The Argument for a Semiotic Approach to Shaped Writing: the Case of Italian Futurist Typography

John J. White

Using Futurist poetic experiments as its demonstration object, this paper explores what advantages a semiotic approach has in the investigation of shaped writing. The examples considered are seen to belong to the class of iconic signs, and the concept of iconicity is shown to offer both a more systematic and differentiating method of analysing their constituent parts than the traditional mimetic model did. Consideration is given to the way in which Gestalt psychology has modified the definition of iconicity to take account of codes of recognition and graphic conventions. Examples of such codes and conventions are explored and attention is paid to the signaling of new codes within an innovative work. Finally, the relationship between the signification of dynamism in Futurist painting and poetry is compared in order to show how a semiotic model is able to distinguish between iconic, conventionalized, and codified elements; particular attention is paid here to the accommodation of iconic effects to the medium of print.

In their foreword to *Concerning Concrete Poetry,* Bob Cobbing and Peter Mayer suggest that "perhaps this is a field in which to apply C. S. Peirce's trichotomous theory of signs," noting that a "start in this direction has been made by Max Bense, Paul de Vree, and others."[1] In fact, among the attempts made so far to relate typography to semiotics three main categories of approach can be discerned.

First, there are those works which, either in their terminology or general assumptions, appear to concede the status of the printed word as "sign" and yet do so without subsequently adopting any rigorously semiotic approach to their examples. Thus, the first part of Carlo Belloli's excellent historical study, "La componente visuale-tipografica nella poesia d'avanguardia,"[2] makes frequent and pertinent reference to the "semiotic problems" of interpreting Futurist poetry and to "semiotico-typographical correspondences," but (hardly surprisingly, considering how early it was written) .

Visible Language, X 1 (Winter 1976), 53-86.

Author's address: Westfield College, Kidderpore Avenue, London NW3 7ST, England.

refrains from drawing any precise methodological conclusions for its technique of analysis from the underlying premise that typography is a sign-system. (With the current growth in the popularity of semiotics, works gesturing to the method by using terms like "sign," "denotatum," or "semiosis" are beginning to proliferate—but without necessarily engaging in the discipline of semiotic analysis.)

A second major group is formed by systematic taxonomic studies of the materiality and organization of the written signs themselves. This includes Mayer's classification of the ways in which different kinds of word-signs "form a spectrum from 'normal' writing through various stages to pictures,"[3] Felix Andreas Baumann's categories of printed word in *Text Buchstabe Bild*,[4] and, most recently, Aaron Marcus' significant "Introduction to the Visual Syntax of Concrete Poetry" which, as its author justifiably claims, "creates a strong basis for further analysis of the semantic and pragmatic dimensions" of the genre.[5] One value of both micro- and macro-aesthetic explorations of this kind is that they help to integrate a form of structural analysis—which could, in many cases, have been carried out independently of sign-theory—into a semiotic framework.

The third and final category of approaches linking typography with semiotics is that of studies which attempt a more general consideration of the various aspects of sign-denotatum and sign-reader interaction, as well as exploring the nature of the sign-vehicle itself. Probably the most important discoveries here have been made by Max Bense and his Stuttgart school; and this work has in turn influenced a number of practising poets, including Paul de Vree and the Noigandres poets. In particular, the advances towards a synthesis of information theory, generative aesthetics, and semiotics (most conveniently summarized in Bense's *Einführung in die informationstheoretische Ästhetik*[6]) have led to some degree of quantification in this field.

Yet within the particular context of experimental typography, the actual case for any such semiotic approach has not been demonstrated in detail; nor have many specific features and concerns of such a conceivable visual semiotic been outlined. Does semiotics simply constitute an *alternative* method of approach or

does it offer a more *differentiated* conceptual framework? Are the advantages it brings at a macroscopic or at a detailed level of application? To what extent does the semiotic model simply supply a tool of analysis already used in other fields and to what extent will it have to be modified to suit the typographical context? And to which semiotic model (or combination of models) can the investigator most profitably turn? (For semiotics is nowadays by no means always derivative of Charles Sanders Peirce's thinking in this field; nor can Peirce's concepts be taken over without considering the many significant developments since his work appeared.) These are some of the questions which the present paper[7] seeks to focus on, using certain features of Italian Futurist typography as its demonstration object. Apart from the generally acknowledged historical importance of many of the movement's layouts, these particular experiments have been chosen as being of methodological interest in two key respects: (1) because the self-styled Futurist "Typographical Revolution" was very much concerned with the nature of sign-object relationships in language and hence led to the creation of many works involving a complex variety of semantic dimensions, and (2) because the experiments were carried out in an area of apparent typographical mimesis, thus encouraging a majority of critics to assume that the representational aim of such works was self-evident and in little need of close analysis. In fact, as semiotics has often shown, it is in areas where our responses are largely automatic that some of the most complex effects take place.

Futurist "Auto-illustrations" and the Limitations of Some Non-Semiotic Reactions to Them

"Words-in-freedom" ("parole in libertà")—as the Italian Futurists called their new kind of poetry—would, so Filippo Tommaso Marinetti prophesied, "in a continuous effort to express things with the greatest force and profundity, naturally transform themselves into auto-illustrations. . . . As soon as this greater expression is reached, [they] return to their normal flow."[8] At vital poetic junctures, in other words, discursive sequences of poetry would culminate in a pictogram or some equally expressive visual effect. Soon, Futurist poetry abounded with such "auto-illustrations."[9]

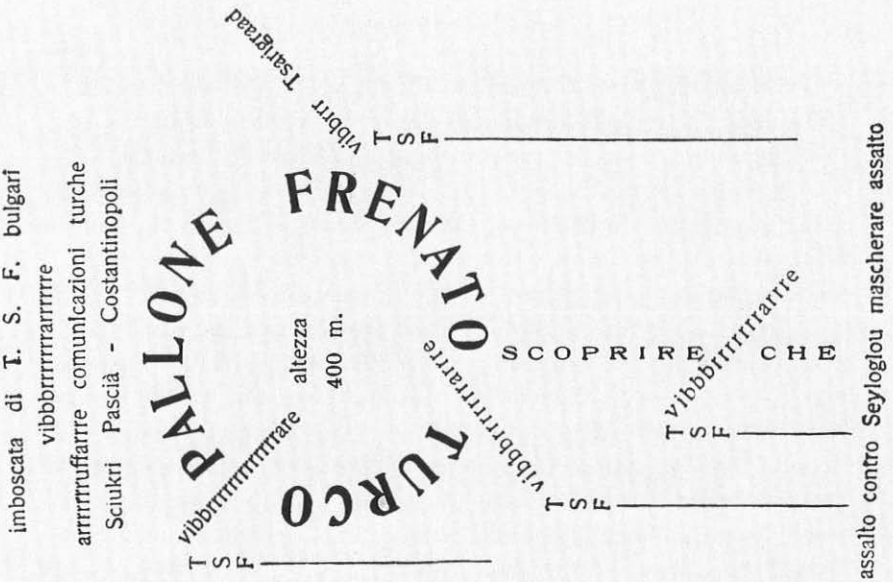


Figure 1. F. T. Marinetti. Extract from *Zang tumb tuuum,* 1914.

Figure 2. Francesco Cangiullo. First page of "Fumatori.ll.," 1914.

Figure 3. M. Bétuda. "Looping the Loop. Parole in Libertà.," 1914.

One of the earliest, setting the Italian word for "balloon" in the actual shape of a balloon, together with a number of other concomitant visual effects,[10] can be found in Marinetti's volume of war-poetry, *Zang tumb tuuum* (Fig. 1). Other equivalents include: the arrangement of the words for "bi-plane," "tri-plane," and "poly-plane" on two, three, and multiple lines,[11] the printing of the word "oscillamenti" in an undulating line[12] or the use of similar wavy lines in a poem about the sea,[13] the reproducing of the word for "baggage" a number of times in a configuration[14] suggesting the actual shape of a pile of luggage (Fig. 2), or having a line of poetry literally "looping the loop" in a sequence[15] describing aerobatic maneuvers (Fig. 3).

qu'il allait dire : « Celui-là est heureux, il a le temps rêvé pour se livrer à ses orgies de couleurs ! »

Cézanne se plaisait à ces amusements de rapin. Ainsi, à l'époque lointaine où l'on avait mis à la mode le cri « Ohé Lambert ! » il aperçoit, un jour de promenade aux environs de Paris, le sympathique peintre de chats du même nom, qu'il connaissait un peu. Voulant « faire une petite blague », il crie : « Ohé Lambert ! » en mettant, ou plutôt en croyant mettre une sourdine à sa voix. L'autre se retourne, et, naturellement, vient vers lui. Alors Cézanne, tout saisi, et pensant qu'il aurait une lutte à soutenir, ramassa une pierre, s'apprêtant à défendre chèrement sa vie. Mais Lambert s'avançait la main tendue, en souriant, heureux d'avoir rencontré quelqu'un de connaissance. « Excusez les sons gutturaux qui sortent de ma gorge ! » lui dit Cézanne. Lambert, qui ne comprenait rien à ces excuses, lui donna une bonne poignée de main, on se promena ensemble, mais Cézanne resta sur ses gardes : « Quand on est faible dans la vie ...! »

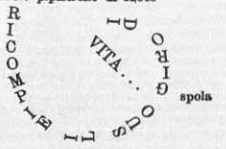
VOLLARD.

BÉTUDA.

LOOPING THE LOOP

PAROLE IN LIBERTÀ

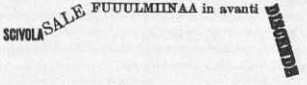
Alzata di mano sciamento rapido
fremito lungo ansare del motore vortice dell'elica
specchio di raggi turbinosi nel sole
azzurro di viola ingoia l'ali e il rumore
l'areoplano è nel cielo alto immobile
quasi piccolo punto sull'I dell'antenna
s'impenna poi
un urlo della folla brividire di freddo di
voluttà per le reni gli occhi immobili pieni
d'un baluginore di morte di sangue diaccio
un morirr di sogno
un pezzo di MACIGNO il sospiro sospeso come una spada sul cuore un abisso
di silenzio freddo e vivo come serpe rapido
e pur lento come un supplizio l'acrobatico esercizio di morte si esplica nel suo giro di ritorno
e il funambolo pipistrello di fuoco



che riattacca nel telaio del cielo il suo aereo filo
di audacia e di sfida
un ansito nella folla un levarsi di grida
un gioire di spasimo soffocato un
vibrare di nervi tesi come corda di minugia spezzati d'un sol colpo e sibillanti al vento avvitichiati
e
la magica macchina di

FORZA AUDACIA PENSIERO

segna
un suo sentiero ideale
nel campo dell'infinito
come splendida idea di poeta
verso una meta intangibile



sogna le parole di una nuova vitale fulgenza
nel gran libro del cielo è fermo a un tratto

giro di costole allo scheletro della morte in un precipitare di audacia ha più voce il motore in un lento volo ecco alfine che l'uomo

CANGIULLO.

FUMATORI.

II.

PAROLE IN LIBERTA'

One reaction to such "auto-illustrations" has been to assume that they aimed at reducing the substantial differences between the printed word and reality. The Futurists had, after all, themselves declared that they were thereby throwing "a marvellous bridge between the word and the real object." [16] "Marinetti, with his words-in-freedom," a contemporary wrote, "relies on the visible image . . . in the form of words or phrases arranged typographically in such a way as to suggest with an ideogram the vision of the thing spoken of. . . ." There followed a solemn-sounding warning that "if this method were accepted and pushed to its rigorous final conclusion, the result would be that the finest of still-lifes would be a furnished room; the best concert would be a mixture of noises of a crowded city; the best poetry would be the spectacle of a battle with its sound cinema. . . . These are absurd prospects, but they are direct extensions of premises and experiments which already exist." [17] The (admittedly, satirically exaggerated) assumption that such poetry should *eo ipso* be construed as an experiment inevitably to be "pushed to its rigorous final conclusion"—presumably proceeding from simple visual effects via more detailed picture-poems to the closest approximation to mimesis that the medium will permit—is as misconceived as the once popular view of mimesis in painting as straining towards *trompe l'oeil,* even borrowing materials from the real world in the creation of a deceptive duplicate reality. Yet the assumption that such typography is essentially pro-mimetic is shared not only by the proponents of this back-to-life interpretation, but also by the upholders of a second (probably most widespread) view of what free-word poetry entails; i.e., an attempt at "pictorial" mimesis, *as seen in the other visual arts.*

Again the idea is prefigured in Futurist theory, for the full sentence, partly quoted above, reads: "We shall set in motion words-in-freedom, destroying the boundaries of literature and marching towards painting, the art of noise-making and throwing a marvelous bridge between the word and the real object." The point has been frequently echoed in the secondary literature on the subject. Fausto Curi refers to the "pictorial quality" of the movement's typography,[18] and Pär Bergman to the "imitative element" it contains.[19] Michel Seuphor uses the phrase "poème plastique"

to describe such experiments,[20] while Rosa Trillo Clough mentions Futurism's "utilization of the pictorial possibilities of typography."[21] And Luciano De Maria, the editor of Marinetti's collected works, has argued that the "extensive introduction of designative elements" into such poetry has shifted it substantially "in the direction of painting."[22]

Such descriptions and reactions do, in a generalized way, make acceptable sense. The Italian Futurists' "auto-illustrations" *are* undeniably closer to both three-dimensional reality and to the pictorial arts than conventional typography can ever be. And yet despite this, there are good reasons why recourse to such an essentially mimetic model is not very conducive to an understanding of words-in-freedom—and why it also remains an undifferentiated[23] approach to adopt to most shaped writing.

One drawback is that mimesis-oriented terminology proves inadequate to characterize the deliberately schematic nature of Futurist "auto-illustrations," a quality summed up at the time by Ardengo Soffici as "approximately like hieroglyphic writing, *reduced to the schematic.*"[24] (Clearly, whilst the Futurists may have thought of themselves as "painter-poets,"[25] they were by no means therefore "pictorial poets.") Compared with that of the Baroque figured poem, for instance, the quality of representation in their works often appears crude (but only because the Futurists were not seeking after such an aesthetic effect, which they in fact also decried in painting itself[26]). But even leaving aside the specifics of historical accuracy at this stage of the argument, it is possible to conclude that any method which uses the same kind of vocabulary to describe a schematic configuration like Marinetti's "balloon" and an example of high-definition mimetic typography —be it an Indian word-picture or a piece of the once-voguish art of typewriter pointillisme[27]—is content to work with too blunt an analytic tool.

Viewing "auto-illustrations" as examples of typographical mimesis may seem a viable, albeit somewhat generalized way of accounting for the illustrations of Futurist layout cited so far. However, this is only because the selection has been restricted to examples of visible signs standing for visual impressions or objects. Many other free-word configurations are by no means "pictorial"

Correzione di bozze + desiderî in velocità

Nessuna poesia prima di noi
colla nostra immaginazione senza fili parole in libertà vivaaaaAAA il FUTURISMO finalmente finalmente finalmente finalmente finalmente

FINALMENTE

poESIA NASCERE

treno treno treno treno **tron tron tron tron** (ponte di ferro: **tatatluuuntlin) sssssssiii ssiissii ssiissssssiiii**
treno treno febbre del mio

---

portare a casa (*camera tepore abitudine affetti intimità dignità igiene gelosia*) 50 goccie essenza essere umano IGNOTO perduto scomparso infinito mondo
fermentare riposare in famiglia angolo buio sotto tendine ricamate trasparente verde toilette lavoro a mano
Serate castissime *Famiglia* *Focolare* *Sorella Vergine.*

CANGIULLO.

ADDIOOooo

Parole in libertà

LATO PARTENZA

facchini
marea di bluse blu
fra scogliere di valigie
viaggiatori spolverine = volo di zanzare
binari di berretti binariati oro rosso argento
ferrovie dello Stato
fretta delle lettere = pillole indigeste
nelle cassette " Lettere " " Stampe "
Biglietti biglietti
biglietti = lasciare tutto
ANDATA coraggiosi
ANDATA-RITORNO nostalgici
casa caffè biliardo
sudore di una carne
chiacchiere quotidiane
con un idiota preferito
fiiiiisch fiiiiiisch
uomini macchina ruote

in this narrow sense. By writing the word "ADDIOOOOO" ("farewell") in letters of ever-diminishing size (Fig. 4), Francesco Cangiullo manages to signify a call dying away (an effect which he further reinforces by vowel-duplication) in such a way that a relatively complex non-visual effect is achieved by the visible typographical layout.[28] Marinetti more than once exploited the converse shape: for instance, with the words "poesia nascere" ("poetry" "to grow")[29] printed in a typeface which itself increases in size from letter to letter (Fig. 5). Similarly, after exhorting his compatriots to take courage, Giovanni Papini concludes part of a rousing political rally-call with the word "coraggio" itself written six times, each time in a successively larger typeface so that the words share the quality of upsurge which he wishes to find in his audience's hearts.[30] An article by Carlo Carrà prints the verb "rispettare" ("to respect") in letters that gradually grow in size, while "disprezzare" ("to dislike") shrinks gradually away to virtually nothing.[31] In another instance, in a poem by Guglielmo Jannelli (Fig. 6) the noun "passato" ("the past") is printed with characteristically Futurist disdain: with a cut-like line running through it, seeming to cleave it, while the noun "avvenire" ("the future") is set out contrastingly intact and in bold letters of increasing size.[32]

Figure 4. Francesco Cangiullo. "Addiooooo. Parole in Libertà.," 1913.

Figure 5. F. T. Marinetti. "Correzione di Bozze+ Desideri in Velocità," 1913.

Figure 6. Guglielmo Jannelli. "Messina," 1914.

REGGIO Villa S. GIOVANNI = sbarre ferro gocciolare acqua-elettrica oro

VEGLIONE IN MASCHERA DI ELICHE

Valvole-di-refrigerio

Bohémieggiare

passato MESSINA = Equilibrista filo di ferro AVVENIRE

sorridere Mondo in ondeggiare **RINASCITA** tendendo Disco

DANZA FUTURISTA

JANNELLI GUGLIELMO.

It would seem even less discriminating to term these effects "pictorial" (or even "mimetic," in any simple sense of the term). The Futurists themselves, as the following passage from one of their manifestos indicates, envisaged them as "designed analogies," because the visible typographical configuration offered an analogy for some non-visual impression: "The free-word poet Cangiullo, in *Fumatori.*II., had the happy thought of rendering with this *designed analogy:*

FUMARE

the long and monotonous reveries and self-expansion of the boredom-smoke of a long train journey."[33]

It would, of course, be possible to make a typological distinction between "auto-illustrations" and "designed analogies," seeing the one form as "pictorial" and the other as working on a principle of synaesthetic analogy. Yet this would be an unwise move, one which would serve to erect an artificial barrier not only between different forms of expressive layout, but also between Futurist shaped writing on the one hand and, on the other, many of the movement's orthographical innovations, its concern with onomatopoeia, and other forms of verbal expressiveness. At least in this context, an inadequate conceptual framework would seem to be both leveling and divisive at the same time. Semiotics, in contrast, is neither. For it is, to quote Pierre Guiraud, "one of the main tasks of semiology to establish the existence of systems in apparently a-systematic modes of signification,"[34] and in this respect it is able to offer an integrating picture of a wide range of apparently disparate experiments. Furthermore—and this must remain the chief argument in its favour as a means of analysing typography—semiotics reveals a more differentiated and accurate way of accounting for any of these individual effects.

Fundamentals of a Semiotic Approach: The Printed Word as Sign

Essentially, semiotics rests upon a rejection of the notion of a fixed bi-partite relationship between a sign and a meaning. Instead, it proposes a more relative, triadic one. In Peirce's words: a sign can be "anything which on the one hand is determined by an Object

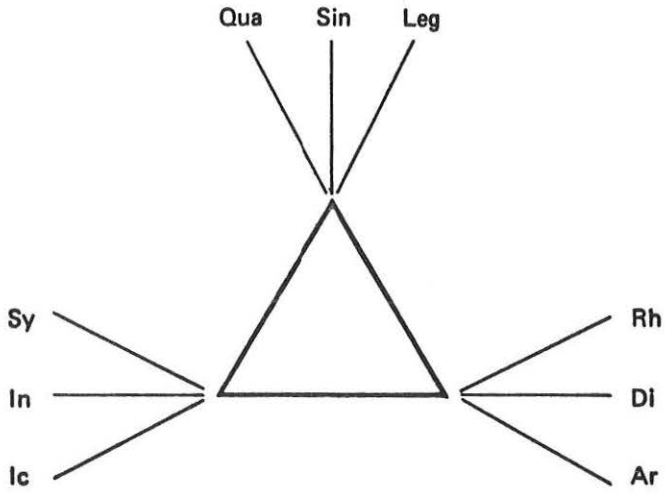
and on the other hand so determines an idea in a person's mind, that this latter determination, . . . the *Interpretant* of the sign, is thereby mediately determined by that object. A Sign, therefore, has a triadic relation to its Object and to its Interpretant."[35]

Signs are thus seen to mediate between an object (sometimes called the denotatum or representatum) and an interpretant, that is to say "an effect in a mind resulting from the sign."[36] Semiotic analysis is able to focus on all or any combination of these aspects, or "dimensions" of the sign relationship (as Charles Morris calls them), as well as on their interrelationship. In order to assist in this, different types of sign have been enumerated, depending on which aspect of the trichotomous sign-relationship one is concentrating on. This taxonomic clarification subsequently attempted in Peirce's theory is of crucial concern for an analysis of typographical signs. In particular, what has (in agreement with Peirce) been rightly recognized as his "most important division of signs"[37]—the division into icon, index and symbol, depending on the sign-object relationship—is fundamental to a semiotic appreciation of shaped writing.

In volume one of his *Principles of Philosophy,* Peirce sets out this aspect of the "triple connection of *sign, thing signified,* [and] *cognition produced in the mind*" in the following terms: "There may be a . . . relation of reason between the sign and the thing signified; in that case the sign is an *icon.* Or there may be a direct physical connection; in that case, the sign is an *index.* Or there may be a relation which consists in the fact that the mind associates the sign with its object; in that case the sign is a *name* (or *symbol*)."[38] Thus, in Pierce's classification, an identikit picture would be an icon, a criminal's fingerprints would be an index, and his prison-number a symbol. Invariably, written language is likely to belong either to the iconic or the symbolic class of signs.

Of Peirce's other two sign-dimensions, probably the more important in the present context is the subdivision according to the materiality of the sign-vehicle,[39] which clearly furnishes another model with which to approach what Aaron Marcus has referred to as the "Visual Syntax of Concrete Poetry." In contrast, Peirce's thinking on the sign-interpretant relationship[40] is less easy to transfer to a consideration of aesthetic information in typographical form.

Figure 7.



Peirce's classification of signs, to recapitulate, could thus be represented by a diagram showing three basic aspects of the sign-relationship, each of which would be indicated by a subdivision: into symbol/index/icon, quali-sign/sin-sign/legisign, and rheme/argument/dicent (depending on whether one is considering the sign-object dimension [O], the interpretant [I], or the sign-vehicle itself [S]). See Figure 7.

Although, as was suggested, not all of this complex is equally relevant to a semiotic approach to typography, this model nevertheless remains the underlying premise of any such approach. However, for most of the following discussion, attention will in fact focus on the bottom left-hand corner of the triangle in Figure 7: the semantic dimension of the relationship of the sign to its object.

The printed word on the page behaves as a sign in more than one sense. It is both the token of a set of sounds, and it and they in turn also stand for an object. Within most twentieth-century European languages "all words, sentences, and other conventional signs are Symbols," in Peirce's sense;[41] that is to say, there is no motivating connexion between the shape of the letters or total utterance, or the colour of ink used, and the object. (Shaped

writing, be it in the poetic or the commercial domain,[42] is clearly an exception to this general principle.) The other main progenitor of modern semiotics, Ferdinand De Saussure, has even defined the two chief characteristics of language as "the arbitrariness of the linguistic sign" and "the linear character of the sign."[43] And certainly within the context of his argument, this contention holds true, although the simple binary opposition which it has since generated between "motivated" and "arbitrary" signs (which are only partially synonyms of icons and symbols[44])—and some of the resultant positions held about the nature of language here—often fails to do justice to the complexity of the situation. Arbitrariness (or "immotivation," as some recent scholars have preferred to call the linguistic sign's condition[45]) remains at best a general rule for which various exceptions obtain and in which can be frequently detected the possibility of hybrid forms (as we shall see later). Principally, however, it is because Peirce's concept of "iconicity" has been subsequently refined to take account of some of these factors that it tends to prove more helpful than the Saussurean model in the investigation of something like Futurist typography.

Futurist "auto-illustrations," in contrast to the conventionally printed word (which is normally a symbolic sign, at least as far as its typography is concerned), are predominantly iconic. That is to say: they are "like [some] thing and used as a sign of it," to employ Peirce's original definition of the motivated relationship between the iconic sign and its object.[46]

In a later attempt at investing Peirce's concept of iconicity with greater precision, Morris summed up the relationship between such a sign and its object in the following terms: "icons . . . denote those objects which have the characteristics which they themselves have—or more usually a specific set of their characteristics."[47] This shift—from the isomorphic notion of signs possessing "the characteristics which [their denotata] have" to "more usually a specified set"—is a crucial modification from the present point of view, for it allows one to appreciate the common ground between "auto-illustrations" and "designed analogies." The idea of a conceivably small number of "shared characteristics" clearly lends itself to many more types of visible language than that of mimetic representation. (And, as we shall see later, a recognition of the

limited number of shared characteristics raises questions of how these relate to the other features of the shapes in which they occur.)

In fact, many of Morris' examples of the difference between the symbolic (unmotivated) sign and the iconic (motivated) one lie precisely in this area of a minimal number of shared characteristics—and in this way come much closer to the aspect of semiosis explored by Futurist typography and most shaped writing than any theory of imitation could. Morris points out, for instance, that "a photograph, a star chart, a model, a chemical diagram are icons; while the word 'photograph,' the names of the stars, and the chemical elements are symbolic."[48] Significantly (as previously mentioned), Soffici compared Futurist words-in-freedom to hieroglyphic writing, describing them as "reduced to the schematic."

It might be contended that so far all that has really been proposed is a rather elaborate system to justify a semantic substitution: of the term "iconic" for "mimetic" or "pictorial." Eliseo Vivas has in fact objected to the semiotic approach on precisely these grounds, suggesting that "it is difficult to see the difference between the iconic theory and the theory of imitation," that "the notion of imitation has been avoided only by translating it into the notion of iconity."[49] This is true. And it would be a criticism, if all one were proposing was the labelling of, say, Marinetti's "balloon" as an iconic sign instead of viewing it more traditionally as an example of mimetic typography—as a word-configuration imitating the shape of a balloon. But even in the case of this simple example, the term "icon" must needs be the starting-point for analysis, not some *terminus ad quem.*

In fact, even the most rudimentary of Marinetti's so-called "auto-illustrative" effects offers a neat demonstration of Umberto Eco's reported statement that iconicity "must be defined in connection with the process of perception,"[50] not merely as a matter of shared characteristics. It is a point which Eco has demonstrated most persuasively in the case of a feature often highly relevant to the study of shaped writing: that of the cognitive value of the outline.

"If I take a pen," Eco explains, "and draw on a sheet of paper the silhouette of a horse, through creating this silhouette by the extension of a single, elementary line of ink, everyone will be pre-

pared to recognize a horse in my drawing; and yet the one property which the horse in the drawing has (a continuous black line) is the sole property which the real horse *does not have*. My drawing consists of a sign, which delimits the 'space within=horse' and separates it from the 'space without=non-horse,' whereas the horse does not possess this property. . . . Therefore I have produced on my drawing *not one condition of perception;* for I perceive the horse on the basis of a large number of stimuli, not one of which is distantly comparable to an extended line." The redefinition of the iconic sign which Eco offers to cover such (Gestalt) contingencies is the following: "Iconic signs reproduce a few conditions of perception, but only when these have been selected on the basis of codes of recognition and explained on the basis of graphic conventions."[51] Already contained in Pierce's notion of the interpretant—for example, in the definition of an iconic sign as one which displays qualities that "resemble those of [its denotatum] and *excite analogous sensations in the mind for which it is a likeness*"[52] there was a concession to the psychology of perception which points the way to that synthesis of semiotics and Gestalt psychology which is at present being undertaken. What Eco says concerning the role of the outline in his horse-illustration can, with some modification, be transferred to a semiotic commentary on Marinetti's balloon and similar figures. For here, while there is no simple outline even, the linearity of the writing functions as a more complex variant on the same principle. We decode the linearity, which is far from being mimetic, depending as it does on both codes of perception and our reaction to certain graphic conventions. Without wishing to belabor this specific example unduly, I would suggest that in many cases there is a logical connection between the Futurist interest in the rapid transmission of information through instantly recognizable images and their dependence on Gestalt models.

So far, only some of the more fundamental aspects of a semiotic approach to typography, based on the concept of iconicity, have been considered. In its exploration of how we react to such signs, semiotics has been most concerned with the visual side. Here, it has a marked contribution to make to the analysis of shaped writing. In the particular Futurist context, however, there are

different forms of visual iconicity: on the one hand, there is the simple form where a visible sign has a visible object (e.g., Cangiullo's pile of words, which Bergman describes, using traditional impressionistic terminology, as "placed in such a way as to *evoke* in the reader the dimensions and positions of suitcases"[53]). Here the shared characteristics include features of conglomeration, standing in disorder, consisting of what Eco would call a "code of recognition" denoting rectangular shape, etc. On the other hand, there is the synaesthetic form of "designed analogy." Rather than a visual-to-visual relationship between sign and object, one is dealing, for example, in the way "fumare" is written in the same poem (Fig. 2) with a synaesthetic semiotic analogy. Here one can detect a number of features common to the printing of the word and to what the pictogram is a sign of; and these involve a number of senses, as well as the visual. The relationship between smoke and boredom rests on shared characteristics related by Marinetti to length and dynamic self-expansion, involving also an equation of typographical length, vowel-multiplication, and changing typeface. (Whilst it is possible, in the case of some "auto-illustrations," to follow those semioticians who prefer to view iconic motivation as a special case of metonymic *pars pro toto*,[54] this seems a less suitable approach for synaesthetic "designed analogies," where the "part" standing for the whole is presented in a highly coded form.) Futurist typography is, of course, not only iconic when it involves shaped writing; its use of boldness of print and size of typeface to indicate degrees of importance or acoustic properties (with an eye to declamation) also involves a form of iconicity.[55]

However, a consideration of iconicity in printing can often be faced with an even more fundamental question than that of how this kind of sign works. The issue of whether or not a particular mode of iconicity is actually operative can be a problem in some instances. In Futurist poetry one can usually ascertain with some accuracy when shape becomes iconic because of the marked departure from linear printing which heralds such a change of sign-function. Yet this awareness of what is (or is not) iconic may not be so easy to arrive at in other cases.

Arthur W. Burks once protested that Peirce was willing to see a sign as an icon "merely if it possesses or exhibits the quality or

relation it signifies. . . . On this criterion any token of 'black' printed in black ink is iconic, though the reader . . . is unaware of the fact that it is displaying the quality it represents. . . . Such a criterion, however, contradicts the original definition of an icon as a sign which exhibits its object to an interpretant;[56] for the objection implies that a sign is not iconic unless the interpretant recognizes it as such."[57] In fact, this objection disregards one crucial factor: that Peirce goes no further than to describe something as "fit to be" an iconic sign under such conditions.[58] Whether it becomes one or not will depend on other controlling factors, including adequate identification (in the case of poetry by signals to the reader) of the code which permits this sign-role to operate. Nevertheless, Burks' misconstrued illustration is singularly relevant to the subject in hand, for it raises certain questions connected with the appreciation of motivation in a lot of experimental poetry.

Conventionally, we are aware, black ink is not iconic in printing. Burks is therefore surely quite justified in deducing that it would be ridiculous to expect a reader to interpret any degree of motivation into the fact that the adjective "black" will normally be printed in black ink. To be more accurate: what he says holds true for most non-aesthetic contexts because we as readers correctly infer that one of the conventions (or dominant codes) within such areas decrees that the materiality of the printed sign-vehicle be ignored (as non-iconic). When it comes to the potential iconicity of printing techniques, this even obtains for most poetic works; the "designed analogy," like all shaped writing, is an exception to this convention. But like all art, poetry exploits the materiality of its elements, and in so doing has to create new reading processes. It has been suggested that "a poem generates its own code of which the poem is the only message,"[59] but the real point of interest for us here is how it not only manages to operate with, but also to identify and transmit to the reader, the presence of a specifically iconic typographical code, when this conflicts with his normal horizon of expectation.

Whereas a departure from linearity is likely to indicate one order of iconicity (shaped writing, for instance) quite readily, motivation will be less obvious when, for example, a conventional feature like blackness of print has been retained for iconic reasons.


SCRABrrRrraaNNG
Paa piiig
Paaak
Piiing
futurista
GRAAAG
TRAC
tumb-tumb
tumb-tumb-tumb-tumb
PPPPPPaaaab
PUUM PAMPAM
SCHA
SIMULTANEITÀ
ESPLOSIONE
ISONZO
campestre intre fresco
Guerra ai tedescofili!
verdi
sdraiato

In his collection, *Les mots en liberté futuristes,* Marinetti includes a free-word composition which illustrates some of the issues associated with the process of recognizing coding in the case of the printed medium. The work in question is Marinetti's own much-anthologized *Le soir, couchée dans son lit, elle relisait la lettre de son artilleur au front.*[60]

Marinetti's "collage tipografico" (Fig. 8) can be experienced as existing on a number of structural and temporal planes. The blacked-in figure in the bottom right-hand corner is identifiable as the girl who, according to the work's title, "that evening, lying in bed, re-read the letter from her gunner at the front." While this depiction of her is obviously an iconic sign, it could well be codified in a number of different, mutually exclusive ways. Bearing in mind the setting signaled by the title, it would be feasible to view the girl's shape as a silhouette (or possibly even her shadow on a wall). Even her relatively small size may be iconic: suggesting her subordination to what is being presented in the rest of the poem. An alternative reading is that this part of the design is iconic in the way that many roadsigns are, with a black-filled figure standing as a pictogram of "girl" ("elle"). Moreover, how one interprets this aspect of the design may well affect one's reading of its other codes (and vice versa). If only the girl's *shape* is taken to be the motivated element in the pictogram, black is deemed non-iconic and consequently might be expected to be so elsewhere in the poem; e.g., in the thick black letters of the exploding words near the center. On the other hand, if the form's color *is* iconic (*qua* silhouette or shadow), the blackness elsewhere could conceivably denote the dark smoke and pall of battle with a number of shared characteristics. Another possibility is that the rest of the poem signifies what she is reading (Bowler calls it a "poem in the form of a letter from a soldier to his sweetheart"[61])—presumably offered to her in the shape of a Futurist free-word poem! Or it could even be meant to signify the battle itself, not an iconic version of it put on paper by him. Indeed, there is also no reason why it cannot be a sign of his

Figure 8. F. T. Marinetti. "Le soir, couchée dans son lit, elle relisait la lettre de son artilleur au front," 1919.

letter's interpretant: the image created by his vivid description in her mind's eye. Whether or not the black is iconic (and where) will obviously differ from reading to reading.

Although the reference to "evening" in the title does at least give a clue that the reader is to some extent warranted in suspecting the blackness of some parts is motivated, the actual latitude of semiotic iconicity in *Le soir* deliberately resists unambiguous definition. Carlo Belloli once described it as a work in which "Marinetti attempted to exhaust all the possibilities that typography has of reproducing an experience, in order to open up new paths for it in the future."[62] Not surprisingly, therefore, this compendium of methods proves an illustration of some complexity, depending for many of its effects upon an act of equivocation about the exact nature of its sign-vehicle's codes. The questions which a detailed interpretation of its signs raises touch on one of the basic needs of any sign-system: to identify its codes and sub-codes.

Generally, Futurist poetry involves less ambiguous, but nevertheless often unaccustomed forms of iconicity, and for that reason it usually needs to establish at an early juncture what type of sign and what range of codes and conventions is being worked with. It is frequently, of course, the covers of such experimental volumes that perform this task. As Guiraud points out, "the title of a work of art refers to the code adopted much more often than to the content of the message."[63] The cover of Auro D'Alba's volume *Baionette* (Milan, 1915) has the title-word so printed as to signify the shape of a dynamic series of advancing bayonettes and the letters which form the title of Luciano Folgore's *Ponti sull'Oceano* (Milan, 1914) recede in perspective like the contours of some huge, multi-arched sub-marine bridge. The cover of the 1914 edition of Marinetti's *Zang tumb tuuum* (analysed in detail, below) arranges multiples of these three words in such a way that they radiate outwards in the same way as their denotata (the sounds of war) could be imagined doing from the battle scene. Here is one obvious area of overlap between the iconic identification of code (which Guiraud ascribes to titles in works of art) and the exploitation of iconic signs in advertising (cf. Roback's "Simulates"), for the style of a Futurist title is to some extent an act of (commercial) propa-

ganda. And since this publicity factor also requires rapid recognition of both sign and code, the covers of leading volumes of poetry might be thought of as epitomizing many aspects of the whole Futurist aesthetic: a concern with dynamic reading processes, an iconic exploration of language's materiality and yet a degree of experiment always circumscribed by various graphic codes and conventions of reading. It is these aspects of the iconic sign which need to be examined in greater detail now in order to discover what insights semiotics affords.

Shared Characteristics, Graphic Codes, and Conventions of Reading

So far shaped writing has been treated largely as if it were an unadulterated example of the iconic sign. But the iconic sign itself is in fact only an ideal type. As Fitzgerald points out, "while there is an iconic aspect or characteristic of things, there is nothing that is purely iconic."[64] Although this point has not to my knowledge been incorporated into any semiotic approach to typography, it has been recognized and acted upon in other quarters. Thus, Peirce himself describes a diagram as "predominantly an icon of relations . . . aided to be so by conventions."[65] And Guiraud points out, "Motivation does not exclude convention: the schematized diagram of a barrier which heralds a level-crossing is, despite its iconic value, a conventional sign which the users of the code can neither alter nor replace."[66] In a way that the mimetic model does not, semiotics can give one a means of isolating various separate constituents within such a sign-structure as shaped writing: of distinguishing between the iconic elements (both simple shared characteristics and those germane to Eco's "codes of recognition"), elements of the sign that take account of convention (for convention is a matter of structure, not just reading habit) and other non-iconic and non-conventional ingredients. The following tentative exploration of the central, *dynamic* quality of Futurist typography will illustrate some of the factors—and also some of the problems—which such a distinction throws into relief.

For Marinetti and his followers the new free-word poetry was to be a celebration of "dinamismo," "velocità," and "simultaneità." A "love of speed" was equated by them with the need for "abbreviation, and the summary,"[67] and in construction Futurist

paintings and poems were to represent the pace of the modern world. The new aesthetic, in fact, centered on "the beauty of speed."[68]

Some of the most striking iconographic aspects of the geometry of dynamism (ironically, something well appreciated by the Renaissance painters whose heritage the Futurists were trying to shake off[69]) were spelled out in the writings on painting. Gradually, many of the structural principles outlined there found their way into the techniques of poetic layout—hardly unexpectedly, since many of the Futurists were both painters and poets and there was a close collaboration between all members of the movement.

In his *Pittura scultura futuriste,* Umberto Boccioni observes that "every rapidly moving object—a train, a car, a bicycle—generates in pure sensation an emotional milieu which takes the form of *horizontal penetrations at an acute angle* . . . [a] crowd starting off at a run appears in our dynamic consciousness as *a maze of acute angles, oblique lines,* and aggressive zig-zags."[70] In a similar vein, and still elucidating the geometric principle primarily in respect of painting and the phenomenon of motion perceived, Carlo Carrà suggests: "The acute angle . . . is passionate and reveals volition and aggressive onslaught. The obtuse angle manifests a fluctuation and a diminution of this volition and this aggressive penetration."[71]

Carrà went on to elaborate on these implications in even further detail in his manifesto "The Painting of Sounds, Noises, and Smells," a document which casts a great deal of light on the poetry also being written at this time (including Carrà's own volume *Guerrapittura,* published in Milan in 1915). "THE PAINTING OF SOUNDS, NOISES, AND SMELLS," it is proclaimed, desired *inter alia:* "The clash of acute angles . . . the angles of volition. . . . Oblique lines which affect the soul of the observer like so many bolts from the blue. . . . The inverted cone (the natural shape of an explosion), the slanting cylinder and cone. . . . The collision of two cones at their apexes (the natural shape of a waterspout) with floating and curving lines. . . . The zig-zag and wavy line. . . . Ellipsoidal curves seen like nets in movement."[72]

The emphasis on "natural shapes" in this argument is of importance in a consideration of the sign-object relationship, especially when one comes to explore the relationship of iconic ele-

ments to the degree of typographical convention and codification involved. Marinetti once referred to the "visual foreshortening and visual synthesis caused by the speed of trains and cars,"[73] and yet it would be an oversimplification to assume that Futurist typography was simply trying to imitate this, or could: since in actual practice there is a great deal more non-iconicity at play than such a statement might lead one to seek.

Before typographical illustrations can be considered, it will be necessary to clarify the relationship between graphic conventions and motivation within the sphere of painting. Historically, of course, such dynamic configurations cannot be appreciated without some reference to the Futurist concept of "force-lines" and the painters' thinking on this issue does help to illuminate the sign-object relationship in both painting and poetry of the time.

The major Futurist artists explained what was meant by "force-lines" in the catalogue-preface to the 1912 exhibition of their work at the Gallery Bernheim-Jeune in Paris. It seems, from what they say there, that "force-lines" are partly a matter of the property of objects as actually perceived and partly a matter of codification. "All objects," it is claimed, "stretch out towards infinity by means of their *force-lines*, whose continuity is measured by our intuition. It is these force-lines which we must draw, to lead the work of art back to true painting. We interpret nature by depicting on the canvas these lines as *the beginnings or continuations of rhythms which the objects themselves impress upon our sensibility*."[74] Inasmuch as force-lines coincide with the "rhythms which the objects themselves impress upon our sensibility," they are iconic; i.e., in the simple sense of involving shared characteristics (although a Gestalt approach to iconicity would seem to be appropriate to many aspects of the Futurist concern with dynamism). In his book on art and sculpture, Boccioni calls them the "*representation* of the movements of matter along the trajectory determined by the structure of the object and its actions."[75] But it is with the manner of representation that certain complications set in. For inasmuch as they are also "continuations" creatively stylized as extensions of these rhythms, they are conventionalized (or symbolic, in the everyday, non-semiotic sense of the word[76]). In Boccioni's various studies for the picture—*Dinamismo di un ciclista*

of 1913, for instance—one can in fact see the process of increasing stylization from study to study, as iconicity gradually becomes displaced by an emphasis on highly schematized force-lines.[77]

This is an aspect of signification which semiotics, in its overriding concern with taxonomy, has often underestimated. Yet the *kinetic* nature of sign-behaviour—in the continually changing relationship between iconic and conventional elements: in the act of creation itself, also within different phases of an artist's work or a historical movement—may be of crucial interest to those engaged in a semiotic approach to the arts (in a way that it may not be in other disciplines). Mieczysław Wallis has drawn attention to this factor: "By virtue of custom or convention," he writes, "iconic signs, especially schemata, may function in a certain context as conventional signs. . . . There takes place a process of 'deiconization' and 'conventionalization.' Many conventional signs of various systems of script—for example, Chinese ideograms—originate in this way. We also meet (although more rarely) the reverse process, the transformation of a conventional sign into an iconic sign, or 'iconization'."[78] And since terms like "conventional sign" and "icon" are ideal classes, not mutually exclusive real categories, one is bound to encounter different degrees of conventionalization and iconization within the sign-spectrum, it should be added.

Compared with conventional printing, much Futurist poetry obviously involves a process of what Wallis would call the "iconization" of the word: through "auto-illustrations" and "designed analogies." But within the lifespan of the movement, in the gradual transference to typography of organizational principles, of iconic signification (through, for instance, force-lines) one can detect a shift towards conventionalization. Things more iconic and innovatory in painting can become conventionalized as certain tokens of a style become established. This is part of the dynamics of the movement's development: a sort of streamlining of effects. Thus, acute angles, first presented as properties of objects in motion, are gradually abstracted from detailed contexts to function as largely symbolic signs of movement (which contemporaries would have no difficulty in interpreting). The fact that within the period itself what began as iconicity began to acquire the characteristics of a conventional sign is one factor which a semiotic

exploration of the influence of Futurist painting on typography would have to take into account. Another is the way in which the geometry of dynamism to be found in painting (itself already an amalgam of iconic elements and graphic codes) becomes further modified by having to be accommodated to both the materiality of the different medium and the need for a different kind of reading process.

What this may mean in respect of the materiality of the printed sign is perhaps best suggested by Guiraud's conclusion that "the poorer the mode of representation is, the greater the codification of the signs."[79] For various reasons, this would be a challenging proposition to test in the context of Futurist free-word composition. Clearly, shaped writing marks an attempt to enrich language, and yet it is a poorer mode of iconization than painting, so that in this sense words-in-freedom are likely to be more highly coded than Futurist pictures. (One aspect of this has already been considered in the case of Marinetti's "balloon.") Over and above this, however, there is the point that increased stylization seems to have taken place anyway in the translation of methods from one medium to the other, as part of the general conventionalization of the movement's iconic techniques. Added to which is the fact that some of the more schematic poems were primarily influenced by *Zang tumb tuum*, and Marinetti was a poet only—not a painter. Still, the real point at issue here is that semiotics offers a more differentiated method of solving such complex problems than the mimetic framework supplies; not because of its perhaps off-puttingly elaborate system of sign-types, but because it distinguishes between different elements within the individual sign.

The second major readjustment, to readability, can be witnessed in even simple examples, such as the title of the 1914 edition of *Zang tumb tuum* (Fig. 9).

This well-known cover is iconic in a number of different ways. Acoustically, it is so by dint of being onomatopoeic, expressing certain sounds of war. Typographically, it shares with the noises signified certain characteristics of centrifugality and diminution of size. On the other hand, only three lines of print actually denote the sounds (this is part of the poverty of the medium: not only of print in general, but the limited number of words likely to be

T. MARINETTI FUTURISTA

ZANG TUMB TUMB

ADRIANOPOLI OTTOBRE 1912

TUUUMB IN LIBERTÀ

PAROLE TUUUUM TUUUUM TUUUUM

EDIZIONI FUTURISTE
DI "POESIA"
Corso Venezia, 61 - MILANO
1914

effective on something like a title-page). The pattern is therefore near-minimal, even though it is reinforced by having the author's name and the place of the battle in question also printed so as to fit in with the general configuration. Within certain strict limitations, however, the arrangement might be considered to exploit and stylize the graphic conventions already well developed by the Futurist painters. The "typographical revolution" may have allowed a poet like Marinetti to "impress on . . . words [the] velocity of airplanes, trains, . . . molecules, and atoms"[80] but this could only be done within the framework of certain inviolable conventions.

In *Art and Visual Perception,* Rudolf Arnheim refers to our "general tendency to read visual patterns from left to right,"[81] a habit which is exploited in different ways by Futurist painting and poetry. A study of any representative collection of Futurist paintings or any volume on the art of the period would reveal that many of the dynamic objects pictured are shown to be moving towards the left of the painting (e.g., in Luigi Russolo's *Treno in velocità, Automobile in corsa,* and *La rivolta;* or in Boccioni's *Dinamismo di un ciclista).* The movement of the viewer's eyes from left to right thus appears to endow the signified object with a sense of impetus in the opposite direction. On the other hand, the sounds of *Zang tumb tuuum* radiate outwards from left to right: the reading-direction remains the same for both painting and poetry, but the direction of the sign-motion has been reversed. There are good reasons for this inherent in the difference between the two kinds of reading process. As Jan Tschichold has observed, "our writing runs from left to right" and "our eyes naturally return at the end of each line to the place where they started."[82] Thus, whilst the contrast between converging and radiating lines may be appropriate to the difference between an object in motion and sound waves emanating from a particular source, the two configurations are also appropriate to two different kinds of reading. Since more than one line of writing is likely to be needed—both to give title-

Figure 9. F. T. Marinetti. Cover of *Zang tumb tuuum,* 1914.

page information and to create a pictogram—and because we are expected to take in each line separately to understand it (and Marinetti is here reluctant to depart too boldly from the kind of reading conditions we are used to, or the process would be slower), certain inferences naturally follow. The arrangement will still have to relate to, if not actually conform to, the traditional horizontal layout; it will not involve a single sweep of the eyes from left to right, as in painting (if one accepts Arnheim's generalization for the sake of the argument), but a number of repeated motions of this kind.[83] In fact, there is a sense here in which the relative poverty of the medium is converted to good advantage. For, as Tschichold has pointed out: "In special cases [lines] may be set obliquely, which is more eye-catching. . . . It can be very effective but only when done sparingly. If it is used, single lines are more effective than short words or groups of short lines, because then the oblique position is not so easily noticed."[84] In designing the cover for *Zang tumb tuuum,* Marinetti would appear to have shown a feeling for these factors.

With an example of the order of simplicity to be found in the cover-design for *Zang tumb tuuum,* it is relatively easy to distinguish between the iconic elements, the movement's private codes of signified dynamism (gradually shifting from iconicity into convention) and specific graphic conventions appropriate to the printed page. With a more elaborate piece of typography, such as one finds in Gino Severini's *Danza serpentina,*[85] the differentiation of sign-characteristics would be much more difficult to accomplish (indeed, the subject would require a paper to itself). Yet only a semiotic approach which separated iconic from other components would be able to extend the analysis of words-in-freedom in this direction.

Conclusions and Perspectives

This paper's argument for a semiotic approach to shaped writing has so far rested on two main factors: the advantages of the concept of iconicity, in contrast to the mimetic model, and the ability of semiotics to differentiate various aspects within any given sign-vehicle. But semiotics is a rapidly developing discipline, at present substantially refining its techniques of analysis, and it would be a

misrepresentation of its methodological merits not to take account of these new perspectives and indicate their fruitfulness for a semiotic analysis of typography. Of particular interest in this connexion are certain current attempts at quantifying the iconic element of the sign, and at bringing about a greater degree of cross-fertilization between the psychology of perception and the concept of the interpretant.

"Auto-illustrations" and "designed analogies" have been treated in the present paper as single signs (to some considerable extent iconically motivated signs). However, it is possible to view them as iconic "supersigns"; i.e., as *collections* or *configurations* of symbolic signs (viz. words).[86] Whether iconicity occurs at the sign or supersign level would be something which semiotic analyses would have to consider. And so, too, is the question of just how much iconicity is present in such (super)signs. Certain starts have already been made in this direction at evolving a more precise way of formulating iconicity.

In "Iconic Signs, Supersigns, and Models" Martin Krampen has indicated a number of fruitful perspectives from which the iconicity of supersigns (be they typographical or otherwise) can be investigated. In general, he argues, work on the theory of models (to some extent one of Peirce's own starting-points) is at present far more advanced than any semiotic taxonomy of iconic signs. Since "supersigns" and "models" are in many ways comparable, there are good grounds for contemplating a "mapping of supersigns into the domain of models."[87] Leaving aside certain misgivings about whether the mapping should not be taking place in the other direction, one should perhaps note that one of the difficulties here is that the terminology—as in much related structuralist thinking—tends to operate with sets of binary oppositions which may seem somewhat over-generalized, albeit quantifiable, for the aesthetic context. (The dominant model of information theory is to be witnessed in this.) Thus Krampen proposes a number of two-part distinctions (between isomorphic and heteromorphic, structural and qualitative, isohylic and analogical models) which he suggests could be employed in a taxonomy of iconic signs. Wallis has similarly proposed a bipartite approach, distinguishing between two extreme forms of iconic sign. On the

one hand, the "extremely simplified" ones, "devoid of details," to which he gives the name "schemata." On the other, iconic signs "rich in details"—or "pleromata," as he calls them.[88] Clearly within such a system, most Futurist typographical effects would be assigned to the "schemata" group. And because the theory of models offers a means of speaking with more precision about the degree of iconicity, it should prove useful to commentators on the printed word.

Since Eco has shown some of the ways in which an account of iconic motivation needs to make use of the psychology of perception, the semantic and pragmatic[89] dimensions of semiotics have come closer together. A description of sign-object relationships is thus likely to move more readily into a consideration of the interpretant and the act of perception as well. And the work carried out by Arnheim on the general theory of visual perception in art and by Marcus on concrete poetry in this respect, in particular, is likely to be integrated more easily into an overall semiotics of typography.

1. London: privately published, 1971, p. 2.
2. *Pagina*, III (October 1963), 4-47.
3. "Framed and Shaped Writing," *Studio International: Studiographic Supplement* (September 1968), 110.
4. Introduction to the catalogue of the Exhibition of Concrete Poetry held by the Zürcher Kunstgesellschaft at the Helmhaus (Zürich: Helmhaus, 1970), pp. 5-16.
5. *Visible Language*, VIII, 4 (Autumn 1974), 334.
6. Sub-titled *Grundlegung und Anwendung in der Texttheorie* (Reinbek bei Hamburg: Rowohlt, 1969). See also: *muster möglicher welten: eine anthologie für max bense*, ed. Elisabeth Walther & Ludwig Harig (Wiesbaden: Limes Verlag, 1970); and Paul de Vree, *Poëzie in fusie, visuel, konkreet, fonetisch* (Liège: De Bladen voor de poëzie, 1968). A critical assessment of the achievements of the Stuttgart school in this area is given in my review-article "The Aesthetic Sliderule," *Times Literary Supplement* (12 October 1973), 1255f.
7. The author wishes to record with gratitude the help received from Jeremy Adler, Peter Mayer, and Mieczysław Wallis in the writing of this paper.
8. "Lo splendore geometrico e meccanico e la sensibilità numerica," in F.T.M., *Teoria e invenzione futurista*, ed. Luciano De Maria (Rome: Mondadori, 1968), p. 85. Unless otherwise indicated, translations from works not written in English are my own.
9. Many examples of these have now been conveniently brought together by L. Caruso and S. M. Martini in *Tavole parolibere futuriste (1912-1944)* (Naples: Liguori, 1975).

10. *Zang tumb tuuum* (Milan: Edizioni futuriste di "Poesia," 1914), p. 120.
11. Paolo Buzzi. *L'Ellisse e la Spirale* (Milan: Edizioni futuriste di "Poesia," 1915), p. 223.
12. Buzzi, p. 222.
13. Corrado Govoni. *Rarefazioni e Parole in Libertà* (Milan: Edizioni futuriste di "Poesia," 1915), p. 48.
14. Francesco Cangiullo. "Fumatori.ll." *Lacerba*, II, 1 (1914), 10.
15. M. Bétuda. "Looping the Loop. Parole in Libertà," *Lacerba*, II, 7 (1914), 104.
16. "La cinematografia futurista," manifesto signed by F. T. Marinetti, Bruno Corra, Emilio Settimelli, Arnaldo Ginna, Giacomo Balla, and Remo Chiti, quoted from *Archivi del futurismo*, ed. Maria Drudi Gambillo and Teresa Fiori, I (Rome: De Luca, 1958), 97.
17. Giovanni Papini. "Il cerchio si chiude," *Lacerba*, II, 4 (1914), 49.
18. "La 'distruzione del modello lineare' e la letteratura d'avanguardia," *Lingua e stile*, III (1970), 450.
19. *"Modernolatria" et "Simultaneità": Recherches sur deux tendences dans l'avantgarde littéraire en Italie et en France à la veille de la première guerre mondiale* (Uppsala: Bonniers, 1962), p. 200.
20. "Histoire sommaire du tableau-poème," *XXe siècle*, nouvelle série 3 (June 1952), 22.
21. *Futurism: The Story of a Modern Art Movement. A New Appraisal* (New York: Greenwood Press, 1969), p. 48.
22. *Per conoscere Marinetti e il futurismo: Un'antologia*, ed. L.D.M. (Milan: Mondadori, 1973), xxxiv.
23. Lack of differentiation is the strongest charge to be laid against the theory of imitation here, not simply, as Stefan Themerson argues, that "imitation" is "too humourless a word to use," *Apollinaire's Lyrical Ideograms* (London: Gaberbocchus, 1966), p. 26.
24. "Chimismo lirico," *Primi principî di una estetica futurista*, [Florence, 1920] quoted from *Archivi del futurismo*, I, p. 586. My italics.
25. The phrase is Carlo Carrà's in the poem "1900-1913. Bilancio. Parole in Libertà," *Lacerba*, II, 3 (1914), 39.
26. Point 2 of the "Manifesto dei pittori futuristi" of 1910 reads: "disprezzare profondamente ogni forma di imitazione," *Archivi del futurismo*, I, p. 64.
27. Cf. the word-picture of Mahadeva or Shiva begging rice from Parvati or Annapurna, now housed at the Victoria & Albert Museum, London (reproduced in B. B. Bowler, *The Word as Image* [London: Studio Vista, 1970], p. 21) and the almost photographic portrait of Churchill made up of repeated typewritten versions of his name (unattributed, reproduced in the catalog *Typewriter Art: Half a Century of Experiment* [London: Polytechnic of Central London, 1974], p. 17).
28. "Addiooooo. Parole in Libertà," *Lacerba*, I, 22 (1913), 256.
29. "Correzione di Bozze + Desideri in Velocità," *Lacerba*, I, 23 (1913), 269.
30. "Marcia del coraggio," *Lacerba*, I, 21 (1913), 237.
31. "1900-1913. Bilancio. Parole in Libertà," *Lacerba*, II, 3 (1914), 38.
32. "Messina," *Lacerba*, II, 4 (1914), 60.
33. F. T. Marinetti. "Lo splendore geometrico e meccanico e la sensibilità numerica," *Teoria e invenzione futurista*, p. 89. As can be seen from Figure 2, Marinetti's depiction of this "designed analogy" is not quite accurate.
34. *Semiology* (London & Boston: Routledge & Kegan Paul, 1975), p. 30.

35. *Reviews, Correspondence, and Bibliography*, ed. Arthur Burks *(Collected Works,* VIII) (Cambridge: Harvard University Press, 1958), p. 232.
36. John J. Fitzgerald. *Peirce's Theory of Signs as Foundation for Pragmatism* (The Hague-Paris: Mouton, 1966), p. 40.
37. Fitzgerald, p. 35.
38. *Collected Papers*, vol. 1, ed. Charles Hartshorne & Paul Weiss (Cambridge: Harvard University Press, 1931), p. 196.
39. Again there is a tripartite division: "A *Quali-sign* is a Quality which is a Sign . . . A *Sin-sign* (where the syllable *sin* is taken as meaning 'being only once,' as in *single* . . .) is an actual existent thing or event which is a sign. . . . A *Legisign* is a law that is a Sign" (*Elements of Logic, Collected Works*, II, ed. Hartshorne & Weiss [Cambridge: Harvard University Press, 1932], p. 142).
40. For an account of the types of sign here—rheme, dicent, argument—see Peirce's *Reviews, Correspondence, and Bibliography*, p. 229.
41. *Elements of Logic*, p. 165.
42. In both contexts, as A. A. Roback has shown, the style of printing can be a highly effective form of motivation. See the chapter on "Simulates" in his *Destiny and Motivation in Language: Studies in Psycholinguistics and Glossodynamics* (Cambridge, Mass.: Sci-Art Publishers, 1954), pp. 414-422.
43. *Cours de linguistique générale*, ed. Charles Bally & Albert Sechehaye (Paris: Bibliothèque scientifique, 1949), pp. 102-5 and 186-90.
44. Clearly, words are neither "arbitrarily" selected at *each* use nor are they always "unmotivated." Stephen Ullmann has therefore suggested that the difficulty which arises from Saussure's idiosyncratic use of "arbitrary" "can be reduced . . . if 'arbitrary' is replaced by 'conventional' . . . [since] all [it] means is the absence of any intrinsic motivation or justification, any natural connection between the name and the sense" (*Principles of Semantics* [Glasgow: Jackson; Oxford: Blackwell, 1957], p. 83). Ullmann in fact also proposes "three principal types of motivation" that *can* exist in language: phonetic (e.g., onomatopoeia), morphological (involving word-formation by analogy with existent words), and semantic (metaphor). A further kind of motivation—connecting the shape and meaning of what is spoken with the physical act of speaking—is explored in Heinz Werner, *Grundfragen der Sprachphysiognomik* (Leipzig: Verlag J. A. Barth, 1932); but, of course, both of these investigations are limited, like Saussure's, by the fact that they are concerned with the spoken word, not typography, and with normal language, not poetic or advertising idiolects.
45. See Frédéric François, "Caractères généraux du langage," *Le Langage*, ed. André Martinet (Paris: Gallimard, 1968), pp. 20-25; and Stephen Heath, "Towards Textual Semiotics," *Signs of the Times: Introductory Readings in Textual Semiotics*, ed. S.H., Colin MacCabe & Christopher Prendergast (London: Instantprint, n.d.), p. 18.
46. *Elements of Logic*, p. 143.
47. *Foundations of the Theory of Signs, International Encyclopedia of Unified Sciences*, vol. 1, no. 2 (Chicago: University of Chicago Press, 1938), p. 24. A. J. Ayer has observed that "the conditions which a sign must satisfy to be iconic are not very strict," an icon "does not have to bear any sensory resemblance to its object: it is enough that there should be some likeness between the relations of their respective parts" ("Peirce's Categories and his Theory of Signs," *The Origins of Pragmatism: Studies in the Philosophy of Charles Sanders Peirce and William James* [London: Macmillan, 1968], p. 151).

48. *Foundations of the Theory of Signs,* p. 24.
49. "Aesthetics and Theory of Signs," *Creation and Discovery: Essays in Criticism and Aesthetics* (Chicago: Gateway Editions, 1955), pp. 390 & 405.
50. See Martin Krampen, "The Role of Signs in Different Sign Processes—Towards a Basis of Generative Semiotics: Report on a Semiotics Workshop (Ulm, October 1972)," *VS,* IV, 3 (1973), 116.
51. *La struttura assente: Introduzione alla ricerca semiologica* (Milan: Bompiani, 1968), pp. 113f. The same observation about the absence of a dividing line is made in a different context by Wolfgang Köhler in his *Gestalt Psychology* (New York: The New American Library, 1959), p. 106.
52. *Elements of Logic,* p. 168.
53. *"Modernolatria" et "Simultaneità,"* p. 200. My italics.
54. Ewa Siemińska, for instance, concludes that "the material reality of these signifiants is a metonymic reality, whereby we mean the quantitative variety of *metonymy,* called *synecdoche,* which is based on the rule *pars pro toto*" ("Connotatior and Denotation in Film Art," *Sign—Language—Culture,* ed. A. J. Greimas, et al. [The Hague-Paris: Mouton, 1970], p. 416).
55. Sandro Briosi (*Marinetti* [Florence: Il castoro, 1969], p. 32) has commented on the iconic aspect of Marinetti's interest in onomatopoeia without seeing the extent to which it is also typographically one of his dominant concerns.
56. Burks here seems to mistake "interpretant" for "interpreter."
57. "Icon, Index, and Symbol," *Philosophy and Phenomenological Research,* IX (1948-9), 575f.
58. See Fitzgerald's critique of Burks' argument (*op. cit.,* p. 51).
59. Samuel Levin, *Linguistic Structures in Poetry* (The Hague-Paris: Mouton, 1966), p. 51.
60. Milan: Edizioni futuriste di "Poesia," 1919, p. 103.
61. *The Word as Image,* p. 132.
62. "Pioniere der Grafik in Italien/Italian Pioneers of Graphic Design/Pionniers du Graphisme en Italie," *Neue Grafik—New Graphic Design—Graphisme Actuel,* III (October 1959), 9.
63. *Semiology,* p. 9.
64. *Peirce's Theory of Signs as Foundation for Pragmatism,* p. 53.
65. *The Simplest Mathematics, Collected Works,* IV, 1933, p. 341.
66. *Semiology,* p. 26.
67. *Teoria e invenzione futurista,* p. 60.
68. *Teoria e invenzione futurista,* p. 68.
69. Giovanni Paolo Lomazzo, for instance, in his *Trattato dell'arte della pittura* (Milan, 1584), praises the dynamic shape of the flame which "has a cone or sharp point with which it seems to divide the air." See: *Literary Sources of Art History: An Anthology of Texts from Theophilus to Goethe* (Princeton: Princeton University Press, 1947), p. 261. Many of the Gestalt implications of such structures are investigaged in Rudolf Arnheim's *Art and Visual Perception: A Psychology of the Creative Eye* (London: Faber & Faber, 1954), pp. 18, 74, 401-409.
70. Milan: Edizioni futuriste di "Poesia," 1914, p. 319. My italics.
71. "Piani plastici come espansione sferica nello spazio," *Lacerba,* I, 6 (1913), 53f.
72. "La pittura dei suoni, rumori e odori," *Archivi del futurismo,* I, pp. 74f.
73. *Teoria e invenzione futurista,* p. 60.
74. "Les exposants au public," *Archivi del futurismo,* I, p. 105. My italics.

75. *Pittura scultura futuriste,* p. 211. My italics.
76. Franco Russoli recently referred with some justification to "le symbolisme des lignes-forces" in his "Diffusion et héritage culturel de l'art futuriste," *Futurisme. 1909-1916,* catalog of the 1973 exhibition held at the Musée National d'Art Moderne (Paris: Editions des Musées Nationaux, 1973), p. 38.
77. The studies are reproduced in Marianne W. Martin, *Futurist Art and Theory: 1909-1915* (Oxford: Clarendon Press, 1968), figs. 129-131.
78. "On Iconic Signs," *Recherches sur les Systèmes signifiants: Symposium de Varsovie 1968,* ed. J. Rey-Debove (The Hague-Paris: Mouton, 1973), pp. 487f.
79. *Semiology,* p. 40.
80. *Teoria e invenzione futurista,* p. 67.
81. *Op. cit.,* p. 18.
82. *Asymmetrical Typography* (London: Faber & Faber, 1967), p. 44.
83. Nevertheless, the layout's compromise between linearity and synoptic effect led to a great deal of confusion about how the title actually should be read. For details, see De Maria's introduction to Marinetti's *Teoria e invenzione futurista,* CXVI.
84. *Asymmetrical Typography,* p. 62.
85. Printed in *Lacerba,* II, 13 (1914), 202.
86. Bense adumbrates the process of "superisation" into "sign-shapes and sign-structures or supersigns" in his *Einführung in die informations theroretische Ästhetik* (p. 11).
87. *VS,* IV, 3 (1973), 106. In particular, Krampen points to the findings in H. Stachowiak, "Gedanken zu einer allgemeinen Theorie der Modelle," *Studium generale,* XVIII (1965), 432-463; G. Klaus & M. Buhr, *Philosophisches Wörterbuch* (Berlin: Das europäische Buch, 1970); and A. A. Moles, "Théorie informationelle du schéma," *Schéma et schématisation,* I (1968), 22-29.
88. "The History of Art as the History of Semantic Structures," *Sign—Language—Culture,* p. 524.
89. Morris writes: "By 'pragmatics' is designated the science of the relation of signs to their interpreters. . . . It is a sufficiently accurate characterization of pragmatics to say that it deals with the biotic aspects of semiotics, that is, with all the psychological, biological, and sociological phenomena which occur in the function of signs" (p. 30).