The Semiosis of Indexical Use: 
From Degenerate to Genuine

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Abstract: This article demonstrates how Peirce’s core definition of Index extends even to Objects which do not co-occur in space and time with their referent. Although the arguments are philosophical in nature, they are supported by developmental and empirical findings. The case of absent Objects as constituting Objects of indexical use is the primary focus; and rationale is offered from Peirce’s early and later work to bolster this claim. The analysis proffers the bold assertion that Index, especially in its Degenerate use without an Interpretant, qualifies as the most primary sign vehicle, and that Index to absent Objects determines whether indexical use is Degenerate or Genuine.

Keywords: Peirce, index, degenerate, genuine, development

Introduction

The directional nature of indexical signs, as applied to absent objects, has received little systematic attention in the field of semiotics, perhaps as a consequence of the centrality of Secondness in Peirce’s definition of index (specifically, to refer to objects which are in an existential relationship
with their signifiers). Absent objects of indexical signs deviate from the traditional Peircean interpretation of a viable index-object relationship attached to an interpretant in that the referent is obviously not physically present in the spatio-temporal context during the referential act. Despite this spatial disconnect between absent object and its representamen, the object-sign relationship nonetheless falls within the purview of Peirce’s construction of indexical signs. The essence of the argument is that use of indexical signs to refer to non-present objects demonstrates a primary advance in semiosis and in socio-cognitive development.

It is not until children ascertain certain indexical social skills (such as joint attention) that they begin employing indexical signs to refer to displaced or absent objects. This indexical social competence appears to be the precursor for the use of other gestural and linguistic indices (pointing, demonstratives) to refer to absent objects and mental constructs. It is the reciprocity of social index via joint gaze which lays the groundwork for the transition from degenerate to genuine index. This inquiry provides rationale for the transition from the use of indexical signs with a dependence on the perceptual to those whose objects are asyncretous in space and perhaps time from the act of indexical reference. Without a framework of Other-to-Self and Self-to-Other, indexical reference lacks the means to advance from its degenerate use to a more genuine use whose objects are mental images or memories, and even later in development, to hypothetical or possible objects.

The Peircean distinction between degenerate and genuine index provides a useful tool to describe and attempt to explain notable developmental advances from the perceptual in Secondness, to social index wherein Firstness drives Secondness, to indexes with more conventional interpretants (Thirdness), and finally to more hypothetical uses dependent on intrapsychologically constructed interpretants.1 The shift from degenerate to genuine indexical use illustrates an increasing apprehension of the relevance of Firstness and Thirdness to individual experiences in Secondness, brought about through socially reciprocal schemas.

At first glance, the shift from degenerate to more genuine uses may appear to be counter-intuitive, but is supported by well-founded rationale. Although a more colloquial use of “genuine” implies a more pure or more valid application, Peirce’s use of genuine index draws upon more complex characteristics of the

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1 The interpretant is defined by Peirce as, “something in the Mind of the Interpreter, which something, in that it has been so created by the sign, has been, in a mediate and relative way, also created by the Object of the Sign, although the Object is essentially other than the Sign. And this creature of the sign is called the Interpretant” (n.d., c. 1903: CP 8.179, italics Peirce’s).
sign in Firstness and Thirdness. Degenerate uses are not less indexical than are genuine ones; they merely consist in the most central, or most nuclear, of what characterizes indexicality, namely, Secondness, coexistence between sign and object. Degenerate indexical use actually represents the core of what it means to engage in an indicative act, stripped of the typical perceptions, interpretations, and conventions which later attach thereto, as a consequence of experience and culturally-ascribed determinations. The “purest” use of index, then, is the degenerate form, which, rather than implying inferior status, or a departure from the norm, represents the zero-point of indexical use. Hence, index’s use categories are instrumental not merely in describing its semiosis but in capitalizing on its primacy as the most basic of sign-object relations.

**Peirce’s Concept of Index**

In Peirce’s ten-fold division of signs as set forth in his December 1908 letter to Victoria Lady Welby, index belongs to the fourth trichotomy: Icon, Index, Symbol (1908: EP 2:489, CP 8.368). The first three trichotomies logically precede the fourth, in that the First Trichotomy focuses on the sign in itself and the Second and Third on types of objects (Immediate, Dynamic); while the Fourth considers the effect of the object upon the sign (Savan 1988: 33). The remaining six trichotomies focus on the issue of interpretant (1908: EP 2:489, CP 8.368). Without first expounding categories pertaining to sign and object individually, any observation of how objects affect signs is superficial. This discussion will presuppose familiarity with the first three trichotomies, and will focus on index as a sign affected by its object.

Peirce identifies three primary attributes of index: one, physical contiguity between the sign and object, directing attention with brute force; two, reference to individuals; and three, an absence of resemblance or law-like relation between the representamen and object (1901: CP 2.306; 1903: CP 4.447, respectively). Peirce additionally identifies two less-material attributes of index: having characteristics independent of interpretation, and asserting nothing (Atkin 2005: 163–164). According to Atkin (2005: 183), the third primary attribute (absence of sign-object resemblance/law-like relation) is less material than the other two primary attributes. Peirce’s mention of non-resemblance and non-law-like relations intimates that nothing is being

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2 Peirce’s ten-fold division of signs represents what is thought to be his more developed taxonomic system. Although earlier Peircean manuscripts are replete with definitions and illustrations of index, such are considered less indicative of his final perspective.

3 The first three trichotomies of Peirce’s division of signs take up the issue of the sign in itself: 1) Potsign, Famisign, and Actisign; 2) Descriptives, Designatives, and Copulants; and 3) Abstractives, Concretes, and Collectives (EP 1908: 2.483–488).
asserted, and that index’s characteristics are independent of interpretation. Since index can exist as a directional sign devoid of any form of resemblance or generality as a purely existential brute force directional, Atkin’s distinction between Peirce’s primary and less material attributes of index is made valid by the nearly redundant nature of the less material attributes of index: asserting nothing, and the lack of resemblance/law-like relation should be subsumed under Peirce’s primary attribute: independence from interpretation. Presumably, sign-object relations which are independent of interpretation likewise assert nothing; and if they assert nothing, they would likewise be devoid of a resemblance or law-like relation. Neither Peirce’s primary nor his less material attributes account for how genuine index can qualify as indexical. Any index which contains iconic or symbolic meaning (genuine indices) would be expelled from indexical status, based on their inherent reference or law-like relation to their object. Peirce’s attributes of index (primary, less material), then, may have been proffered to degenerate cases of index in which index is “nearly pure” (1885: CP 3.361). Peirce must have generated the notion of genuine indices to indisputably demonstrate that index as a sign.

Nearly pure indices exist as degenerate forms without interpretant. Although Peirce insists that interpretants are necessary to reach status as signs, these instantiations of indexical signs (degenerate uses of demonstratives) can function without interpretants. But genuine indexical signs require interpretants, especially given their law-like character: “Only through its interpretant can a word be a sign of a class or a law” (Savan 1988: 40). In this way, the existence of the genuine index rescues the category from index’s demise into non-signhood, since many indexical signs (those of the genuine type) do require interpretants. Many Peirce scholars have been troubled by this seeming contradiction: “One inconsistency which bedevils Peirce’s discussion of the index is that he frequently included the interpretant of the index as a criterion, sometimes as part of the definition, of the index” (Savan 1988: 38–39, italics Savan’s).

The distinction between degenerate and genuine index provides the key to negating the contradiction and to reifying the consonant nature of the Peircean indexical sign. The basis for the distinction lies in Peirce’s differentiation between designations and reagents. Although little explicit attention was given to this differentiation on the part of Peirce (Atkin 2005: 178), the differentiation nonetheless is implicit in Peirce’s illustrations (from 1885 to 1908, when the designation/reagent contrast became explicit) of degenerate vs. genuine Secondness. While designations “act to force the attention to the thing intended”, reagents “indicate nothing unless the mind is already
acquainted with its connection with the phenomenon it indicates”, presumably the object (n.d.: CP 8.368 fn23). Even in 1885, Peirce refers to index as having a “function being to designate the subject of discourse” (1885: CP 8.41); and in the same time frame, he asserts that, “Demonstratives and relative pronouns are nearly pure indices” (1885: CP 3.361). What Peirce leaves unaddressed are the distinctive uses of demonstratives/locatives, requiring the application of designations/reagents to inform indices’ categorization from the degenerate to the genuine. Designations, as “nearly pure indices,” appear to materialize as degenerate indices. Conversely, reagents, in that they inherently require general meaning in Thirdness and measure or affect concurrent substances, necessarily are genuine indices. When the distal form only of these demonstratives/locatives is used without a proximal contrast, they qualify as designations. Demonstratives are reagents only when a general meaning as near or far is at least underlying.

Atkin (2005) discusses how Goudge’s interpretation of this Peircean genuine/degenerate dichotomy as applied to index is in error — it does not lie in the separation between causality and non-causality, but in whether other than directional meaning is present within the indexical sign. Other Peirce scholars have followed Goudge’s seemingly faulty interpretation (Fitzgerald 1966: 45; Almeder 1980: 25). Peirce himself indicates that a primary characteristic of index (without making the distinction between degenerate and genuine) is that the object is the primary determinant in the meaning of the sign. He even goes as far as to imply that the interpretant may be unnecessary: “An index is a sign which would, at once, lose the character which makes it a sign if its object were removed, but would not lose that character if there were no interpretant” (1902: B 104). When construed in light of the distinction between degenerate and genuine index (nearly synonymous with designations and reagents)\(^4\), the question of whether all indexical signs have interpretants becomes clear. Whereas interpretants are inherent to genuine indices, those which contain Firstness or Thirdness, interpretants associated with degenerate indices (especially those gestures in existential relationship with the object) are not an intrinsic part of the sign-object relation; hence interpretants are often absent.

Atkin (2005: 178) attributes the distinction between degenerate and genuine indices to be a consequence of whether the indexical sign serves as a reagent, as opposed to a designation. Atkin alludes to the inherent components

\(^4\) A definition of the term “reagent” is in order, since Atkin does not explicitly define the term. As used in the physical sciences, “reagent” refers to a substance which, when added to a compound, either causes a reaction or measures a reaction on the part of the other components within the compound.
of the character of reagent as having an “involved icon” (2005: 181). But given that the sign is an index, it cannot also be an icon. An effect which measures the presence or absence of some element, or which forces a response, may not reside in the sign itself, but may be a consequence of the interpretant. Signs, such as degenerate indices, may not produce such outcomes (based on Firstness and Thirdness), if no interpretant is associated with them.

Short (2007: 89–90) makes a further distinction, the utility of which is immeasurable in the context of indexical degenerates — that of irreducible vs. reducible, and/or action vs. reaction. The utility of this distinction lies in differentiating indexical degenerate reference whose relation is so dependent on Secondness that an interpretant apart from the indexical act or action is immaterial, as in the case of directional gestures to a present object without expressing any interpretant, such as an imperative or an indication of preference. Index, here, is irreducible only if a message beyond attention to the object is expressed — as Short argues, “Degeneracy is not reducibility: the fact that a color occurs is not reducible to relations other than dyadic (the color’s being in this sample is not a matter of pure 1stness)” (2007: 90). Once the message exceeds directional attention, the relationship between index and object is reducible and contains an interpretant likely to effect a reaction. Such reaction-based indices appear consonant with indexical reagent classification. To qualify as a genuine index, signs must be reagents (Atkin 2005: 178), whereas, reducibility is the defining attribute for Short (2007: 90). While Atkin indicates that reagents reside in the genuine sign itself, Short’s notion suggests that reducibility resides in the interpretant, not the genuine sign, given that intrinsic to genuine signs is their meaning beyond the factual. The indexical gesture can go beyond the factual connection between sign and object, such that the sign can elicit a response. Peirce illustrates this with “a scream for help” (n.d.: CP 8.368 fn23). The scream for help not only indicates where the distressed person is in relation to the hearer, but impels the hearer to relieve the distress — or “forces the will [of the hearer] to accord it” (loc. cit.). The scream, in this context, is reducible, in that the effect of index goes beyond the factual (its location). The sign here merely indicates location, while the interpretant serves to elicit any response or feeling of responsibility on the part of the hearer.

Rather than using reagency or reducibility as the qualifying attribute for genuine index, Kruse (1991) employs resemblance, which implies a shift in the nature of the interpretant. Kruse proposes the following continuum: from identity (degenerate), to resemblance (genuine) which culminates in a reaction-based relationship between signs and objects. While identity
emphasizes the relation of equivalence; resemblance entails some relation of similarity or analogic reasoning (1991: 276–277). Tracing early degenerate use, to incorporate genuine use, illustrates how the application of Firstness and Thirdness to indexical signs in Secondness accounts for increased semiosis in the course of development, and emphasizes the contribution of interpretant within that semiosis.

**Degenerate vs. Genuine Index**

A sign, be it prelinguistic or linguistic, whose referent is any kind of object within the purview of attention constitutes the degenerate indexical sign. Whereas indexical signs (linguistic only) whose referents constitute objects as a class/generalization, or which exceed the foregoing and are fueled by subjective logical and affective caprice in possibility, are instantiations of genuine index.

The Genuine Index represents the duality between the representamen and its object. As a whole it stands for the object; but a part or element of it represents [it] as being the Representamen, by being an Icon or analogue of the object in some way; and by virtue of that duality, it conveys information about the object. A Degenerate Index is a representamen which represents a single object because it is factually connected with it, but which conveys no information whatever. (EP 2:171–172, italics Peirce's)

It appears, then, that the latter case requires spatio-temporal contiguity between the representamen and the object, since the representamen conveys “no information whatever” — it merely “forces attention to the thing intended” (n.d.: CP 8.368 fn23). Furthermore, the object of a degenerate index is not of any particular type or class; but is one of a host of possibilities whose sign neither resembles nor classifies. The degenerate index refers to a single object which is in existential relationship with its signifier (1903: CP 5.75); and in this way the object and degenerate index are related factually. This factual relationship emphasizes the co-occurrence of the two in the same context, obviating the necessity for spatio-temporal contiguity. Spatio-temporal contiguity, however necessary, is not sufficient to qualify as degenerate, since even genuine indices can physically and temporally co-occur with their objects, as in the “scream for help” (n.d.: CP 8.368 fn23). Degenerate indices must be as pure a case of Secondness as can materialize, without communicating additional emotive or classificatory information. Even Peirce (1902: CP 2.283) indicates that genuine signs are in existential relation with their objects; but this is on its face inconsistent with his claim in CP 5.75 that a “pointing finger is a degenerate index” (1903). With closer
analysis, the seeming reversal is resolved, in that Peirce constructs two conditions for genuine indices: (1) that they be in existential relation with their objects, and (2) that they exhibit Firstness (1902: CP 2.283). The fact that these two criteria appear within the same entry lends further credibility to the fact that indexical signs which lack one of the criteria cannot qualify as genuine indices. It is questionable whether the pointing finger meets the second criteria (Firstness), since it bears no resemblance to the object — the finger’s trajectory, although indicating the place of the object, does not resemble the object, if the object is static. Peirce intimates that degenerate indices in the form of indexical gestures lack interpretants. Absent the element of Firstness in the use of indexical gestures, the indexical gesture as a sign conveys little else, beyond directionality; and absent the infusion of Firstness into index, which makes index genuine, semiosis would be precluded.

It is when these degenerate indices (indexical gestures) refer to objects which are absent from the context that they become genuine indices, in their reliance on mental, more dynamic objects. In this process, the instrumentality of the interpretant becomes increasingly evident. Earlier in ontogeny, prior to the use of index to refer to more dynamic absent objects, objects of degenerate indices are less likely to be dynamic, since they are governed by a more immanent goal, since the immediate visual defines the extent of the child’s space. “We have to distinguish the Immediate Object, which is the Object as the Sign itself represents it, and whose Being is thus dependent on the Representation of it in the Sign, from the Dynamical Object, which is the Reality which by some means contrives to determine the Sign to its Representation” (1906: CP 4.536). In other words, early on, when the object and sign are considered by the child to be inherently connected, such that the sign intrinsically represents characteristics of the object, use of indexical sign to immediate object dominates.

With recognition of the arbitrary nature of sign-object relations, children’s indexical signs can more often refer to dynamic objects such that the object of a particular use affects the sign. In fact, Peirce distinguishes the indexical sign as the most likely of the signs (iconic, indexical, symbolic) to be associated with the dynamic object, which is especially so later in development: the “reference of a sign to its object is brought into special prominence” (c. 1903: MS 7, 000016). Given that the issue of orientation, distance, and situatedness of an object to different origos⁵ determines which demonstrative is implemented, the object affects the sign — imbuing it with Thirdness as

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⁵ Origo is used in the Bühlerian sense of a point of orientation of a human, or of an object which has an inherent front, back, right, or left side.
a legisign, i.e., classifying the object as near or far. An index of immediate objects affects the object in Secondness as a sinsign, especially in view of the lack of physical resemblance between indexical sign and object. Conversely, a dynamic object of an indexical sign can determine the meaning of the sign. In the case of dynamic objects of constrastive demonstratives, the meaning of “this” is determined by the object’s context, which is an attribute of the object — that the object is near to a particular origo, ordinarily the speaker.

Demonstratives have a reagentive function when they are used contrastively, since they engender social effects, and since such use ascertains the respective location of the object, the referent of the origo, and the orientation of the origo with respect to the object. The non-contrastive use of degenerate indexical sign, be it gestural or linguistic, appears to exist as a designation, as opposed to a reagent. Non-constrastive indices merely represent objects with which the mind of the child has at least superficial familiarity, either perceptual acquaintanceship only or interaction-based knowledge, as opposed to mentally-represented and social knowledge (n.d.: CP 8.368 fn23). These designations include reference to physically present as well as to physically absent objects, provided that the index of the latter type does not impart information about the qualities or classifications of that object.

Pre-social gestures and early use of demonstratives or locatives are quintessential illustrations of degenerate indexical signs. The pointing finger and directional gaze, namely in their designative function, when used outside of social contexts are two obvious examples of how the representamen is devoid of meaning beyond the purely directional. Peirce refers to the pointing finger as “the type”, or the best exemplar, of index (1885: CP 3.361); and indicates that it would be “difficult to instance an absolutely pure index”, but such is not entirely impossible (1901: CP 2.306). Looking or pointing toward a referent indicates no quality or similarity of that referent to another (and thus designations), unless two referents are directionalized sequentially.6 The simultaneity along with the spatial contiguity between indexical sign and object is necessary to be a degenerate index if the object of the sign is physically present and if it is in large part immediate. If the object of the sign is mental, despite its other possible physical instantiations, the lack of spatial contiguity between the indexical sign and object makes it genuine. This illustrates the relationship between the genuine index and absent object where the sign physically directs attention to a mental object of a missing or non-present physical referent. This genuine reference to physically absent

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6 The only possibility of meaning beyond the directional in the case of degenerate indexical use is the quality or Firstness via the resemblance between the trajectory of the pointing device and the direction toward its object.
objects demonstrates the initial transition from degenerate to genuine. When indexical signs violate the dependency on spatial contiguity between signified and signifier, such transgression opens a forum for the implementation of mental images or constructions as legitimate objects of signs, and perhaps as signs in themselves. This discontinuity (primarily spatial) between indexical sign and absent object (either physical and/or mental), bridges degenerate and genuine indexical use — the sign does not point to the object in space or time, especially if the object is mental. The indexical sign has acquired an iconic function of raising affect as a consequence of the dynamic object as an eidetic mental image from a particularly significant experience. This concept is rooted in Bühler’s affirmation that indexical reference (by means of gesture) to absent objects or events is impelled by an eidetic memory\(^7\) of a past event. This developmental milestone underscores the import of iconic and subjective experience as captured in mental objects to serve as the catalyst from degenerate to genuine uses of index — from a purely designative use in Secondness (if such is possible) to a more iconic and reagentive one.

Peirce’s genuine index has a character or function rather distinct from degenerate index in that it contains information, be it iconic and/or symbolic in Firstness or Thirdness beyond its directional purpose (1903: EP 2:171). This type of sign can resemble its object and/or have its foundation in idiosyncratic affect in the event that the genuine indexical sign carries iconic meaning, such that it is reagentive. Moreover, symbolic meaning of this index is afforded when the sign indicates an objective pattern or taxonomy, as in the case of contrastive demonstrative use — “this” referring to objects within speaker’s near space, and “that” to objects within speaker’s far space. The genuine index here has a dual purpose: reference to a particular object (like degenerate indices), and the classification of that object as near to the speaker. This meaning imputed to the sign-object relation augments the status of the object from an indexical sinsign to an indexical legisign. Degenerate indexical signs can only be sinsigns — they can never function as a legisign. Reference to absent objects illustrates a violation in use of a genuine indexical sign, since it is a sinsign of an object which is not physically instantiated. In fact, the function of index to absent objects appears likewise to violate the sign’s primary status as an index, given its failure to adequately designate in the face of an object which does not have place in the physical context. Location of an object devoid of physical place cannot function to indicate the object, as in the case of degenerate indexical signs; hence, the sign in this context functions

\(^7\) Eidetic memories are vivid, detailed recall of visual images which Bühler claims are apart from conventional or objective orientations or perspectives (Bühler 1934: 28).
rather as a rhematic index of the subjective apprehension that the object is missing, or that a past event is so salient and relevant as to warrant notice. In this Firstness-based use, indexical sinsigns increasingly intimate a rhematic character, culminating in their categorization in Peirce’s third class of sign: Rhematic Indexical Sinsign (c. 1903: CP 2.256). Not until indexical signs acquire a genuine use can they become legisigns. The ontogeny of demonstratives and locatives exemplifies the process of degenerate to genuine indexical use. This process begins with the non-contrastive, pre-social, use of “that” to present objects, to its non-contrastive, social use with absent objects, to its contrastive use with “this”, which can be unaccompanied by gesture (Lyons 1977: 311; Tanz 2009: 79–81).

**Joint Attention as Index**

The semiosis of indexical use over the course of early development initially entails the use of gestural indices, and afterward linguistic indices, some of which are accompanied by directional gestures. Advances in the use of both gestural and linguistic indices have their origin in social or interpsychological exchanges, especially those which are attentional in nature. The semiosis of indexical use follows this path. The development of sign use reflects Peirce’s implication that the semiosis of index is driven by social factors: “One of these kinds is the *index*, which like a pointing finger exercises a real physiological *force* over the attention, like the power of a mesmerizer, and directs it to a particular object of sense” (1885: CP 8.41). Peirce’s use of “attention” here evidences the import of social interpretants in how the use of indexical signs develops. The forcefulness of his argument underscores that pointing as a joint attentional index has the social and psychological effect: “mesmerizing” the observer. According to Colapietro, Peirce’s semiotic rests upon social phenomena, in that the self is not discoverable as a unitary phenomenon; it is a component of the collective (1989: 91), even in its agentive, active role.8

Developmental findings of distinctive uses of indexical gestures and linguistic indices bolster the claim that a primary attribute of index is joint attentional, hence social. This developmentally-based trajectory likewise underscores the role of the changing interpretant and a shift in increasing reference to dynamic objects. Index, as an attentional phenomenon, proceeds from its degenerate use as “nearly a pure index” to a genuine use which involves joint attentional schemes rooted in Firstness and Thirdness, the bridge being reference to absent objects. The claim here is that early uses of index

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8 See also C. F. Delaney’s interpretation (1993: 119) of Peirce’s perspective of self as defined by Other.
(pre-joint attentional) demonstrate as pure an illustration of Secondness as can be ascertained, and that with increased social interaction, indexical signs acquire idiosyncratic Firstness and/or a law-like based Thirdness.

Infants’ earliest use of indexical gesture (eye gaze) may not qualify as an indexical sign, since it lacks intentionality. According to Scaife and Bruner (1975), infants’ gaze merely follows the gaze trajectory of another — mimicking another’s index. Without intentionality, and without the establishment of behavioral patterns, eye gaze fails to suggest any purposive association with an object; hence it is a proto-index. At approximately four months of age, when children engage in intentional reaching requiring eye-hand coordination in the attainment of objects, eye gaze becomes a full-fledged index. According to Piaget and Inhelder (1966: 10) this targeted reach represents intentional guided grasping such that the object to be grasped is not a consequence of accidental attainment, but of measured extension of the arm toward the sought after object with the appropriate hand shape to orchestrate procuring it. Prehensile gesture graduates to indexical status in its display of intentionality in Secondness — by virtue of action on concrete co-existent objects.9

This pre-social use of guided reach as an indexical-attentional sign is the most irreducible index (using Short’s terminology), and thus constitutes degenerate index. Indexical gestures later extend to pointing with the index finger (see Appendix on page 323) at eight months of age (Bates 1976: 61, West 2011c: 152) and extending the hand and arm in giving and receiving exchanges at 9 months and thereafter (Carpenter, Nagel, and Tomasello 1998: 681; Volterra, Caselli, Capirci, and Pizzuto 2005: 9). Because they are for ego alone, such that they are not concurrent with eye gaze toward another, nor mutual eye gaze exchange (Carpenter, et al. 1998: 153), they are still irreducible, hence degenerate indices. Pre-social eye gaze, coordinated with pointing, establishes and maintains spatial contiguity between co-existent directional sign and referent, underscoring its groundedness in Secondness.

Between 1;0 and 1;2 search (gaze as index) for hidden referents upon other’s request materializes (see Appendix), although gaze toward another in the process of an indexical event does not rise to the level of joint attention (Baldwin and Saylor 2005). In fact, children's gaze at this point in development is unidirectional (Saylor 2004: 608). Apprehending that hidden objects

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9 Firstness may likewise be present, given initial notice of the object, for without Firstness in the form of perception and preference, notice of the object would be unlikely. Thirdness may likewise surface in the child’s use of a particular hand shape to receive or acquire the object; and recognition of types of hand shape toward successful attainment of different types of objects constitutes a general behavior type or habit, although Secondness is still primary.
likewise have substance and that directional, intentional, extended reach can access hidden objects, indicates an advance in the use of index from coexistent sign with its referent to some physical or spatial displacement between the two.

At approximately fifteen months of age, children can recognize the absence of objects (see Appendix); nonetheless, a present anchor is necessary for such recognition (Saylor 2004: 600). Concurrent with recognition of absent objects appears a primary social competency, namely, joint gaze, which Saylor (2004: 608–609) has found to be a necessary skill in recognition of absent reference. Saylor (2004: 602–603) and Saylor and Ganea (2007: 698) claim that infants recognize absent objects upon sustained gaze toward a physical attribute (color or shape) of an object after its removal from a child’s environment; these mental representations can be held in memory for more than two minutes (Ganea and Saylor 2007). Nonetheless, actual reference to absent objects by means of gesture and/or demonstratives is more protracted in development, occurring at approximately twenty months of age (Sachs 1983: 5).

Index graduates from a purely unidirectional instrument which demonstrates little other than direction toward a present object suddenly in focus, adhering to Peirce’s attributes of a degenerate index to a more genuine index. Advancement to more genuine uses of index is characterized by a bidirectional, socially-based tool with which children initiate, receive and validate their attention to a non-present entity. It is in this way that children increasingly express preference and affect motivated by the attention of another, establishing the social roots of genuine indices. Recognition of the absence of an object gives rise to the use of mental signs as dynamic objects of indices. A mental image representing the expectation of where the object would be, were it present, or a mental representation of some quality of an object which has been recently withdrawn, suggests that objects of indexical signs have become mental and dynamic. It is at this juncture when indices experience some significant semiosis — from their degenerate use referring to any perceptually salient object, to an object represented by a mental sign constructed individually and not yet law-like. Recognition of, and reference to, absent objects develops in conjunction with joint attentional gaze, validating the supreme influence of social interaction in semiosis.

The Social Role of the Interpretant

The interpretant, for Peirce, is necessary to qualify as a sign. According to Savan, relying primarily on Peirce’s (1867) description of the function of interpretant as cited in CP 1.553: “The theory of the interpretant is the most extensive and important of Peirce’s theory of signs” (1988: 40). The
interpretant is the third component of a sign, and is itself a third, in that it consists in a meaning which emanates from the connection between sign and object: “A *representamen* is a subject of a triadic relation TO a second, called its *object*, FOR a third, called its *interpretant*, this triadic relation being such that the *representamen* determines its interpretant to stand in the same triadic relation to the same object for some interpretant” (1903: CP 1.541; B99–100) The relationship between interpretant and object is of particular note, especially when their signs are indexical. In his October, 1904 letter to Lady Welby, Peirce characterizes the interpretant-object relation as follows: “A sign therefore is an object which is in relation to its object on the one hand and to an interpretant on the other, in such a way as to bring the interpretant into a relation to the object, corresponding to its own relation to the object” (1904: CP 8.332). The object of a degenerate index, however, may not stand in the same relation to an interpretant as does the object of a genuine index. A genuine index requires an interpretant, especially by virtue of any law-like or analogic meaning connecting a more dynamical object to its indexical sign. Nonetheless, the object of a degenerate index is more likely to be an immediate object; hence its properties as instantiated in its interpretant are more likely to be physical Firstness-based ones (e.g., shape/color). In fact, the object of a degenerate index may not even have an interpretant.

Index, in its early degenerate use, may constitute the only sign for which the existence of interpretant is questionable. The claim here is not that index may be devoid of interpretants, as Peirce and Peircean scholars have occasionally intimated, but that the existence of the interpretant, while equally necessary, is qualitatively distinct from interpretants of icons and/or symbols. Given the nature of index as a Second — as referring to an existent object in the here and now — the substance of the reference is the object, especially in degenerate cases, since the sign is only a sign of that object because it coexists with it. Peirce characterizes the index as a sign that would not be that sign, were it not coexistent with the object (1902: B 104). As a consequence of increased importance of object to sign for indexical reference, the nature of the interpretant depends heavily upon attentional phenomena. The effect of the indexical sign is to secure (in a social context) the joint attention of self and of another to the object of the index. Interpretants of iconic or symbolic signs depend less on noticing novel objects and more upon classifying objects as having similar features or roles, or similar modes of conduct which invite conceptual effects. In forcing attention on the object by “blind compulsion” (CP 2.306), index functions to individuate (drawing upon its designative

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10 Cf. CP 2.304.
function), not primarily to facilitate awareness of similarities or classifications into which objects fit, as in the case of iconic or symbolic signs. The effect of selecting or individuating objects emphasizes their distinctive attributes, not their similar characteristics to other objects. This individuating function inherent in indexical signs has its effect in more advanced (genuine) uses not merely on the focus of the sign user, but on the mind of another, namely, to turn the focus on the same object for both. Hence, later in development, indexical interpretants acquire a particularly social function, to mediate joint attention schemes.

Gestural indices which especially illustrate this point are eye gaze and pointing. Whether interpretants are necessarily associated with unidirectional pre-social eye gaze is questionable, although in social uses of index, when bidirectional eye gaze materializes, interpretants are unquestionably present. Once joint attentional indices emerge, their interpretants are social in that the object in question is not merely individuated for another, but joint gaze has the effect of sharing the individuation or focus. The semiosis of eye gaze as an index reveals a transcendence from single, isolated attention to an object, to two minds reciprocally contributing to the effect of the object. This joint interpsychological effect can give rise to several possible effects: to establish whether the object is worthy of focus, to indicate whether a previous experience involving that object is remembered or relevant, et cetera. Similarly, demonstratives as linguistic indices serve at early developmental stages to individuate, and are not legisigns but indices exclusively, as their meaning is sufficiently vague as to be indiscernable without the presence of the object.

Like eye gaze and pointing, “that” and “there” initially indicate any object or place of focus such that the particular origo and the orientation of that origo are immaterial. In this early use, “that” refers equally to near and far objects from any origo’s perspective without distinguishing distance. This use universally precedes the contrastive use of “this/that” in the course of development (West 1986: 115; West 2011b; Tanz 2009: 87, 125). A similar case can be made for “there” — in ontogeny, it is initially used to refer to any place of focus, near or far, from ego’s or others’ perspective prior to its contrastive use in the “here/there” continuum. The individuating function of this early non-contrastive use is paramount to the semiosis of interpretants, since any general meaning is obscured by its pervading vagueness, i.e., rather than taking on the presumed function of a legisign, as words are thought to do, these earliest uses of the distal demonstratives or locatives assume primarily an indexical function, for the reason that they provide no additional

11 Cf. CP 8.368 fn23.
information beyond that which gestural indices impart. This early use still represents Peirce’s indexical (not sub-indexical) category of use; it does not display characteristics of his sub-index, in that the demonstrative lacks the conventional contrastive meaning. The fact that the designative function is heightened in early use of demonstratives and locatives limits their interprets to effects on individuals consequent to perceptual focus. The advent of joint attention schemes (gaze, pointing, and the like) serves as the transition of indexical interpretants to a social plane, having an effect not on two people individually, but as an aggregate. These social interpretants appear to require more than one indexical sign used concurrently, namely, look at object, look at another person, and afterward point to and gaze at object. In fact, this scenario represents the primary and early catalyst for the simultaneous use of early distal demonstratives in their non-contrastive use: “This series of steps — point at object, point at adult, point at object — put together in a chain form the components that eventually form the smooth deictic act of simultaneously pointing at an object while turning to the other for confirmation” (Bates 1976: 61). This graduated concurrent use of joint attentional indices affects both sign user and Other in a qualitatively different way than do previous indexical uses. The characteristics of the interpretant supersed the fulfillment of idiosyncratic desire; they become less subjectivized and more dependent on others’ perceived value of the sign-object relation and its effect.

Semiosis develops further upon mastery of contrastive indexical terms. When the proximal counterparts of demonstratives and locatives (“this”

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12 Researchers in gesture studies (namely McNeill 1992, 2005 and Müller 2007) disagree, insisting that gestures such as pointing have a different function than do demonstratives, even when they are used concurrently. The gesture is thought to further situate the object with respect to the sign, since the functionality of a pointing finger or eye gaze can further disambiguate the object in question, and has the means to select a particularized direction from a host of possibilities. These possibilities include clear “up” and “down” and variations from vertical and horizontal direction. Although gestures may enhance the use of degenerate demonstratives, they appear not to have this disambiguating function for genuine demonstrative uses, which depend on the semiotic properties of Firstness and Thirdness. Their analysis assumes that demonstratives/locatives do not experience use-based changes over the course of development.

13 Both Peirce and Atkin (in his interpretation of Peirce) assume that all uses of demonstratives are contrastive, since “this” and “that” are always cited together as one continuum. Neither appears to recognize the non-contrastive use of “that” without its counterpart to direct focus to objects independent of their distance from origo. As a consequence of this oversight, all demonstrative use is considered to fit into Peirce’s sub-index, whose nature is to serve as a legisign — an index with general meaning. Atkin’s (2005: 171) assumption that demonstratives are necessarily “indexical symbols” is puzzling, since any general character of an index does not change its relation to the object, nor does it modify the sign’s categorization within the division of signs. An index does not become an indexical symbol when it acquires a conventional linguistic meaning; rather, it becomes an indexical legisign from its earlier character as an indexical sinsign.
and “here”) become productive, and the contrast is made with the already-produced distal counterparts, the range of interpretants is expanded to include consequences to a listener-Other (were the listener to share speaker’s perspective or orientation, or were the listener to assume perspectives inconsonant with that of speaker). Interpretants extend beyond shared foci between conversational participants. They encompass effects which have distinct consequences to different origos, depending on origo’s orientation to the object of the index. In the event that the child message-producer faces the listener, such that their perspectives are reversed, the object of the index likewise perceptually, and perhaps functionally, affects each experiencer differently. The effect is physio-perceptual on the one hand, and affective-conceptual on the other — the former consequent to an object in the reverse visual (left for one origo, right for another; proximal for one origo, distal for the other), while the character of the latter entails apprehension of how and why the particular object merits the message-producer’s focus. This conceptual interpretant networks with previous interpretants of similar objects as well as with shared experiences with the message-producer, demonstrating the increased role of social or interpsychological skills (determining the speaker’s intent) inherent in the semiosis of indexical interpretants.

The scope of interpretants of indexical signs may be further amplified when the role of mental representations permits envisioning self in places or orientations beyond the here and now, and/or in places which have, or have not been, experienced by the message-producer. If a sign has a wider range of potential objects, it likewise follows that the corresponding interpretants are expanded with respect to signs which are less indexical and which have a more limited scope of meaning. This greater productivity of interpretants of indexical signs makes tracing their semiosis a fruitful enterprise. Examination of the ontogeny of demonstrative use represents a fertile forum to trace the semiosis of interpretants, because of the use differential between their earliest non-contrastive use to their contrastive, perceptually dependent use, to their use to refer to absent or imagined objects and places from the perspective of different origos. Peirce’s Immediate to his Dynamic and Final interpretants can illustrate the quality of change across the development of different interpretants in demonstrative use.¹⁴ The potential for the semiosis of these indexical interpretants is extensive, especially in light of the vague general meaning of these signs and of their heavy dependence on the spatio-temporal context; thus, their Hermetic drift (the unconscious means to shift

¹⁴ Cf. West (2011a) for a more extended discussion of the semiosis of Immediate, Dynamic, and Final Interpretants, and their relationship with respect to indexical use.
from meaning to meaning) has far greater potential than it might for signs with less indexical force.

The means to objectify to such a degree amplifies the effects of indexical signs, permitting the self to experience Other’s experiences and orientations on an intrapsychological level. Self talking to Self as means of indexical semiosis assumes an amplified role of the interpretant, in that Self affects Self’s previous spatial orientations. Peirce’s recognition of the dynamicity of such intrapsychological exchange gives further credence to the pivotal role of the interpretant in this process: “His thoughts are what he is ‘saying to himself,’ that is, is saying to that other self that is just coming into life in the flow of time” (CP 5.421).\(^{15}\) These effects consist of imagined places, and experiences within those imagined places, which have not materialized in fact; many will never be realized. Whether these intrapsychological interpretants will ever become an actuality in Secondness is dependent on the power of the interpretant to manufacture extended identities of the self, beyond interpsychological experience (between people), to include novel places, roles, orientations, and the like. Interpretants of these uses serve to create new inter- and intrapsychological experiences consisting of imaginations which may never actualize in other than mental signs.

**Conclusion**

This inquiry explores how Peirce’s notion of index as necessarily co-existent with its object is but a point of departure, not meant to exclude referents which lack such spatio-temporal contiguity. It defends the position that genuine indices whose interpretants imbue them with Firstness and Thirdness, and whose objects are disconnected in space or time from the sign’s use, are no less indexical than are degenerate indices whose objects are in existential relationship with them. But for the efficacy of this argument, Peirce’s construct of the genuine index would be unnecessary and invalid.

Semiotic analysis of indexical development provides a means to explore the complexities of indexical use at a more micro level. It provides empirical evidence regarding increasing degrees of complexity of indexical use, be it gestural or linguistic, with cognitive advances. Uses of index advance from proto-index (pre-intentional), to degenerate index (pre-social), to genuine indexical use with the advent of social role-taking, to a constructive internalized origo-dynamic use. The semiosis of the object and the interpretant of the

\(^{15}\) The bridge to this self-to-self communication appears to be representational play, e.g., employing dolls or stuffed animals to express and resolve thoughts which the child him- or herself may have (West 2010b: 15).
indexical sign accounts for increased proclivity to employ index genuinely, as well as degenerately. Referring to more dynamic objects, such as mental images of absent objects, places, and experiences, and amplifying the interpretant to incorporate social meaning, together contribute to the onset of more genuine indexical uses.

The emergence and integration of Firstness and Thirdness into indexical sign-object relations (which defines genuine use) is motivated by the infusion of social meaning into the interpretant. Gestural indices to absent objects (perpetuated by joint attentional schemas), and contrastive uses of demonstratives, represent the advent of genuine indices, in that their interpretants have become social. It follows, then, that the joint attentional component of indexical signs and their interpretants is the linchpin for qualification as a genuine index, and that social interpretants associated with absent objects are indispensable to indexical semiosis.
<table>
<thead>
<tr>
<th>Ages</th>
<th>0;0–0;8</th>
<th>0;8–1;0</th>
<th>1;0–1;2</th>
<th>1;2–1;10</th>
<th>1;10–4;0</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Proto Index</strong></td>
<td>Eye gaze follows another’s alteration in gaze orientation.(^1)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Pre-Social Index</strong></td>
<td>Gaze coordinated with reach and following trajectory of objects.(^2) Focus on object for self alone.(^3)</td>
<td>Pointing to objects without looking toward another, while moving them toward other.(^4)</td>
<td>Search for hidden objects upon request.(^5)</td>
<td>Recognition of absent objects, but present anchor for absent reference.(^6)</td>
<td>Pointing and index to absent objects. Eidetic memory, dreams of objects and events.(^7)</td>
</tr>
<tr>
<td><strong>Social Unidirectional Index</strong></td>
<td>Eye gaze coordinates with extending the arm and hand in giving exchanges.</td>
<td>Unidirectional gaze toward another. Gaze towards speaker more with absent than present reference.(^8)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Joint Social Index</strong></td>
<td></td>
<td>Error: For ages in Joint Social Index, table entries are missing.</td>
<td>Eye gaze alone to secure joint attention(^9) Reference to familiar absent people(^10) Joint gaze with another for absent object reference(^11)</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Indexical Synchrony</strong></td>
<td></td>
<td></td>
<td>Can hold absent objects in memory for over 2 minutes(^12)</td>
<td>Symbolization: Express relations between people, objects, events.(^13)</td>
<td></td>
</tr>
</tbody>
</table>
Notes for Appendix

1 Scaife and Bruner 1975: 265.
2 Piaget and Inhelder 1966.
5 Piaget and Inhelder 1966.
6 Baldwin and Saylor 2005.
7 Bühler 1934: 27.
8 Baldwin and Saylor 2005.
10 Saylor 2004.
12 Ganea and Saylor 2007.

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