Still others are obviously declarative sentences. Which did his gesturing mean? Was it a question, an imperative, or a declarative sentence?

I submit it was all three (see also Peirce, 1931-58: vol. 4, par. 538; Boyd, 2016). Gestures belong to a primitive form of life, and so the distinctions we draw in language among tenses or moods are collapsed. There is no sense in wondering whether the gesture should be understood indicatively as a statement of one’s desires or intentions or imperatively as a statement of one’s planned action. I would suggest that this is because the linguistic distinctions themselves grow out of the need to make our gestures more explicit, more exact. Every language must balance demands of efficiency against demands for exactness. Gestures, which emerged in a primitive form of life, are highly efficient; what they are not is highly exact. To put it another way, the gesture is both an indicative, truth-apt statement of one’s desire and intentions and a command and an interrogative requesting permission, and it is only in a more refined language that we distinguish among these aspects of the gesture itself.

But here is the point: the man pulled up beside me. He pointed to himself. Then he pointed to the left. I nodded, indicating the information had been conveyed. The man, however, proceeded to drive straight ahead and not turn left in front of me. The gesturing had led to an agreement between him and me: that he would turn left in front of me. Also, the gesturing guided my action, since when the light turned green I paused to allow the man to turn in front of me. I believed that he would turn in front of me. The gestures conveyed information to me – they told me something about something – and that means they were propositional. In the end, though, the man was a misinformer and the information he conveyed was false.

5. Conclusion

I have been arguing for a set of related theses. One is that propositions tell someone something about something. Accordingly, they involve someone to whom the proposition is proposed, information, and an index indicating about which things that information is supplied. Without both an indexical relation and a rhematic relation, information cannot be conveyed. The rheme is needed because otherwise there would be no information, and the index is needed because otherwise the information would not be conveyed about anything. In some of the simplest sorts of propositions Peirce takes to be paradigmatic – *that is yellow, that is a balloon, there is a fire* – the index also requires an accompanying gesture to indicate the referent of the demonstrative pronoun. Peirce, however, apparently denies that a gesture such as a pointing index finger can alone be a proposition since, on his view, a pointing index finger is a degenerate index. I have argued that gestures alone can also be propositions. In some contexts of use, they not only tell someone something about something but can command assent and guide action. Moreover, gestures can be true or false.

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