Introduction

This article is an application of my proposed ‘semiographemics’ to the archaic Chinese script. I have chosen to draw on the general ‘semiotic’ of Charles S. Peirce and have coined the term ‘semiographemics’ by appropriating William O. Hendrick’s ‘semiolinguistics’ (1973) in order to distinguish, on the one hand, my project from linguistics and, on the other, graphemics from the linguistically controlled orthography (Augst 1986). Only the graphemic aspect of writing will be dealt with here while, I am aware, a global semiotics will have to consider the productive and receptive modalities of the written sign. Both modalities are culture-specific, for signs are deeply embedded in the society in which they are produced and received. In the pages that follow, the Peircean trichotomy of signs will be used to recode and decode the archaic Chinese script, which refers to the writing system before it became standardized in the relatively stable present form in the second century B.C.

Determining the graphemic levels of Chinese script

The first step in analyzing a script is to determine its levels. While there is no logical necessity that a script is derived from speech, it is oftentimes described by the linguistic level to which it corresponds. Thus a script can be derived on the phonemic level, the syllabic level, the morphemic level, or the lexical level, the first two being cenemic (semantically empty), and the second two pleremic (semantically full) (Haas 1983: 16).

According to Nina Catach (1986), the uniqueness of writing as mixed plurisystem lies in its extreme plasticity. If one submits writing to detailed analysis and comes with the categories of word-signs, morpheme-signs, and phoneme-signs, one would find word-signs displaying a certain abstract or concrete globality, while the other two categories are more similar and more in accordance with the linear structure of orality. The basis of Catach’s argument is apparently the Hjelmslevian (1959) distinction between cenemics and pleremics cited above. But one would find that in almost all known writing systems word-signs are semantically full. And the very linguistic concept of ‘word’, together with its lower constituent levels of morpheme and phoneme, poses severe inadequacy in dealing with graphemics.

Catach observes that Chinese writing fully displays ‘the whole range of semiological possibilities of writing’ because this essentially ‘pleremic system endowed with cenemic complementary procedures’ (1986:5) epitomizes writing’s paradoxical nature of autonomy from and complementarily with speech. Since the initial procedure of script analysis is to determine the levels of script, I
shall attempt to show, using Chinese as the example, how a graphemic system consisting of various levels can be articulated.

I take graphemes to be the minimal components, whose function in Chinese is performed by strokes. The strokes in themselves are cenemic but oftentimes made motivated, as in the production of special types of writing like the dragon script and bird-and-insect script. This phenomenon of retroactive semanticization or iconization is not uncommon in literary and art history. Similar examples in the West can be found in the decorated calligraphy in medieval illuminations and graphic and concrete poetry throughout the ages. Thus it would be hard to formulate rules of graphemic combination and permutation unless one considers, from a different perspective, the semiotic functions of graphemes’ spatial orientation as well as the writer’s gestures in performance.

From this lowest graphemic level are derived graphemic compounds, or morphographemes, known as radicals; and from the latter are derived the still higher levels of graphs, commonly known as characters (文 or 字), whose combinations are graphic string (字), moving toward a unique ‘graphosyntax’. But it is important to note that the relation between morphographemes and graphs is not invariably linearly uni-directional, as in speech, but reciprocal. Just as a grapheme can be elevated to the higher morphographemic and sometimes graphic levels, a graph can be ‘degenerated’, so to speak, into morphographeme. It is not surprising that degradation sometimes even involves the desyntaxizing condensation of a chain of action in one graphic unit.

The structure is shown in Figure 1 where a simplified scheme of speech is juxtaposed as reference (i.e., to show the two systems’ discrepancy).

**Speech:**

<table>
<thead>
<tr>
<th>Phonoeme</th>
<th>morphophoneme</th>
<th>word</th>
<th>phonosyntax</th>
</tr>
</thead>
<tbody>
<tr>
<td>cenemic</td>
<td>(semi-pleremic)</td>
<td>pleremic</td>
<td></td>
</tr>
</tbody>
</table>

**Writing:**

<table>
<thead>
<tr>
<th>Grapheme</th>
<th>morphographeme</th>
<th>graph</th>
<th>graphosyntax</th>
</tr>
</thead>
<tbody>
<tr>
<td>stroke</td>
<td>graphemic compound</td>
<td>character</td>
<td>phrase</td>
</tr>
<tr>
<td>cenemic</td>
<td>radical</td>
<td>phonetic</td>
<td>wén, zì</td>
</tr>
<tr>
<td>pleremic</td>
<td>(pleremic)</td>
<td>(pleremic)</td>
<td></td>
</tr>
</tbody>
</table>

Figure 1.
The segmentalization nature of speech gives rise to syllables, which are ‘articulatory and acoustic integers’ (Studdert-Kennedy 1975: 114) noted for their sequential continuity that covers all the phonemic, morphophonemic, lexical, and syntactical levels. But syllabicity does not apply to writing before it is tempered with speech. Hence the celebrated controversy of monosyllabicity/polysyllabicity of Chinese speech does not make much sense in the discussion of Chinese writing. Instead of phonological encoding, the whole of a scriptorial text is graphemically encoded. The word ‘phonetic’ has been used in the table only to accommodate a Western convention. Tzeng et al. (1977) observe that in Chinese writing phonemic mediation is not necessary to obtain access to meaning; often the script maps directly onto meaning.

The reciprocal relation between morphographemic and graphic levels is indicated in Figure 1 by a double-headed arrow, in contrast to the unidirectional arrow used in speech. A major difference between speech and writing is that, unlike phonemes, graphemes per se are not pronounceable. As to semantics, in speech only the lexical level is pleremic, but in Chinese writing all levels are pleremic, including the extreme case where a graphic sign (‘word’-sign) contains only one grapheme. Finally, the syntactic uniqueness of writing, a topic which is not my concern here but has been widely discussed, has to do with its scarcity in grammatical morphemes, such as tense and aspect markers, articles or demonstratives, number, genitive or case markers, classifiers, co-verbs, clause linkers, and complementizers or subordination markers. The ‘telegraphic’ style (Li and Thompson 1982) should be understood from the perspective of the script’s graphemic and graphic structure.

A Peircean semiographemics of ancient Chinese script

As a semiotic system, writing carries with it a pragmatic dimension: It is the intersubjectivity among users that ensures the realization of the written sign. This should not, however, be construed to mean that the structure and meaning of graphic signs are determined by factors extrinsic to the system itself. The system is self-regulating, observing, as it were, its own logic. For instance, it is the intrinsic relations among signs that produce meaning. This system-specificity manifests itself in the principles that govern the distribution of elements on various levels and their integration in the global structure. They apply to the lowest graphemic level as well as to the higher morphographemic and graphic levels.

One such structural principle is differentiation. Graphemic elements are produced in order to distinguish a new character from an existing one. Take, for example, [wéi] (enclosure), [rì] (sun), [niao] (bird), and [wu] (raven). According to traditional interpretation, consensus enabled the scribe to draw a
circle to stand for the sun. Since the same sign had already been used to signify ‘closure’, then a diacritical dot 〈‧〉, or short line 〈-〉 was added to the circle for distinction. Likewise, the feature that distinguishes 3 and 4 lies in the short horizontal line on the bird’s head. These examples bear witness to the script’s system-specificity and conventionality. Individually, a grapheme may be semantically void, but can be motivated when entered into relation with the other elements of a graphic sign. This kind of makeshift device is more conventionalized than realistic.

Although similar principles govern the production and cognition of various forms of script, caution must be made here against hasty confusion of the ancient pictographic form and its later stylized form after, say, the second century B.C. While both forms observe certain shared principles of temporal-spatial orientation in graphemic composition, it has been argued that each is under its own specific constraints. For instance, the preeminency principle governs the ancient scribe’s spatial-temporal arrangement of graphemic elements in the primitive form. This gives way to the stroke-ordering principle in the production of its modern counterpart (Yau 1978).

It is well known that Chinese lexicographers in the second century classified the script into six categories. They are concerned with (1) the relation between form (including morphographeme and morphophone) and meaning, and (2) the relation between one graph and another. These six categories can be regrouped into four according to the structure and function of the graphic sign: (1) pictograph, (2) ideograph, (3) phonograph, and (4) supraphograph. Detailed analyses would show that the four categories do not exist on the same functional level and therefore they fail to form a typology of writing. I shall try to reconstruct their relationship in terms of Peirce’s trichotomy of signs: icon, index, and symbol (CP 2; Peirce and Welby 1977: 33).

The iconic pictograph

The pictograph is a simple character (wén), which is intended and agreed upon to resemble metonymically the shape of an object. As such it is semantically full, but can also lend itself as a morphographemic and/or semantic unit to form graphic signs of a higher order. Following the Peircean trichotomy, I shall call it the iconic sign. Examples are sun, moon, human, bull, sheep, horse, and the afore-mentioned, bird.

We know a lot of primitive graphs are iconic, intended to represent the objects as they are perceived (CP 2; Wl; Wallis 1973; Landsberg 1980, Sampson 1985). This relationship of resemblance between the sign and its object is sometimes
described as motivated, to be distinguished from the arbitrary one (Haas 1983, Sampson 1985). It would be naïve, however, to assert that the motivated relationship amounts to one-to-one copying, and it is debatable that the external object can be a determinant in itself. Peirce already introduces the concept of interpretant, which serves to mediate the sign and its object. The interpretant attributes an ‘imputed quality’ (semantics) to the object which is realized in the sign via the latter’s ‘material quality’ (W 3.66). Furthermore, the concept of interpretant suggests that the object is never a real object, but always perceived, or in phenomenological parlance, ‘intentional’ (Ransdell 1979). Ransdell (1980) argues that the sign process would rule out the possibility of a real object. Thus he defines the icon and the iconic sign in accordance with Peirce’s mentalist position as follows: ‘An icon is any possible qualitative content of consciousness - what Peirce calls a Firstness - considered in respect to its possible function in cognition as the form (that is, quality or character) of an actual or possible object. An iconic sign (‘hypoicon’) is anything whatever which does or can function as a sign in virtue of its embodiment of some icon proper’ (Ransdell 1979: 55).

As said above, the pictograph is not a resemblance to its original in every respect; rather, the representation is abstracted and stylized through conventionalization. Like all graphic signs, it can be thus considered as symbolic in the sense that it requires shared knowledge among people who accept the sign to be used as such. Paradoxically, this conventionality on the one hand ensures the pictograph’s representational function, but on the other undermines it. The undermining function is especially true when the pictograph lends itself as morphographeme to form a more complex sign, such as an ideograph, or is loaned to represent (visually) a morphophoneme, morpheme, or lexia which does not have a graphemic and graphic sign of its own. In both cases, the iconic sign either transforms into an indexical sign or is appropriated as a symbolic sign.

The iconic and indexical ideograph

As its name suggests, the ideograph or ideogram signifies an idea, a concept, or a quality that usually does not have a referent or an existence in itself. There are two types of ideograph: the simple one and the compound one, depending on the level of its component, i.e., whether it is a morphographeme or a graph. The simple ideograph has two subtypes. Subtype 1 consists of pictographs appropriated, not to represent the objects to which they refer, but to signify a quality inherent in the objects. For instance, the graph for ‘large’ is an appropriation of the pictographic , standing for ‘human’. Subtype 2, like the pictograph, is also composed by cenemic graphemes; but once they are joined to form a graph, a certain kind of
spatial relationship is suggested. Examples are (up) and (down). In such graphs, the relationship among the constituent graphemes indicates position, direction, and quality, rather than a real or imagined object. Therefore, they can be regarded as a type of indexical sign. Some graphs of this subtype are borrowed from pictographs with modifications. Take , for example. The modern form, which is a grammatical unit serving a syntactic function and meaning ‘also’ or ‘similar’, is the stylization of the archaic form , meaning ‘armpits’. It derived from the graph for ‘man’. Two diacritical dots were then added to the human icon’s stretched arms. The new graph is still iconic, but it has been transformed by the added graphemes that serve an indexical function. Later on, because of the graph’s phoneticization and grammaticalization, both iconic and indexical functions were lost, and a new homophonous graph has been coined to stand for ‘armpits’. Similar cases are the modifications of the iconic ‘tree’ into (tree top) and (root). Both involve an iconic sign of tree, but the additional grapheme, the short horizontal line on top or below it, introduces a new spatial relation.

The indexization of iconic signs can be also seen in the more abstract compound ideograph. The graph for ‘east’ consists of two iconic signs, respectively for ‘sun’ and ‘tree’. If we put the ‘sun’ on top of the ‘tree’, it becomes , meaning ‘sunrise’; if the ‘sun’ under the ‘tree’, then , meaning ‘dusk’. A compound ideograph takes at least two individual iconic or indexical signs to form, both of which are pleremic. But the new graph may carry a phonological value completely alien to that of either morphographeme. The ideograph is a compound of pictographs and , which have been now reduced to the lower status of morphographeme in the new graph. While the semantic values are retained, the phonological values are completely lost.

Two subtypes of compound ideograph can be identified. Subtype 1 is the reduplication of a single pictograph to form an ideograph. When the pictograph is reduplicated, and thus degraded from the status of graph to morphographeme, it becomes ; when triplicated, . What differentiates the ‘tree’ and the ‘grove’, and the ‘forest’ is not only the increase in morphographemic quantity, but also the indexical spatial relation. Such examples confirm Peirce’s description of the index: ‘It does ... involve a sort of Icon, although an Icon of a peculiar kind; and it is not the mere resemblance of its Object, ... but it is the actual modification of it by the Object’ (CP 2.143). Moreover, this specific iconic sign serves as a good example to illustrate Peirce’s first trichotomy of sign, according to which, a sign in itself can be a mere quality (qualisign), an actual existent (sinsign), or a law (legisign) (CP 2; Peirce and Welby 1977: 35). All three graphs contain the quality of ‘treeness’; as sinsign each involves a qualisign or several qualisigns; and the reduplication in and establishes their being legisigns. Notice there is no syncategorematic element
among the morphographemes, which is replaced by spatial orientation; the iconic sign repeats itself and situates the replicas in a given space to generate the concept it denotes. In the compound ideograph, the sign may have more than one object; it represents a set of objects and the explanation of the sign itself and the relationship among the components \((CP\ 2.155)\). This is especially true of the subtype 2 of compound ideograph.

Subtype 2 of compound ideograph denotes event rather than quality. For example, the ideograph \((\text{cooking dog meat})\) consists of three pictographic morphographemes \((\text{meat}), (\text{dog}), \text{and} (\text{fire})\). Fenollosa (1920) would call the graph of ‘cooking dog meat’ an ideal ideograph, a ‘verbal idea of action’ ((Fenollosa 1920: 346) because it represents the succession of events, although it is hardly ‘poetic’. The character shows the tendency towards a special type of graphosyntax. Instead of using phonetic signs to suggest temporality, the ideograph suggests the succession of events through spatial arrangement of its pictorial morphographemes. Such a graphosyntax is not displayed on the horizontal axis, nor does the method of combination constitute a linear syntagmata. It seems that the selection of pictographic morphographemes follows the Jakobsonian principle of equivalence (Jakobson 1960), for all the three iconic signs are metaphorical. A detailed analysis would show that there is a metonymic relation between the ‘meat’ and the ‘dog’ to establish their contiguity. Another iconic ‘fire’ is then introduced to consume them. The stroke-ordering principle complies with the zero-subject syntax of \(S=OV\), where the accusative ‘meat’ is qualified by ‘dog’ through metonymic displacement. This culinary process, one that would appeal to Lévi-Strauss, is adequately expressed in a single graphic sign. The same movement of signs will continue when characters are joined together on the syntagmata, but it is never restricted to linearity.

To conclude my discussion of the ideograph, I shall briefly comment on the Saussurian-Jakobsonian conceptualization of sign structure. While the iconic sign observes the metaphorical principle of equivalence and selection in the relation between the representamen and object, the indexical sign observes the metonymical principle of combination and contiguity. Grammatical indices in English (e.g., demonstratives, deictics) have the potential of forming syntax, but Chinese graphemic and graphic indices show how metaphors (one type of icon according to Peirce) in their paradigmatic relations join to produce a third metaphor, which either belongs to the same paradigm or forms another more inclusive paradigm on a higher (i.e., graphemic\rightarrow graphic, graphic\rightarrow graphosyntactic) level. Therefore, the procedure from pictograph to ideograph is not the distribution of paradigmatic elements on the syntagmata, but the integration of one paradigm with another of a
The iconic and indexical phonograph

The third category of graphic sign is the compound phonograph which approximates to the traditional xingsheng characters. The method refers to the use of one graph as a morphographeme of another new graph to indicate the sound of the latter. When thus used, it is known in English as a phonetic. As to the other morphographeme that signifies meaning, it is conveniently called the signific. Most scholars agree that this type of character was a later development. It shows the trespassing of speech on writing, or the marriage of the two.

The phonograph can be also divided into a few subtypes according to different degrees of representationality and conventionality. The first type is iconic, in which one morphographeme is visual and the other auditory. For example, the primitive pictograph for the bird is , which stands for the general class of bird. In order to differentiate among kinds of birds, such as the chicken, the duck, and the goose, an additional morphographeme is needed. Therefore, graphic signs whose pronunciations resemble the sounds uttered by these birds are joined with the pictograph. The newly coined graphs thus serve two distinct mimetic functions: the pictographic signific identifies the species of bird while the morphophone distinguishes one feature from another. In both components, the relation between the representamen and its object is supposedly representational. Still, the representational function of the phonetic sign has severe limits even though we provisionally accept the possibility of verbal mimesis. The world in which we live, not to mention the world beyond, is inhabited by an infinite number of silent objects. How can we tell the pine from the cypress by sound, as we do the chicken from the duck and the goose? But characters had to be produced. Consequently, arbitrary signs were borrowed from existing the lexicon and added to the tree icon. Thus we have the graph [song] to stand for the pine, and [bó] for the cypress. These examples show how the iconic sign is usurped by the arbitrary symbolic sign.

At this time, I would like to discuss an example given by Sergei Eisenstein (1949), namely, ‘the picture of an ear near the drawing of a door=to listen’ (1949: 30). Eisenstein’s reading is indeed poetic. But etymology tells us the character for ‘to listen’ [wén] is a phonograph, rather than an ideograph, as Eisenstein wrongly believes it to be. The graph is made up by two morphographemes: [ér], meaning ‘ear’ and [mén], meaning ‘door’. But the iconic sign of door has ceased to function pictorially, but appropriated for its sound. What signifies in this graph is the iconic ear, not the defunct door. The same critique can be launched at Fenollosa.
and strangely at traditional lexicographers. Let Fenollosa pass, given his limited knowledge of the script. Philologists of the Han Dynasty said the Yangtse River carried a [gong] phonetic because its water sounded like [gong], and the Yellow River carried a [ke] phonetic because its water sounded like [ke]. If it had been the case, people who coined the graphs for the two rivers must have travelled hundreds of miles between the rivers to record their sounds. The crux of the matter is that in the language system, differentiation does not lie in the objects, but in the phonetic signifiers.

When originally pleremic iconic signs like , , and have been ‘desemantised’ (Wallis 1973: 488), i.e., degraded from the graphic level to the morphographemic level, they serve as cenemic morphophonemes, and iconic signs are changed into symbolic signs. Peirce is fully aware of this phenomenon of conventionalization. He observes, ‘In the earliest form of speech, there probably was a large element of mimicry. But in all languages known, such representations have been replaced by conventional auditory signs’ (CP 2.158). From subtype 1 of iconic phonograph to subtype 2 of semi-iconic phonograph, we notice the script’s increasing conventionalization. This transforms all the iconic and indexical signs into symbolic signs which signify ‘only by virtue of [their] being understood to have that signification’ (CP 2.170).

The symbolic supragraph

The tendency towards arbitrary symbolization can be best seen in the last category of graphic unit, which, lacking a better term, is provisionally called supragraph. The word is used in the sense that another graph has been added to an existing graph or a graph is loaned from an anterior graph. This type of graph covers the last two categories in traditional classification, i.e., zhuānzhù (mutually defining) and jiájiè (borrowing). The supragraph is governed by the principle of appropriation, which allows individual graphs to bear secondary meanings, either by conventional extension of ideas, or as direct loans. Sometimes, the ‘signific’ of a graph is loaned to coin new graphs; other times, the ‘phonetic’ is loaned. There are also occasions when the whole graph is loaned by virtue of homophonicity. Under such circumstances, it would be next to impossible to trace a word’s etymology. This multiplication of characters and usages is accelerated by grapho- and phono-syntaxization. Grammatically, most deictics, anaphoras, prepositions, postpositions, and conjunctions that contribute to characters’ distribution on the axis of syntax fall into this last category. A notable and notorious example is the expression [rán-er]. It would tax the labor and erudition of only a lexicographer to
identify the two graphs’ semantic etymology and to prove to the layman that originally they represented ‘cooking dog meat’ and ‘a man’s beard’.

**Conclusion**

From the perspective of Peircean semiotic, the four categories of ancient Chinese script can be subsumed by the trichotomy of signs. And the process from the iconic, through the indexical, to the symbolic sign corresponds to the historical development of Chinese script. While all the four categories have come to be regarded as signs through the empirical and pragmatic operations of the interpretant, the relationships among the sign, its object, and interpretant are different. The sign’s symbolization finally leads to the Peircean propositional logic or a ‘grammar’ that deals with meaning and truth.

**Notes**

1. It is important to note that an indexical sign is defined by the affective relation between the sign and its object, such as the way in which moist air affects the barometer as an index of rain and the wind affects the weathercock to make the latter an index of the direction of wind (CP 2.161). Following medieval grammar and logic, Peirce cites a series of indices, such as indexical directions, quantifiers, adverbs of time and place, prepositions, etc. Unlike icons, all these indices represent abstract concepts. Among these are prepositions showing temporal, spatial relations. While these cannot be conceivably iconicized in an alphabetical language, in Chinese these are mostly based on icons as constituents.

   Admittedly, in the ideographic examples I give there is apparently no affective relation between the sign and its object. Graphemic components exist on the same level, but their relation is established as they are switched to another semantic level by the syncategorematic function of certain graphemic elements which can be termed indexical. As Peirce puts it, ‘[I]t would be difficult if not impossible, to instance an absolutely pure index, or to find any sign absolutely devoid of the indexical quality’ (CP 2.172). One can only safely talk about ‘real’ written indexical signs with affective and causative function in the extra-semantic kinetic level of sign realization.

2. Linguistic iconicity has always remained controversial and the theoretical implications of Peircean semiotic on linguistics are just beginning to be noticed (Ransdell 1980). Appropriating Peirce, Pharies (1985) discusses lexical iconicity in terms of reduplication and onomatopoeia; Dressler et al. (1987) extends iconicity to the morphemic level. For an incisive critique of the naïvety of equating onomatopoeia to iconic signs, see Hookway (1988).
References


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