INTUITION AND CERTITUDE

Abstract Painting Considered as a Language

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ABSTRACT

Using structuralist and post-structuralist theory this thesis responds affirmatively to the question of whether or not abstract painting is a language.

It is divided into two sections. Chapters 1 and 2 provide a theoretical model of abstract painting analogous to verbal language as a doubly-articulated discursive system dependent on a material structure and a metalinguistic level of interpretation, described as a process of "downward causation".

The subject of meaning in abstract painting is divided into two broad "fields" - the field of sense, occupied by stimuli and signals, and the field of meaning, occupied by signs and symbols. In order to sustain this theory of meaning an open model of language is developed by drawing freely on the semiological theories of Saussure, Peirce, Hjelmslev, Benveniste, Barthes, and Eco and the philosophical writings of Merleau-Ponty, Gadamer and Derrida.

Chapters 3 to 6 are a study of the work of Piet Mondrian, Theo Van Doesburg, Georges Vantongerloo, Max Bill, Richard Lohse, and Victor Vasarely by the light of this theoretical model. It is shown how Mondrian's abstract work established certain signifying elements and their principles of combination and how the artists who followed on after him can be read as both refinements of that initial method of painting and as thematised responses to extra-pictorial concerns.

If only one could make people understand that language is like mathematical formulae. Both constitute a world unto themselves, both only play with themselves and express their own mysterious nature.

Novalis

The fact that we cannot manage to achieve more than an unstable grasp of reality doubtless gives the measure of our present alienation: we constantly drift between the object and its demystification, powerless to render its wholeness. For if we penetrate the object, we liberate it, but we destroy it; and if we acknowledge its full weight, we respect it, but we restore it to a state which is still mystified. It would seem that we are condemned for some time yet always to speak excessively about reality. This is probably because ideologism and its opposite are types of behaviour which are still magical, terrorized, blinded and fascinated by the split in the social world. And yet, this is what we must seek: a reconciliation between reality and men, between description and explanation, between object and knowledge.

Roland Barthes

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TABLE OF CONTENTS

PREFACE

Any number of things can be done with a painting. It can be used as an index of sociological phenomena or to hide a stain on a wall. It all depends on the user's intentions. In adopting a semiological approach to the subject of abstract painting I have committed myself to analysing painting as a sign or collection of signs.

What interests me in this thesis is the intelligibility of abstract painting, where nothing is depicted and hence there are no decipherable denotata. My concern is with the viability of the idea of a language of abstract painting, with the nature of such a language and hence to what purpose this language is used. Defining what is meant by "language" when the term has such a loose usage - from verbal language to the language of the stars - becomes a necessary first stage of inquiry. Thus I have developed a semiological model of language based upon the structure of ordinary verbal language and used it to see how abstract painting is like such a language.

Whilst this thesis is far from a "poetic" response to abstract painting, in the Heideggerean sense of allowing the work to "be" on its own terms, on the other hand, no response to any object is, I believe, purely aesthetic, to use that word in the formalist sense. We may make a distinction between understanding as an other-than-verbal grasp of meaning and explanation as a verbal, exegetical closure upon it, and it is with justice that the imaginative arts and intellectual ref lection are ranged as the opposing poles of this distinction. However it is a mistake to reduce thought to verbal intellection alone. Any kind of comprehension presupposes order and ordering and so some kind of sign system. In attempting to theorize the workings of such a system with respect to abstract painting I have

emphasized its socialized function as a discipline and discourse and demonstrated the way in which the formal features of a sample of abstract painting have related to the thematic concerns of a sociolectal universe.

Whilst I have attempted to be as thorough as possible, given my self-imposed restraints, I by no means believe that what follows constitutes the last word on the subject of the language of abstract painting but rather offer it as a point of departure for other researchers.

Writing about a visual work of art means representing one medium by a very different other, effectively converting larger into smaller and thus necessarily leaving over some remainder. Being trained as an art historian I am prone to see paintings as signs - of stylistic categories, historical periods and individual hands, and so on - that is, as vehicles of meaning, substitutes rather than objects in their own right. In conducting my research I am also habitually looking at paintings as photographic reproductions in which the signifying features of painting - scale, colour, texture and other material characteristics - are transformed into signs of those characteristics themselves. Arguably this has influenced my emphasis on the function of the sign type in painting over its actual signifying token. However one of my fundamental theoretical assumptions in this study is that all consciousnes is mediated through collectively-held epistemological schemata, or to put it more simply, in knowing anything the general rules over the particular. Although some individual works are analysed here closely, nothing in this thesis is about an actual experience of viewing a particular painting, of actually dialoguing with a particular work. But then linguistic analysis is not the same thing as engaging in a verbal exchange.

INTRODUCTION

The Modernist tradition of painting charts an evolution from Cézanne through Cubism to Pollock and from thence to Stella and Minimalism. Its aim was understood to be the realization of painting's essential properties - in Greenberg's words "the flat surface, the shape of the support, the properties of pigment".[1] This materialist interpretation of painting ultimately implies rejection of the metaphysics of meaning. Stella's declaration that: "My painting is based on the fact that only what can be seen there *is* there"[2] typifies the realist ideology of post-painterly abstraction.

Influential as this view was during the 1960s and 70s, it now appears that the artistic interest in abstract painting lies not with pigment and canvas "as such", but rather with how these materials function as bearers of meaning. One of the principal claims of this study is that it is this, largely metaphoric, function which determines, or at least guides to determination, the physical appearance of any painting. From the semiotic, or semiological, perspective of this study, a painting is a motivated sign, or to use Saussure's term for it, a symbol.[3]

Any painting, whether figurative or abstract, is a cultural object. By virtue of both its relations to the discourse of painting and the wider implications of painting in a socio-cultural world it is impossible for abstract painting to escape the web of meaning and to

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[1] Cited Sandler 1978, p.311.

[2] Sandler 1978, p.309.

[3] On the relationship between "semiotic" and "semiological" see Sebeok, 1975, pp.9-17; on the "semiotics of the object", see Barthes, 1988, pp.179-190. On Saussure's sign/symbol distinction see Saussure 1978, p.68.

exist in an extra- or pre-interpretive state outside verbal language. From an epistemological viewpoint, any object can be known only if and as interpreted. This means the inevitable transformation of material objects into signs, or more properly, sign functions, through intrepretive acts which implicate these objects in a symbolic universe. In the final analysis this means that the abstract painting is an object-text, the term "text" being used in Barthes' sense of a "methodological field" which is "radically symbolic".[4] My intention in this study is to demonstrate how this condition makes abstract painting like a language.

The supposed pre-linguistic in-itselfness of the Modernist interpretation of abstract painting is already a signified of a signifier, which is the painting considered as a sensory presentation. "Pure materiality" is a meaning rather than a non-meaning, functioning as a sign in opposition to the illusionistic representations of figurative painting. (Thus Stella's statement cited above is as polemical as it is philosophical) The signifying language of figuration is disguised by the rhetoric of resemblance with its ultimate appeal to the "natural attitude" of the viewer that the world and its objects are self-evident entities cognizable "as such" prior to any process of interpretation.[5] In this respect, the formalist approach to abstract painting, in asserting its value-free, objective characteristics is, ironically, a variant of the positivist assumptions underpinning realist representationalism.

The normative status of figurative painting is embodied in the traditional relegation of abstraction to a "non-representational" (and hence inferior) status relative to figuration's primary (and more desirable) mode of the representational. Yet if, as Nelson Goodman persuasively argues, conventionality lies at the heart of representation then might not

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[4] See Barthes 1972, p.153-164.

[5] On the natural attitude see Husserl 1967, pp.101-111.

representational and non-representational images be two different forms of signification, both utilizing conventional signifying systems?[6]

What surely is fundamentally important in representation is not an essentialist original-copy relationship but the functioning of one or more of the three Peircean types of sign relations, of which resemblance is only one form (that of iconicity).[7] Abstract (and figurative) paintings are "textualized" objects, dependent upon conventionalized relations which enable the reading of absent meaning from present expression (or rather certain characteristics of the work objectified as expressive features). In this respect abstract painting is simply a continuation of the dramatic Modernist shift, initiated with Analytical Cubism, to the viewer as the source of meaning and an understanding of painting as an object of knowledge by virtue of its placement within a system and way of knowing. Its signifieds are not denotata but, in Umberto Eco's words, context-dependent "content nebulae", "clusters or clouds of meaning" which are not simply coded equivalents to the material givens but (in the terms of Hjelmslev, a linguist whose ideas have been important to Eco), "expression plane/content plane correlations".[8]

To this study, what is more important than the identification of meaning, whether intentional or inferred, is the issue of how meaning or even the possibility of meaning is derivable from the formal characteristics of an abstract painting. In other words it is primarily concerned with the intelligibility of abstract painting. This leads inevitably to a concentration on system and structure. The language and meaning of abstract painting depend on both metasystematic and metalinguistic processes of interpretation and upon the,

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[6] See Goodman 1988.

[7] This "post-structuralist" axiom has been argued for innumerable times already. Cf. Bryson 1983, Bann 1989, Lyotard 1991.

[8] Eco 1984, pp.161-3.

usually unarticulated, omnipresence of language as a continuous intersubjective matrix structuring perception and infusing the visual with the verbal.

Perception has discriminatory abilities far in excess of verbal distinctions, yet this specificity, insofar as it is intelligible, is necessarily semiotic and thus language-like. That is, it can only function as a way of knowing in relation to an intersubjective cognitive field with a systematic base. This is, of course, a highly complex phenomenon, both in terms of its implication in a social order and its phenomenological specificity and no attempt will be made here to reproduce that specificity. The word "general" re-appears throughout this study and this is the level on which it operates, no less with respect to its account of perception.

Any response to the issue of the linguistic status of abstract painting depends upon the model of language used. Despite the totalizing claims of any particular model of verbal language (and there are a variety of competing models[9]), the general relation between linguistics as a science and language as its object of study is not resolved and we do not have a set of axiomatic criteria by which to assess linguistic status. In this study, in testing the linguistic analogy, the comparison is being made between painting as a semiotic activity and language in the philosophical, rather than philological, sense. That is, not to any actual language.

Saussure's Course in General Linguistics is central here because it has become the dominant paradigm for all extensions of the linguistic model to non-linguistic phenomena, particularly in the arts and the few references to the present topic in this respect are largely in its terms. However, in making use of the Saussurean model, it needs to be remembered that the Course is not a completed, unitary, or even an autograph text but a secondhand

[9] See Beaugrande, 1991.

transcription of a series of lectures in which Saussure was exploring the nature of language and sign systems.[10] Semiology, in other words, no more than language, has a single model. To at least make possible a beginning to this investigation I have adopted the Bally and Sechahaye version in Wade Baskin's English translation as "Saussure's theory". Although I have set out the key points of this theory at the outset of Chapter 1, I do not give a detailed explanation of it and assume some degree of familiarity with it (and semiotic theory in general) on the part of the reader.

As is well known, for Saussure verbal language was, hypothetically, to be only the clearest exemplar of sign systems in general, and semiology their "science".[11] Semiology after Saussure, most notably in the work of Barthes, has tended to invert this relationship, making language the model for all human symbolizing activity.[12] Linguists, and this includes Saussureans, commonly maintain that application of the term language in this way is at best metaphorical but not scientific.[13] The value judgement underpinning this distinction is immediately apparent. One of my central theoretical claims is that this ideal distinction is inapplicable to "natural" language. The distinction between the verbal and the non-verbal is not necessarily the same as a linguistic/non-linguistic opposition. With respect to art, the "anti-language" argument is that art expresses rather than communicates and has an interpretable, rather than a causal, meaning. Yet how can meaning be expressed unless it is communicated and how can a relationship be judged to be causal if

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[10] Todorov, 1982, pp254-270 conducts an analysis of Saussure's interpretation of a case of glossolalia and demonstrates the deficiencies of his rationalist, a-contextual concept of meaning as well as illuminating a "hardening" of Saussure's position on language as the semiological paradigm on the part of the editors of the Course, Bally and Sechehaye.

[11] Saussure, 1974, p.16.

[12] See particularly, Barthes, 1977, p.11, and also Derrida 1976, p 51.

[13] Cf. Mounin 1985, pp.60 & 135; Benveniste 1985, pp.228-246.

it is not interpreted to be so? If the inversion of the language/sign system relation tends to obscure the difference between linguistic and non-linguistic sign systems, the distinction between language proper and metaphorical applications of the term tends to avoid the common characteristics which initially led Saussure to group them together.

From the post-structuralist perspective of the 1990's, Saussure's a-contextual, idealist model of language, grounded in the concerns of scientific linguistics, indeed, in the traditional presuppositions of 19th century scientificity in general, seems inadequate in many respects. Criticism has been philosophical rather than technically linguistic, addressed to presuppositions of the univocality of the (transcendent) signified, the logocentric concern with the identity, rather than the function of the sign and thus the distinction between form and content, the assumption of the equivalence or identicality of signifier and signified, and the over-confident distinction between motivated and conventional and the conflation of the latter with "arbitrariness". These issues will be discussed in Chapter 1.

In response to these inadequacies, the sign theories of C.S. Peirce and Louis Hjelmslev have been called upon where they have seemed relevant to the present subject. Although terminology varies between these authors, there is a general concordance on the binary nature of the sign. Thus, although I use their principal terms, signifier/signified (Saussure), representamen/ interpretant (Peirce), expression plane/content plane (Hjelmslev), variably, as their specific inflections seem most appropriate, this should not produce any serious theoretical difficulties.

My initial concern in Chapters 1 and 2 is to develop a systematic approach to both abstract painting in general and verbal language which would substantially justify an analogy between the two and yet which is also appropriate to the specificities of painting

as a non-instrumental, aesthetic and artistic visual language. To this purpose I have described abstract painting as an object-text mediated by three interdependent semantic levels - (self)denotation, connotation and metalanguage - which are semiotically related to four different types of signs - stimuli, signals, signs and symbols.

Table 1 gives a schematic representation of the main terms and their relations.

Perceptual Level	**Verbal Language**	**Visual Language**	**Semantic Level**
Symbols	Sentences	Polyadic Images	Metalanguage
Signs	Words	Monadic Images	Connotation
Signals	Phonemes/ Morphemes	Constitutive Elements	
Stimuli	Distinctive Features	Distinctive Features	Self-Denotation

Table 1. A Systematic Correlation of Verbal and Visual Language

Although separated for the purposes of analysis, all divisions are vertically and horizontally interdependent. Also, although I am claiming a good degree of horizontal concordance between the different aspects of this model, these alignments should not be regarded as absolute. The distinction between polyadic and monadic images is one between relational and non-relational abstraction. To what extent this amounts to a distinction between words and sentences is debatable. Even a monadic painting tends to finds its equivalent in something like "here is material presentation x", rather than simply

"x".[14] As we will only be looking at the relational type of abstract painting any possible difficulty in this respect will not be an issue. In addition, the distinction between sentences and words, symbols and signs, metalanguage and connotation is of a very high degree of permeability, which is why it is distinguished from other horizontal divisions by a broken line.

Whilst this is highly simplified model of language, both visual and verbal, it is the very reductiveness and the generality of its scope which permits us to grasp a communality where another kind of comparison may lead us to conclude otherwise.

The genesis of this study began with Stephen Bann's article published in 1980 and elliptically entitled "Abstract Art - A Language? " which, in sketching out an affirmative response to the question of whether or not abstract art is a language, suggested that the answer depended upon understanding art as a discourse and therefore requiring: "not simply a principle of 'synchronic' comparison, which will establish a relationship between individual works considered outside historical sequence, but a 'diachronic' principle which traces the morphology, or logic of the evolution of forms in time".[15] This recommendation has been followed here.

The substantive part of the study, Chapters 3 to 6, will explore particular and related practices (meaning both the painting practice and its framing theory) in the terms of the analysis laid out in Chapters 1 and 2, in order to demonstrate their linguistic character. That is, to show how these material languages were constructed and correlated to symbolic meaning according to the relevant historical discursive norms, norms which,

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[14] Cf. Metz 1974, pp.57 & 88.

[15] Bann, 1980, p.129.

recognized as "style", changed according to conflicting contextual demands and ideological values, or in other words, representational requirements. Although the artists discussed, beginning with Mondrian and ending with Vasarely, belong to the "Constructivist" and hence, structuralist, tradition of abstract painting, they were chosen for reasons of personal preference, not because they would neatly corroborate a semiological model. The model I have developed here is, I believe, applicable to any kind of abstract painting or set of abstract paintings.

Chapter 1

THE FIELD OF MEANING

Criticising the Saussurean Model of Language

The pivot of the Saussurean account of language, the sign, is a dyad composed of an arbitrarily related signifier (a sound-image) and signified (a concept). Neither half of the sign can exist independently, a sound-image must have a concept and a concept must have a sound-image. Each linguistic element (phonological, phonemic, morphemic etc), gains its identity and value solely by its relation to other elements in a purely differential language system, determined by paradigmatic (contrastive) and syntagmatic (combinatory) relations at the level of both the signifier and the signified. Language is thus theoretically determined as "a self-contained whole and principle of classification".[1] In order to maintain this autonomy and so realize his aspiration to make the study of language into a science, Saussure eliminated its diachronic dimension and restricted his model to its synchronic structure, *langue*, a non-substantial form, independent of the real conditions of its production and reception, the aspect of speech, or *parole*.

This is the nub of Saussure's theory of language and although we can adopt it as the starting point of our own inquiry, it immediately calls for revision. Thus, whilst Saussure sought to maintain an absolute methodological distinction between the aspects of *langue* and *parole*, he himself acknowledged that in fact they were interdependent:

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[1] Saussure 1978 p.9.

"language [*langue*] is necessary if speaking [*parole*] is to be intelligible and produce all its effects; but speaking is necessary for the establishment of language, and historically its actuality always comes first".[2] Recognition of this interdependence will be central to our understanding of language proper (*langage*).

Although for Saussure the correlation between signifier and signified was arbitrary he recognized the difficulty this implied for semiology, a general theory of signs, which would include non-arbitrary, "natural" or motivated signs, or what he called symbols. However, this difficulty is a function of the positing of a strict opposition between signs and symbols, an opposition which, once again, Saussure recognized was in actuality not sustainable since: "...every means of expression used in society is based, in principle, on collective behaviour or what amounts to the same thing - on convention".[3] It is indeed conventionality (a term preferable to "arbitrariness", which implies randomness) which characterizes the semiological function of both verbal and non-verbal signs. Any communication or expression of meaning, motivated or otherwise, depends upon some kind of code or rule-governed system of conventions which enable meaning to be interpreted as expressed and so communicated.[4]

The traditional concept of visual "language" is that its meaning is motivated by the natural resemblance of its signs to their referents, allowing an automatic and natural transition from sign to meaning, the latter being guaranteed by the presence of an

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[2] Saussure 1978, p.18

[3] Saussure 1978, p.68.

[4] The term "code" is an important one in the discourse of semiology and is variously used to refer either to the connection between a formal system and its meaning or to the "empty" set of distinctive features [phonemes] and their combinatory rules at the level of the material expression. Eco's distinction between these two uses as a distinction between code (correlated) and system (uncorrelated) will be used here. The latter is a rule-governed organization of signifiers on a single plane, the former joins different systems. Thus all coded systems, maintain a set of double relations, systematic within one plane, whether syntactic or semantic, and signifying, correlating one plane to another. See Eco 1984, p.170.

autonomous referent external to the sign.[5] However this is not the case. Nelson Goodman, for example, observes that the representation of a unicorn, for instance, does not depend upon the existence of an actual referent but upon a conventional sign correlation.[6] Goodman extends this characteristic to representation in general, arguing for its textual determination and language-like condition rather than its likeness to independent denotata. Whilst this is on the one hand an overstatement insofar as it rejects all possibility of resemblance, something which, however difficult to justify philosophically, has a real relevance to visual signs that it does not have to verbal ones, on the other hand it is a valuable reminder of the omnipresence of convention in our reading of pictorial images.

The necessity of interpretation in any form of knowing means that the distinction between verbal language and visual imagery as one between communication as a referential sign and expression as an interpretable symbol is undermined. This distinction, made for example by the Saussurean linguist Georges Mounin, is based on a reductive notion of communication as the one-to-one transmission of an intended message based upon the existence of a finite set of discrete, re-iterable units that "...are stable and defined once and for all".[7]

Saussure assumed an unproblematical connection between signifier and signified, a relationship represented metaphorically by the image of two identical sides of a sheet of paper, the conceptual aspect or meaning of the sign being treated as a self-evidently-coded complement to the signifier.[8] Yet if meaning in language is dependent upon familiarity

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[5] Eg. Panofsky's natural and expressional meanings Panofsky 1962, pp3-6.

[6] Goodman 1988, p.226-228.

[7] Mounin 1985, p.109.

[8] Saussure 1978, pp.113-115.

with the way in which it is being used, a claim which is hardly disputable beyond the most meagre of exchanges, then Saussure's essentially mechanistic model, in being restricted to the systematic basis of language, independent of any context, offers only a partial and incomplete account of language. Indeed, Saussure's theory is largely confined to the pre-semantic and "atomistic" phonemic and morphemic levels of language.

As Emile Benveniste has acknowledged, the problem of meaning is intrinsic to Saussure's definition of *la langue*, as a "system of signs that expresses (or evokes) ideas",[9] since meaning is not simply the function of a rule-governed combinatory but is itself the macro-determinative motivating force which purposively integrates the formally operative constituent elements of that combinatory. Each linguistic element(phonological, phonemic, morphemic etc) is definable only because of the differential function it performs in the level directly above it.[10] Thus, "plog" is not a word in English, not because it is morphologically incorrect, but because it cannot function to form a meaningful phrase. This irreversible combinatory principle operates at all levels of language, all choices along both the syntagmatic and paradigmatic axes being determined by it. Thus Benveniste (with perhaps an implicit swipe at Chomskyan linguistics) maintains that: "[i]nstead of skirting the issue of 'meaning' and imagining complicated - and inoperable - procedures in order to leave it out of play while focussing only on formal features, it is better to recognize frankly that it is an indispensable condition of linguistic analysis".[11]

The implications of this lead us beyond the word, the upper limit of Saussure's analytic concerns, to the sentence and so beyond the self-enclosed synchronic system of

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[9] Saussure 1967, pp.45-46.

[10] Benveniste 1971, pp.106-111.

[11] Benveniste 1971, p.104.

langue to the diachronic, social fact of discourse. Thus, according to Benveniste, taking up Saussure's implication: "It is in discourse, realized in sentences, that language (*langue*) is formed and takes shape. There language begins",[12] and Roland Barthes, extending Saussure's semiological ideas, points out in relation to verbal language, that it is the level of discourse which provides "the great signifying unities" which make language possible.[13] In this increasingly complex and decreasingly specifiable field Hjelmslev's distinction between the (material) expression and (conceptual) content planes of the sign is generally more useful, as is Peirce's subject-oriented distinction between the sign and its interpretant, as neither are restricted by the implied univocality and atomism of Saussure's signifier/signified coupling.[14] Both are concepts which have passed into general semiotic discourse and they will reappear regularly in this study.

Of course we would want to extend this view of language to abstract painting. Indeed abstract painting probably only communicates in terms of such " great signifying unities" as is implied when Michel Seuphor observes that: "...each canvas of Mondrian says: it is", and Vantongerloo claims that: "my conception proclaims unity, the truth".[15] In the absence of the more specific designations of figurative painting, that may seem to come closer to satisfying the denotative requirements of traditional linguistics, such "unities" provide macro-coded correlates to the material or expression plane of the abstract painting.

Against the traditional belief in the hermeneutic meaning of the work of art,

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[12] Benveniste 1971, p.111.

[13] Barthes 1972b, p11.

[14] See Hjelmslev 1961, pp.47-60 & Peirce 1960, Vol.2, Chaps.2 and 5.

[15] Seuphor, 1971, p.80; Petersen, 1968, Vol. 1, p.487.

Jacques Derrida is well-known for having demonstrated that the essential characteristic of the iterability of the sign involves it in an unceasing inter-textualized *différance* or network of different meanings that defer its univocal deliverance as an intended message.[16] It is only by virtue of this characteristic, which is independent of any expressive intent, that the sign comes to be a bearer of meaning. Hence the signified meaning of a sign cannot be a self-present identity, but rather, must itself be a signifier, a value in a differential system, definable only in terms of other signifiers of which it bears a trace. The trace serves as a "threading" device which enables the interpreter to relate a particular enunciation to something else which gives it meaning.

Derrida may be understood here as cross-fertilizing Saussure's theory of the sign with Peirce's principle of "infinite semiosis". According to the latter, the sign is anything "which determines something else (its *interpretant*) to refer to an object to which itself refers (its *object*) in the same way, the interpretant becoming in turn a sign, and so on *ad infinitum*".[17] Meaning is, beyond the most minimal of exchanges, unstable, unless, in Peirce's oft-quoted words "...it be that all thought comes to an abrupt and final end in death".[18] The infinite exchange of signs (or signifiers) undermines Saussure's static, closed and disembodied model of language, independent of the "accidental" of its enunciation, and as already mentioned, puts the elusive problem of meaning at the heart of his system, precisely because it had been carried into it as an unproblematic given (as

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[16] See Derrida 1976, esp. Chap. 2.

[17] Peirce 1960, 2.303. Insofar as the Peircean triadic and the Saussurean dyadic sign are both infinitely semiotic they are both "polyadic". See Greenlee 1973, p.111 for further discussion of this

[18] Cited Liszka 1980, p.301.

the concept or signified).[19] This characteristic of language is even more insistently the case in the aesthetic use of language which requires interpretive intervention on the part of its audience.

The "internal" system of semantically empty signifiers that constitute an abstract painting is sustained by what is "external" to it, the verbal exposition which stands in a metasystematic or (allowing for the moment that the internal system is a language in the Saussurean sense) metalinguistic relation to it, fixing for it certain necessary interpretive parameters. It is this interdependence of inside and outside, which occurs as soon as the language system is used to mean and thus brought in relation to something other than itself, which constitutes the language of abstract painting. This content is supplementary to the material presentation in the Derridean sense of both filling a deficiency (the system's semantic emptiness) and being additional (to its material self-exemplification), but in its inevitability it renders impossible the "purity" of painting in the Greenbergian sense or its self-evident reality as is suggested by Stella.[20]

This brief discussion has set the scene for a model of language as a conventionally-determined sign system, one which transgresses the "absolute opposition" which Saussure wished to maintain between both the synchronic and diachronic dimensions of language (a distinction which he himself admitted was difficult to maintain beyond the level of sound[21]) and the levels of *langue* and *parole*. Thus a study of pictorial language in general and abstract painting in particular may proceed less encumbered by the onus of

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[19] In principle the infinite semiocity of the sign was recognized by Saussure, although as a "paradoxical" feature since "on the one hand the concept seems to be the counterpart of the sound-image, and on the other hand the sign itself is in turn the counterpart of the other signs of the language". Saussure 1978, p.114.

[20] Derrida 1976, pp.269-316.

[21] See Saussure 1978, p.141.

establishing fixed elements and rules of combination "stable and defined once and for all", in emulation of the supposed equivalent in verbal language. Unquestionably this presents a problem to formal analysis since in Benveniste's words it "contains signs but is not itself a sign" and constitutes "a whole which is not reducible to the sum of its parts".[22] However it needs to be remembered that *langue* as a static, closed sign system, is a methodological abstraction from language proper which is a living symbolic phenomenon whose extra-systematic relationality is necessary to the possibility of the system itself. Any study of language which ignores this actuality is considerably limited and the onus is upon analysis to develop more flexible working terms, not to limit language to that which conforms to its terms.

If abstract painting has an analogous form to that of verbal language then, it will be found at the level of the interpretation-dependent sentence or text rather than the word as a coded sign and thus in an open set of discursive determinations. There will be found the answer to the question of its meaning and mode of communication.

A Broader Model of Language, Meaning, and Communication

The impoverishment occasioned by the distinction between the propositional form of language and its meaning-invested actuality, if not able to be resolved in traditional linguistic analysis, which essentially adheres to an analytically idealizing sender-receiver "message" model, can be overcome in a philosophical context by loosening the definition of systematicality and producing a broader working model of language. Here, for example, Maurice Merleau-Ponty, reflecting the influence of Saussure, but making a positive feature of what was for the latter a problem, maintains that speech "...is not suited point by point

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[22] Saussure 1978, p.105-109.

to what is expressed: each element is not specific and obtains its linguistic existence only from what it receives from the others and the modulation it introduces to the rest of the system. It is the whole which possesses meaning not each part".[23]

Understood in this way, language is sustained by a "depth" of understanding which involves more than simply a shared context but rather the totality of the being-in-the world of the parties involved in the communicative exchange. Hence the expressive function of language is necessarily fulfilled by what is not given as a formal characteristic of any verbal proposition, and which is not analytically determinable "once and for all". As Roman Jakobson has observed: "...continual shifts in the system of artistic values imply continual shifts in the evolution of different phenomena of art".[24] This is an important caveat to any expectation that linguistic meaning should be a universal bill of exchange whose value is fixed by the intention of its producer.

Beyond the limited instance of the instrumental use of language and highly restricted semiotic systems such as traffic signs, rather than being a denotative machine, whose operations are determined by a priori (grammatical) rules, language depends upon a faculty to form systems of communication out of semioticized material (sounds, gestures, pigment etc.) whether or not this is governed by pre-determined linguistic rules.

In the case of abstract painting, unlike the printed text, because of the primacy of its materiality as a non-instrumental object of attention, there is an even higher degree of flexibility with respect to meaning and its communication precisely because of the complexity of the information it presents. As will be discussed further in the next chapter, the material plane provides the viewer with the ground for the creation of new signs and

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[23] Merleau-Ponty 1973, p.28. Cf, also Volosinov 1973 and Ehrenzweig's "syncretistic" theory of perception, Ehrenzweig 1968.

[24] Jakobson 1971b, p.755.

hence new interpretants. This is much less a possibility for poetry, Hans-Georg Gadamer being substantially correct when he states that: "A genuinely non-objective poetry would simply be gibberish".[25]

Umberto Eco points out that:

> the universe of visual communication reminds us that we communicate both on the basis of *strong* codes (such as language) and indeed *very strong* ones (such as the Morse code) and on the basis of *weak* codes, which are barely defined and continuously changing, and in which the free variants prevail over the pertinent features.[26]

Even in the case of ordinary verbal language, Eco argues, and once again. I believe rightly, that if language is to be called a code then : "...what was called the 'code' is thus better viewed as a *complex network of sub-codes* which goes far beyond such categories as 'grammar' however comprehensive they may be".[27]

In full language, not only is there a constant movement from language use to the language system and back again along the diachronic axis, destabilizing the expressive form and displacing formally-codified signifieds, but the synchronic text of any utterance is so intertextualised by contingent experiential impurities (infinitesimal, even sub-liminal), cultural, sub-cultural and personal understandings and resonances, as to make it impossible to reduce meaning to a monosemic signification. Yet if "overdetermined" and being constituted by a complex interpretive processes, the linguistic exchange, when effective,

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[25] Gadamer 1991, p.69.

[26] Eco 1976 p.214.

[27] Eco 1976, pp125-129 & see Harris 1981, esp.pp.54-85, who shows that the more flexible linguistic factor of "grammatical indeterminacy" is embedded within overly prescriptive assumptions of traditional linguistics and that grammaticality is not an inherent and objective feature of language but dependent upon meaning which is in turn dependent upon contextualized interpretation.

is simultaneously simple in the immediacy and totality of its communication. In this it is probably as much, if not more so, an intuition rather than a determinate concept.

In the artistic use of language denotative reference is not the primary function. Indeed, artistic use of language demonstrates that reference is not even necessary to verbal communication. Utterances can signify as a whole even if their individual elements cannot be deciphered as signification, given that there is an appropriate metalinguistic frame of understanding and, to a certain extent, adherence to syntactical precedents. This is particularly the case with poetry and especially with Symbolist poetry, that of Mallarmé being the classic example of this. The crucial role of Symbolist poetic practice and aesthetics for the Russian avant-garde's move to abstraction is well-known but it was also important for the painting at which we are about to look, albeit in a less direct and more moderate fashion.

Both Gadamer and Merleau-Ponty have argued with great conviction that successful communication occurs not when the intended message is transferred from sender to receiver in its supposed integrity but when each receiver takes up the other's "linguistic gesture" and carries it further in the dialogic exchange.[28] The emphasis here is on the creative intervention of the interlocutor and this is a salutary corrective to the presumption of the simple coding of the sign which dominates Saussure's linguistic theory. Yet there is an implication here which goes beyond their objective.

Obviously communication depends upon the "good-will" of the participants in the communicative exchange as well as on the extent to which their sociolect is shared, but even here the "humanistic" view of language, which both Gadamer and Merleau-Ponty

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[28] See Gadamer 1991, Merleau-Ponty 1968 and esp. the Gadamer-Derrida debate in Michelfelder and Palmer 1988.

represent, tends to presume the integrity of the signified and to depreciate the disseminatory power of the signifier. In actuality, to cite Eco once again: "The creation of a complete semantic structure *must remain a mere regulative hypothesis*".[29] So motile and multiplicitous is the functioning of language that it is finally compared by Eco to a box of marbles, the box representing "*the site of a combinational interplay*, of a highly indeterminate game".[30]

The aesthetic text above all is exemplary of the playfulness of language which, as Eco observes: "...continuously transforms its denotation into new connotations; none of its items stop at their first interpretant, contents are never received for their own sake but rather as the sign-vehicle for something else. If the idiolect were rendered metalinguistically explicit, the reading of the work would be nothing more than a correct decoding".[31] Eco here is writing about the verbal text. Abstract painting as a visual text is generally of a lower degree of complexity, however these remarks are substantially applicable to it, the players being in this case the creative artist and the re-creative viewer.

The consequence of this appre ciation of the playfulness of language is to give priority to the text as form, and meaning not as intended but interpreted. The meaning of an utterance does not depend upon recognition of discrete, re-iterable morphemic units with consensually-fixed significations but rather upon grasping it in an interpretive response which is necessary to its proper completion. Pragmatically this metalinguistic act is not likely to be articulated as such. As Peirce points out, "associational compulsion" or

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[29] Eco 1976, p.128.

[30] Eco 1976, p.127 and cf. Kristeva who compares speech to a "heterogenous, destructive causality, 1980, p.27.

[31] Eco 1976, p.274.

the continuous processes of habituation is sufficient to ground the function of the sign.[32] As in the case of verbal language, meaning in abstract painting is not a function of the formal presentation "as such" but rather a contextualized interpretation which makes that presentation symbolic of its interpretation. Interpretation establishes significant elements and quite often, syntactical rules of combination. This means that not only does artistic meaning have a variety of interpretants but that these interpretants may be contrary or contradictory at both the semantic and the syntactic levels without thereby ceasing to be a language.

Communication is not a total phantom but it is less of a three phase (ie.a sender-message-receiver) transmission than a two-by-two phase process, (ie. a sender-message, message-receiver relationship) in which there is an unstoppable *différance* within the process of communication itself. Polysemy is not the extreme limit but rather the semiotic condition of communication, whether we consider this in terms of the symbol or the sign. For our purposes, the systematic and relatively autonomous semiotic enclosure of painting as a discipline establishes precedents, parameters and normative expectations which work on and within an artist's idiolect (an individual practice), to establish internal coherence whilst relating it (both affirmatively and oppositionally) to other idiolects, whether individual works, oeuvres or styles, within the immediate and distant history of painting as well as to extra-pictorial fields of meaning, whether intended or not. When these idiolects constitute a recognized collective approach to painting they constitute a sociolect.[33] These in turn are dialectal (and dialectical) variants of a much broader language of abstract painting which is in turn related to the larger discursive field of "painting" as a

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[32] See Peirce 1960, 5.492 & 2.305; Greenlee 1973, p.86.

[33] See Eco 1976 p.272, or Barthes 1977, pp.221-222 on these terms.

historically-defined mode of symbolic communication.

No matter how labyrinthine in actuality, the structure of communication persists, as the primacy of the model of spoken language in understanding visual art as a communicative gesture indicates. Art history, even of the "new" variety, as a metalanguage, continues to propose the artist as an originary source and validation of the work of art.[34] The substitution of a Foucauldian "author-function" for the traditional biographical author is nevertheless always predicated on already-possessed knowledge of an individual agent, even if this acts as a kind of suppressed supplement. And of course the work themselves, as signed and dated, serve as indices of authorial subjectivity and a disciplinary context implying a development, or at least diachronic, relationality.

As discourse, abstract painting may be approached in terms of Benveniste's well-known distinction, which applies to both written and oral forms of language, between the enunciative modalities of *discours* and *histoire*, which are defined according to whether or not they make explicit the role of the utterer. This in turn is based on the distinction between the énoncé, the propositional syntagm, and its enunciation, the process which creates the énoncé. Whilst with *histoire*, Benveniste hyperbolically claims, "no-one speaks", *discours* alludes to the presence of "a speaker and a hearer, and in the speaker, the intention of influencing the other in some way".[35] The speaker here is an internal referent manifested by "a game of specific forms" whilst the hearer/interlocutor is "real or imagined, individual or collective".[36]

In painting this function is fulfilled by the viewer whose own re-creative

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[34] Cf. Shiff 1992.

[35] Benveniste 1971, p.209.

[36] Benveniste 1971, p.85.

enunciatory response to the painting relates it to differing discursive contexts. In this way a dialogic communicative bridge is constituted between the artist (the historical actor or agent whose prior intention to communicate the viewer presupposes) and the viewer (the apprehending subject anticipated by the artist). This is of course not to subscribe to an intentionalist argument on meaning, for in language, as Merleau-Ponty puts it: "One does not know what one is saying, one knows after one has said it".[37]

The aptness of Benveniste's ideas for the present topic is revealed in his description of the characteristic use of the perfect tense in *discours* as a " tense for the one who relates the facts as a witness, as a participant; it is thus also the tense that will be chosen by whoever wishes to make the reported event ring vividly in our ears and to link it to the present".[38] What is the artist if not the witness to the act of painting and what is the function of painting if not to ring vividly in the present of its audience? Abstract expressionism is almost entirely justified by this function. Contrawise a minimization of expressivity and a tendency towards *histoire* occurs when the appearance of the *enoncé* is clearly determined by the system itself as, for example, is the case in the work of Richard Lohse.

Even the discursive emphasis on the self-evidencing opacity of painterly material can be understood as producing "unspoken" but nevertheless visually-implicit demonstratives and relative qualifiers - paraphrasable as "here is this colour and that shape" and so on, which both assert an enunciative position and call for an enunciative response. The material of painting does not simply present itself but is presented with a specific orientation towards its audience which is conventionally construed as an

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[37] Merleau Ponty 1973, p.46.

[38] Benveniste 1971, p.210.

intentional sign. Each work manifests, or is interpreted as manifesting, enunciatory differences (facture, pentimenti, and so on) employing formal codes of painting (discussed in the next chapter) which are semiologically correlated to conceptual and expressive differences. These features become rich indicators of the artist's personal address, providing like Jakobson's shifters, indexical symbols of the process of enunciation, or to invoke Barthes, an *écriture*.[39] It is these enunciative features which distinguish abstract art from "mere" decoration.

Derrida has demonstrated the interdependence of speech and writing in verbal language and thus it is not surprising that any use of the notion of visual language will be likely to refer to both these dimensions without necessarily identifying with either one exclusively.[40] Spoken language is undoubtedly the primary referent in Benvenistean theory, as it is in Saussure's. It dominates our conception of painting as communication or utterance since, like speech, and unlike writing, discourse about painting regularly refers to a level of distinctive material features (which in verbal language Benveniste calls merisms), which are vital to the interpretation of enunciative meaning.[41]

It is also common to refer to our "reading" of a painting. This suggests a text or document, that is, something which is both necessarily relational and accessible to recursive and repeated readings. Although this in turn suggests the relevance of the post-structuralist notion of the text, in the context of painting we are much closer to an idea of an originary subject than is the case with either the printed text or even the written

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[39] Jakobson 1971, p.132; Barthes 1981 pp.9-13 & Barthes 1977.

[40] Derrida 1976, esp.Chaps 1 & 2.

[41] Benveniste 1971, p.102.

manuscript.[42] Thus connoisseurial concern with recognition of the "hand" of the artist ideally relates it to the incarnated body of spoken language rather than simply identifying this with writing in a graphological sense.

Downward Causation

The mis-understanding of meaning as an entity constituted from atoms of signification is epistemically related to the Newtonian view of the physical universe as an ideal, closed linear system. As post-Saussurean linguistics has tended towards the adoption of an "open" model of language, twentieth century science has moved towards the view that "far-from-equilibrium open non-linear systems with a high degree of feedback" are in fact more generally-valid models of reality than the relatively specialized instances of closed systems studied in thermodynamics and statistical mechanics.[43]

The view that in language the whole has primary organizational role in relation to its parts is paralleled in the field of philosophy of biology by the concept of "downward causation".[44] According to this theory: "all processes at the lower level of a hierarchy are restrained by, and act in conformity to, the laws of the higher levels".[45] The compatability of this idea with Benveniste's stance on the importance of the factor of meaning in linguistic analysis is obvious and it provides us with a useful concept with which to conduct our own analysis.

Downward causation is a concept which posits an indirect, non-empiricist theory

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[42] Cf. Phillipson 1985, esp. pp.99-124.

[43] Davies 1989, p.142.

[44] See Campbell 1974.

[45] Campbell 1974, p.180.

of causation which is macro-determinative and operates on a necessarily global and ultimately universal level. This is a richer process than simply one in which any given element is affected by its environment. Rather, the very reality of the elements is dependent upon the universe of which it is a constituent. Not only is the whole greater than the parts and in fact determines them, but the "parts" themselves are idealized abstractions, constructed by the observer in the process of analysis from such holistic experiences or events.

In contrast, "upward causation" is symptomatic of the deterministic presumptions of traditional physics, applicable not only to referential theories of language, but also to the atomistic, mechanistic implications of Saussurean linguistics, insofar as they both accord primacy to the designatory function and to any mimetic aesthetic which posits the same processes as a source of meaning.

Whilst pragmatically co-existing with the reciprocal action of upward causation, downward causation has logical and experiential priority over it, just as connotation has over denotation, as we shall consider shortly, and the text over individual linguistic units (whether phonemes or words), as the integrative determinator of meaning. It is this kind of holistic relationship to which Merleau-Ponty refers to when he writes that:"...meaning impregnates the canvas more than the canvas expresses meaning".[46] This makes impossible any simple materialist reading of a painting which seeks to limit the meaning of the painting to "what's really there", as Stella's claim, referred to at the outset, asserts.

Downward causation is "irreversible". Whereas in the realist painting there is a reversibility based on likeness so that the viewer can move from copy to original and back again without significant loss, this is not possible in abstract painting What the viewer

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[46] Merleau Ponty 1973, p.61.

brings to the painting is always more than what the painting gives to the viewer. In this context, downward causation means an increase in semantic value.

Symbol and Sign

Any satisfactory semiological model of language must take into account meaning as an "open" semiotic relation. We have so far argued that the Saussurean notion of the sign is inadequate to a proper understanding of linguistic communication and that, as Eco puts it: "The notion of the sign is untenable when confused with those of significant units and fixed correlations: there are on the contrary "signs" that result from the correlation of an imprecise expressive texture and convey a vast and unanalysable portion of content; and there are expressive devices that convey content according to different contexts...".[47] This leads us to Saussure's distinction between the symbol and the sign. Symbols are distinguished from signs in Saussurean theory by their motivated character, symbolic meaning being motivated by "the rudiment of a natural bond between the signifier and the signified".[48] We have already recognized the undeniable importance of the material plane in painting and hence implicity at least, its status as a motivated sign or symbol.

The complexity of the sign/symbol nexus at a theoretical level is demonstrated by the fact that for Peirce, inverting Saussure's position, the symbol is a sign which is not motivated, unlike qualisigns (icons) and sinsigns (indexes). (See also below pp.56-58) What constitutes the symbolic relation for Peirce is precisely the absence of an existential link and instead the operation of a conventional relationship. However an indexical or iconic sign (the Saussurean "symbol") as relational terms depend upon some kind of

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[47] Eco 1976, p.216.

[48] Saussure 1978, p.68.

semiotic convention, as much as it may usually, through sheer habituation, be presumed to be "natural". All sign relations are relations between signs and interpretants rather than between signs and objects apprehended "in themselves". The potential semantic wealth of symbols lies not with their inherent features, which may be quite banal, but the interpretive response to them. As Derrida points out (in relation to Lévi-Strauss and the concept of *mana*), the richness of the symbol as a signifier is a function of its emptiness, a richness which is "the result of a lack which must be *supplemented*".[49] Meaning is dependent upon the symbolizing competence of the viewer and thus, upon acquired knowledge. The relationship between symbolic object and symbolic meaning is one of macro-coding. This semiotic principle includes emotional responses since the recognition of an emotion by a subject is an interpretation of a qualisign which is the feeling.[50] The conventional and the motivated, and thus the categories of sign and symbol, merge in the process of symbolization. Although the unmotivated/motivated distinction is common to both Saussure and Peirce, the Saussurean alignment of this under the headings of sign and symbol seems to accord more closely with common usage than that of Peirce and I will adhere to it throughout.

Taking another, but very relevant, approach to this distinction, we can distinguish symbols from signs by a difference in degree of specifiability of meaning. In Eco's words, symbols are characterized by "their vagueness, their openness, their fruitful ineffectiveness to express a 'final' meaning, so that with symbols and by symbols one indicates what is always *beyond* one's reach".[51] In its condition of interpretive openness the symbol

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[49] Derrida 1977, p.262-4.

[50] See Greenlee 1973 pp.51-98 for more extended arguments of these points.

[51] Eco 1984, p.130.

becomes a kind of motivated or materially-based equivalent of the Peircean (and Derridean) version of the infinitely semiotic sign, and to Barthes' semiological notion of the "Text". This goes beyond the "moderately symbolic" understanding of it as intentional and filiated and so a reasonably determinable signification. Rather, writes Barthes: "the Text is radically symbolic: a work conceived, perceived and received in its integrally symbolic nature", whose meaning can only be experienced in "an activity of production", an activity which is characterized by him with the notion of play.[52]

The distinction between sign and symbol is not one of identity but function. Thus the colour red in the code of traffic signals is an unequivocal sign to stop, in the costume of a flamenco dancer it is symbolic of the myth of Spanishness and so on. A sign occurs when a signifier is correlated to closed, exclusive and a determinable signified, and a "symbol" when a signifier is correlated to an open and inclusive content-nebula. A symbolic function is a way of thinking about or seeing something, it is not an inherent feature of the object itself.[53]

It may be that metalinguistically a symbol is reduced to a sign. Very clear instances of this occur when, for example the black, white and red colour triad is coded to Russian Constructivism or the abstract expressionist brush-stroke to artistic spontaneity. The constitution of signs also occurs at the formal level when such distinctive features become repeated compositional devices. Such signs are re-iterable types, independent of their material signifiers. As such these signs become in turn signifiers available for correlation

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[52] Barthes 1977, pp158-9. Cf. also Gadamer 1991, esp pp.22-53 where art is described as play which demands a "playing along with" on the part of the audience. Damisch 1984 pp.157-172 applies the concept on a different level when he uses the metaphor of chess to describe the complex of conventions which are permitted to artists playing the game of "Painting".

[53] Eco 1984, pp.156-162.

in other semantic fields, as was the case for example with the use made by Mondrian's American followers of the Neo-Plastic orthogonal opposition. As we shall discuss more fully in Chapter 2, insofar as any material aspect of a painting is identified as a distinctive feature, it is conceptually digitalized and becomes a sign. This is the basis for a "motivated" interpretation of the material presentation which, if not totally transforming the material into a verbal equivalent, is ultimately related to what that equivalent means within the semantic universe of the viewer. Motivation then, both initiates an interpretation and limits it.

This brings attention the role of the "beholder's share" and so takes us back to the notion of the text and dialogue and the play of language, whether verbal or visual. This is radically different from Saussure's suggestion that language is like a game of chess (although he implies that the term "grammar" is only metaphorically applicable in this comparison).[54] That Saussure understood language (*langue*) as a mechanical combinatory is evident from the fact that he distinguished it from chess on one count, that the latter is an intentional activity and thus: " In order to make the game of chess seem at every point like the functioning of a language, one would have to imagine an unconscious or unintelligent player".[55]

Of course the analogy holds only because Saussure's model of language is concerned with the empty synchronic form of language as an entirely rule-governed "closed" system. It is inadequate to an account of actual, rule-creative language use. Unlike chess, verbal language is not diachronically stable at either the syntactic or semantic levels. Verbal language is an "open" system which changes through both

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[54] Saussure 1978, pp.22-3 and cf. Revzin 1977 & Jameson 1972, pp21-22.

[55] Saussure 1978, p.89.

systematic and thematic transformation, and at least in its spoken form (*parole*), unlike chess, its material plane is understood as significant. This applies also to abstract painting, the open/closed distinction mapping onto that already made between the symbol and the sign.[56] As shall be discussed below an abstract artist makes choices, consciously and unconsciously, from a relatively stable number of elements and combines them in surface structures which, however broadly, are systematically determined by, and determinative of, meaning.

Producing Meaning

The relations of the expression plane of the sign to its content plane or interpretant can be hierarchized in terms of Barthes' distinction between the levels of denotation, which is a first order of signification, connotation, which is a second order of meaning, "whose plane of expression is itself constituted by a signifying system [i.e. denotation]...", and a metalanguage "whose plane of content is itself constituted by a signifying system". A metalanguage is in other words "a semiotics of a semiotics".[57]

The metalinguistic level and operation is a symbolic interpretation and structuration of a language object, the interpreter introjecting an interpretant which he/she has projected onto and into the object of interpretation (psychologically this process probably occurs immediately and unselfconsciously) in terms of the processes of upward and downward causation, already discussed. The metalinguistic, downwardly-causing level functions to integrate the possible connotative readings of a (self-)denotative sign into a field of meaning whether this be to artistic or other discourses (social history, psychoanalysis etc.)

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[56] On the open/closed distinction see Eco 1975.

[57] Barthes 1977b, pp.89-90.

or experiential competences in inferential processes which Eco, using a Peircean theoretical concept, has described as overcoded, undercoded and creative abduction.[58] These judgements are always comparative. They generate semiotic relations by applying an already existing rule (overcoding), selecting a rule to be applied from an equiprobable range of alternatives (undercoding), or inventing a rule *ex novo* to account for an unprecedented interpretive situation (abduction).

There are two overlapping uses of the denotation/connotation distinction which may be confused in the context of pictorial representation. The traditional way of using the distinction is to treat denotation as the defining set of determining characteristics and to regard connotations as a peripheral set of free floating associations. However more correct is the alternative usage in which it is connotation which is the set of characteristics which define a denotative term. Thus, for example, a piano is defined as a musical instrument with metal strings struck by hammers worked by levers from a keyboard and pedals regulating the sounds made. Denotation denotes membership of such a set (a particular piano which may be more or less conformable to the connotative set). Connotation is therefore logically if not psychologically prior to denotation since no sign can denote membership of a class unless there is a set of characteristics which describe it.[59]

Figurative painting depends upon the latter usage, and for this reason is able to comfortably unite mythical beasts and pseudo-historical heroes with objects which really exist, such as alder trees and waterfalls in its "mimetic" representations which are not, as has already been pointed out, "copies" of some pre-existent "original". It is the connotative set which is responsible for the representational function. What any image

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[58] Eco 1984, pp.39-43.

[59] Goodrich 1988, pp. 49-50.

connotes to the viewer is its effective denotation. What the painting denotes is not necessarily some thing external to it (although it may be) but rather its own "membership of the class determined by those characteristics signified" by the signifier.[60] These are culturally-relative connotative or descriptive setsIn this respect the painting is primarily a Peircean qualisign (an icon) and only secondarily sin-significant (an index).

It is common to withhold linguistic status from abstract painting because of the absence of the denotative aspect. However an abstract painting can be legitimately considered as a combination of self-denoting signifiers which are necessarily located within characterising scales with their connotative sets.

(Self-)Denotation

The absence of the coded equivalence of signifier and signified, or denotation in abstract painting for many theorists would be cause to exclude it from the linguistic paradigm since it removes the possibility of the communication of any collectively agreed upon or determinable message, although it may be granted (non-linguistic) stylistic or expressive meaning.[61] Whilst I have countered these objections by arguing that particularly in the artistic context, determinability is not a necessary linguistic feature, the equivalent to the denotative level of verbal language is in fact provided for by the material characteristics of the painting itself. These material characteristics are self-exemplifying or self-representing, or in other words, self-denoting exemplifiers of themselves. Nelson Goodman's account of this form of motivated symbolic reference maintains that when a

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[60] Goodrich 1988, pp.49-50. Gadamer argues for something similar in his discussion of mimetic representation as "letting something be there", Gadamer 1991, p.119 and see also his essay "Art and Imitation" in the same volume, pp 92-104.

[61] See Bann 1980 where the "anti-linguistic" arguments of Gombrich and Lévi-Strauss are considered.

sample and what it is a sample of are identical then that which it is a sample of denotes the sample (this would apply not only to evident material properties but qualities such as rhythm, balance etc). To put it another way, when the signifier exemplifies the signified, the signified denotes the signifier. In the case of visual self-exemplification we are able to "see" that which is signified, since the conceptual aspect, although literally invisible, is presented simultaneously with its material aspect.

An abstract painting presents elements which are samples and thus signs of what they are (their actual material characteristics with their connotative sets). Since only some of the manifold properties which the material object literally possesses are selected as exemplified (we are not, for example, concerned with the chemical composition of the pigments concerned) already here we are dealing not with simple material data but with interpretants "cut" from a physical analog or continuum. The material presentation is not meaningful, does not refer "in itself" but is interpreted as a sign referring to and conveying information about (and therefore denoting) itself. As a sign, the material element is the token of its ideal type or a sign in which type and token are identical.[62] What is self-exemplified need have no antecedently coded denotation, it literally creates its own category. In this respect, whilst it may be unnamed or unnameable, it will nevertheless in some way be related to other like things with antecedent connotative values and from which it gains its differential identity. Thus, the self-exemplifying signifier functions to represent an object (the material itself) and to determine an interpretant. Not only does this necessarily involve a conventional relationship but since the sign is infinitely semiotic, one which is infinitely disseminated "outwards" to the connotative level. Self-

[62] Wittgenstein emphasizes the function of the sample (which for him is also a conventional cut from a continuous field) as a standard to which all instances are compared but which itself cannot be judged according to yet another standard. Wittgenstein 1972, p.25 para.50.

exemplification or self-denotation is at least partially the foundation for the interpretation of abstract painting.

Meaning and connotation

I have argued that to function denotatively, something must have a connotative set which defines it. Although any connotation (a socially-determined value) is supplementary to the material presentation "as such", connotations supply a primary level of general meaning relative to the more specific, secondary level of metalinguistic interpretation. The connotative level, although characterized by a high degree of indeterminacy, is as much experientially grounded as consciously acquired, if not more so. Unlike connotation in a verbal context in which there is at least an equivalence in the kind of associative link (concept to concept), visual connotation is further complexified by its physiological/sensorial nature which can only have approximate verbal descriptives (and which includes kinaesthetic and possibly synaesthetic responses). Any painting involves the manipulation of the connotative possibilities of its material plane, an artist making rule-governed or rule-creative choices (on the paradigmatic axis) and combinations (on the syntagmatic) axis.

Colours are primary signifiers of the visual world and are generally the clearest examples of artistic elements which have well-developed connotative nebulae. Some colours are semantically richer than others. For example red, black, white and blue have large connotative sets, orange and violet much more limited ones. The colour categories, which are ideal types, are modified or sub-divided by other categories - particularly tone and saturation, creating "light" and "dark" subdivisions, but colour must always exist in some kind of material manifestation with a shape, size, texture, and so on.

Any individual painting will establish some kind of functional relationship between its significant features whether of equivalence or dominance and sub-dominance and endow them with differential value. Meaning is determined by the whole painting and its discursive relations, not its elements considered in themselves as Kandinsky attempted to formulate with his expressive theory of abstraction. What is semantically expressive in one work may be only syncategorematically relational in another. The use of the black line in Mondrian's Neo-Plasticism, for example, is intentionally different from that of his American followers and its black/white opposition is of a different connotative order from the "same" opposition in, for example, an Elsworth Kelly.

It is common for abstract painting to be thought of in terms of a universal sensorial "language". Yet the extent to which responses to colours, forms and so on have a universal physiological grounding is not clearly determinable. Undoubtedly some responses, for example the fading of images, are the involuntary function of the neurology of human optics and so are pre-symbolic. However the physiological merges inextricably into the phenomenal. Culture ultimately determines the connotative nebulae of this level whilst the individual work itself suggests the relevance of particular interpretive operations. Black may diminish actual light stimulation of the optic nerves but whether or not this is read as an effect of sobriety, for instance, depends on how it is used in the pictorial context, not its inherent features "as such". (This rebuts Lévi-Strauss's distinction between abstract painting and music on the grounds that colour is natural whereas sound, as opposed to noise, is cultural. Lévi-Strauss here had tachist abstraction in mind, which is of course coded to the natural).[63]

Berlin and Kay's cross-cultural, anthropological study of colour names demonstrates

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[63] Lévi-Strauss 1970, p.19

that technologically complex societies show a greater tendency to nomological categorization of colour, whereas technologically more simple societies show a greater dependence on comparative descriptions such as "an earth like colour".[64] This does not however indicate any decrease in symbolic capacity.

We can distinguish between connotations and associations or between constitutive and accidental connotations, remembering that these may operate concurrently in any real engagement with a painting. Associations or accidental connotations are those connotations which have relevance only by virtue of a circumstantial interpretive association. Constitutive connotations are those meanings which remain generally stable across interpretive situations by virtue of intersubjective and historically-determined agreement. These meanings (geometry as scientific and objective, for example), as already mentioned, are in turn determined by certain metalinguistic interpretations which bring into play different codes and sub-codes.

Thus, the writings (and other mediatory strategies, the use of titles, diagrammatic models, photography and so on) by the abstract painters at whom we are about to look function as metalinguistic mediations of their radically disruptive material production, answering to a culturally-established requirement for rational, purposeful comprehensibility in visual imagery. In the Modernist context, lacking the authority of a unified belief system, authorial interpretation could only be one interpretation amongst many. In the work at which we are about to look, such interpretation had a considerable collective underpinning but there were also interpretive differences. It is precisely these similarities and differences that constitute the discourse of abstract painting.

To illustrate the process of reading abstract painting we can take as an example

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[64] Berlin & Kay 1969, pp.13-14.

Peter Gay's reading of Mondrian's work in terms of Freudian theory. Here the formal features of Mondrian's painting engage a variety of connotative nebulae from which are undercoded possible interpretants such as constriction, regulation, confinement. These are in turn subjected to metalinguistically-related inferences determined by psychoanalytic theory and unarticulated assumptions about visual representation and psycho-biographical history. The "meaning" of Neo-Plasticism according to Gay thus emerges as neurotic aberration vis-a-vis the sub-textual norm of figuration, based upon the operation of two pre-determined fore-structures, the popular conception of Mondrian as a "painter of squares" and Freudian theory, which together enable Gay to perceive Mondrian's paintings as "rigid, graceless, distant, in short, desexualized".[65]

This rather critical summary is not intended to deny the validity of Gay's reading. It is possible to read the series of formal reductions through which Mondrian's pre-abstract painting evolves into Neo-Plasticism in terms of the psychoanalytic processes of condensation and displacement, each transitional stage embodying a mastering fantasy of meaning, invested and re-invested with emotional affects. But it should be remembered that these are interpreted, not hermeneutic meanings. Thus Mark Cheetham's reading of Neo-Plasticism takes a similar fraction of the connotative nebula of geometric form as Gay but under-codes it to a totalitarian ethic and aesthetic.[66] The paintings themselves are unable to resist these projective and introjective relations. They can only be countered by other meta-linguistic operations. We shall return to Gay's interpretation again in Chapter 3.

The relationship between self-denotation and connotation effectively constitutes a

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[65] Gay 1976, p.221.

[66] Cheetham 1991

doubly-articulated structure. Double articulation is a relationship, which is commonly regarded as fundamental to language. In verbal language it usually refers to the relationship between re-iterable, but "empty", non-signifying phonemes and morphemes, and signifying words.[67] As has already been discussed, even with verbal language, there need not be an absolute emptiness of phonemic elements since poetry or any kind of text, spoken or written, which foregrounds the materially-motivated quality of language clearly demonstrates the meaning and sense-determining value of the phonemic level. Here, and this is characteristic of the aesthetic text in general, necessarily, difference in the signifier involves a difference in the signified, as the one is the functional correlate of the other.

The absence of specificity of what is communicated is only problematic insofar as a monosemic determination is presupposed. This is essentially a non-artistic requirement and does not exclude semiotic status. In fact, as already discussed, it is the factor of semantic indeterminacy which indicates symbolic and artistic meaning. As Peirce points out, a sign need not necessarily be an intellectual entity but rather may be a modification of consciousness: "Whenever we think, we have present to the consciousness some feeling, image, conception or other representation, which serves as a sign."[68] This involves a tri-partite process in which a particular presentation is recognised (this being more complex than simply identified), it is understood as a token of its type and it is correlated to some "modification" of consciousness.

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[67] This is one of the forms which the concept of double articulation assumes. Cf. Kristeva in Sebeok, 1975, p.47 who uses it to refer to the signifier/signified relation & 1980 , p.222 where she uses it refers to difference between "subjective" and "objective" meaning. The core idea of the idea in its various applications is a conventional bonding of separable elements - a structure which permits an infinite variety of correlations. Double articulation is by no means an invariable characteristic of sign systems. Eco 1979, pp.232-234 lists a number of systems with changeable levels, or only one level of articulation (eg. various kinds of traffic signals, air road and sea), or none at all.

[68] Peirce 1960, 5.283.

Style as Metalanguage

Style is a notion which implies a formal logic and value independent of any imitative function. It is the most important coding principle for abstract painting, establishing norms and conventions which enable the maintenance and continuation of discursive positions. It is in this respect a classificatory and articulatory system, whether categorical (for example, Constructivism as opposed to Expressionism) or individual (Suetin as opposed to Malevich), although programmatically its function is rhetorical and ideological (the elocutionary notion of "good style").

Style necessarily connects a painting to some kind of external body of knowledge. In the case of abstract painting, at least in our sample, this is programmatically declared by the artist's manifestos and writings. The concept of style metalinguistically determines the connotative meaning of its constitutive elements and stabilizes the interpretive choices or codings.[69] It functions as an overcoding mechanism, signifying the appropriate reading of meaning from the level of sense (the "syntactical" organization of distinctive features, to be discussed in the next chapter), an analytic distinction which experientially is not only effaced immediately in the reading process but is conceptually and psychologically reversed so that it appears that the meaning is caused by the material presentation itself.

Between 1890 and 1920, the theory of "style for style's sake" in the writings of Endell, Semper, Fiedler, Lipps, Reigl, Wölfflin, Worringer and others (these in turn indebted to a history of ideas extending back to Kant and Moritz at the end of the 18th century) developed an evolutionary proto-formalist character for a concept of style dominated by "norms, rules, prescripts and even interdictions" based on the assumption of

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[69] See Chatman 1971, also Sauerlander 1983.

a universal creative force and psychological laws.[70] Unquestionably this meta-individualistic and non-mimetic notion of style, as well as the related notion of the *Gesamkunstwerk*, was both directly and indirectly crucial to the theoretical development of pioneer abstraction as a collectively-based practice.

This notion of style is central to Mondrian's attempt to theoretically validate pure form and colour as meaningful: "In painting style must be made manifest - it cannot be expressed through subject matter or representation". Underpinning it, he claimed, was a "timeless content" which "makes every style *style*".[71] Transcending individual expression, such style "manifests the (*one*) determination", it "emphasizes the specialized but generalized idea of its epoch".[72] We shall see that this idea of style is sustained to a remarkable degree throughout the work at which we are about to look.

As an identifiably personal form of expression, style also tends towards an enunciative meaning. However the personal dimension of style can be transformed into its own set of norms. Once Mondrian, for instance, in his own work had established a set of stylistic norms with Neo-Plasticism, symbolic meanings for Van Doesburg's Counter-compositions could be generated by means of a (re-)interpretive judgement. Based on the connotations of the real diagonal which introduce an implied movement, relative to the axial opposition of Neo-Plastic paintings a concern with the representation of movement is readily inferable. However within the content-nebulae of "movement" are also suggestions of the unstable, off-balance and thus an active, even boisterous, dispute of

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[70] Sauerlander 1983, p. 255. See Sauerlander 1983, esp. pp.262-265 and Morgan 1992. See also Crary 1990 for changes in the theories of scientific optics which could provide a conceptual underpinning and theoretical rationalization for abstract painting.

[71] Holtzman 1987, p.31

[72] Holtzman 1987, p.70, fn.m.and p.235.

Mondrian's "classical" aesthetic. Similarly, the stylistic/expressive meaning of a late Mondrian or late Rothko, for example, may be intra and inter-stylistically situating them against their earlier works or against each other in terms of their syntactical manipulation of common elements, say relation of motif to support, discreteness of colour boundaries and so forth.

Because of the prior systematicality of the visual field (at which we are now about to look) each style of painting does not so much create its own language, in the sense in which Arabic and English are different languages, as its own dialect, (sociolect or idiolect), which is a concatenation of competing sub-codes and meta-codes, systematic and unsystematic elements, that constitute the self-reflexive core of the language of painting, which I will call the level or field of sense.

Chapter 2

THE FIELD OF SENSE

An abstract painting functions as the bearer of meaning due to its implication within the fields of connotation and interpretation. However a consequence of this semioticization of the material object is that any particular reading of meaning "into" an abstract painting, although a structurally-necessary completion of its role as a "text", if regarded as both conventional and contingent may appear, as Barthes puts it, as "a desperate filling-in...of the emptiness of language".[1] But what of language as a thing-in-itself, and of the material structure of the abstract painting as a self-focussing play of signifiers apparently independent of their appropriation by downwardly-causing interpretation? Whilst I called the externally-focussed and thetic relations of abstract painting the field of meaning, the structure of the inwardly-focussed, "empty" visual signifiers I will call the field of sense. It is the field of sense that provides abstract artists with formal alternatives for the purposes of constituting content (signs). Here the materials and methods of representation perceived "in themselves" as self-denoting icons are the means of making evident that which is to be represented.

The term "sense" is particularly apposite to describe this dimension of abstract painting since it suggests both the sensory and the intelligible. Equally the language of sense is dependent upon both its materiality and its underlying structure which is, like the Saussurean *langue*, systematic, synchronous and immanent. An abstract painting "in-itself"

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[1] Barthes 1978, p.70.

can be considered as a visual stimuli-source or stimulus-object whose apprehension and interpretation involves the assimilation of three types of analytically-separable but simultaneously active types of sign-function. These are stimuli, signals and symbols/signs.[2] These different types of signs, which are distinguishable in terms of their increasing "arbitrariness" and semantic complexity are broadly sub-dividable into the field of sense, occupied by stimuli and signals, and the field of meaning, occupied by symbols and signs, with which we have already dealt. Both fields are conditional upon each other and are inscribed with symbolic values. Before being able to describe the systematic structure and operation of the field of sense we must consider the role of analog and digital relations in communication systems.

Analog and Digital Relations

Analog relations are real, physical, and unique, continuous quantities and qualities and are composed of non-discrete "more or less" relationships (for example the variable width of a drawn line).[3] Digital relations are made up of logical distinctions and oppositions (vertical/horizontal, black/white and so on) introduced into the "analog infinities of information".[4] There are binary oppositions in analog systems for example, presence/absence but they are not as clear as binary distinctions in digital systems. Verbal descriptions of material objects are digitalizations of analog systems. The organization of a continuous field of information into discrete units, for instance dividing and organizing

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[2] This schema is taken from Volosinov 1973, p.88 it is also used in modified form by Eco 1979, p.48. Cf. Kristeva' "triple register" of colour, which is simultaneously physiological, psychological and representational. See Kristeva 1980, pp.216-222.

[3] Wilden 1980, pp.155-156.

[4] Wilden 1980, p.501.

the continuous colour spectrum into a discrete colour scale, is an abstractive process which decreases information, making redundant or suspending available information provided by the analog system which conveys more information than its function as a sign vehicle in the digital system requires. Thus, Berlin and Kay observe that colours are defined in terms of "category foci" and, not surprisingly, that confusion in naming colours increases towards the category boundaries.[5] Gestalt psychology has identified comparable processes in relation to form and spatial discrimination.[6]

Different styles or practices of abstract painting are distinguished by different relationships to the analog/digital division which can be aligned with our earlier distinction between motivated and arbitrary relation. Some styles of abstraction, tachism for example, are more analog and less apparently system-based than the geometric styles which foreground their systematic adherence to a limited range of units. These differences imply different symbolic readings. Any painting which seeks to assert its unique physical qualities will foreground analog over digital relations, a painting which is intended to project an objective, scientific appearance will be appropriately digitalized. As real communicative exchanges employ both digital and analog relations, so do paintings. (We can draw a parallel between analog and digital relations and our earlier discussion of the interdependence of speech and writing in language). Even in the case of Neo-Plasticism in which the stylistically distinctive elements are digitalized, some elements, (for example, texture, facture) are not, varying a-systematically from painting to painting (these are enunciative features which function indexically in the reading of expressive meaning).

Whilst analog relationships are not strictly oppositional, they are signs or sign-

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[5] Berlin & Kay 1969, pp.13-14.

[6] See Krech 1969.

functions, which are, as has been established, implicated within a differential system which allows them to be comprehensible. Whether we are considering digital oppositions or analog differences any single identifiable element, as a function or value, implies the existence of an articulatory relational system whether conscious or unconscious, which gives it its identity. Thus the material phenomenon cannot be opposed to the cultural sign in a sensible/ intelligible opposition, even if it has involuntary effects upon a subject.

A digital system enables analysis of the analog object by the formulation of discrete types with identifiable and recognizable features. Digital distinctions, unlike analog differences are synchronically fixed and independent of any actual material presentation. In the case of spoken verbal language, which I have argued is more usually preferred to written language as a linguistic model, each phoneme is an organization of distinctive features "cut" from a sound continuum.[7] Each actual vocal utterance is composed of token instances of ideal, systematically-defined sign-types. This is similarly the case for abstract painting, even though the systematic base is far more open and potentially may apply only to a single painting which embodies it (though this is not the case in the works which concern us here).

Although the literally invisible sign-types are superimposed on the material presentation, they are fundamental to the latter in that they supply the epistemological mechanism for its discrimination into "parts" or from its surroundings and in this sense are logically prior to them. This does not mean simply the subsumption of the material presentation under a pre-established category but an inferential judgement in which an appropriate category of which it is a token has to be discovered from the presentation itself. This process of abductive judgement constitutes and occurs within a code-creative semiotic situation in which the spectator has to decide what content should

[7] Cf.Hjelmslev 1961, pp.50-57 on the expression plane "purport".

be correlated to a given expression.[8] Invariant logical distinctions are only identifiable by reference to variant specific properties, without which they are meaningless (the same comments applies to relations between the elements, eg. rhythm, balance, complexity and so on).

Even though the field of sense has been distinguished from meaning, this is not equivalent to an analog/digital distinction since the structure of sign functions on which it is based - stimuli, signals and symbols and signs - is already a digitalization of the analog presentation, just as earlier it was argued that motivated signs are always to some extent invested with conventional significance. In other words, just as the visual is interwoven with the verbal, so is the field of sense interwoven with that of meaning.

Types, Tokens and Material Scales

A particular material (analog) presentation is not identical with its logical (digital) category. The latter is a sign, for example, a colour name (although, as mentioned, a sign need not have a designatory label) and hence a re-presentation of the presentation "in itself", proposing that a particular colour-presentation occupies a position within a defining qualitative set or scale, or combination of such, which establishes the differential value of that presentation.[9] These sign-names are types which may be embodied in an infinite number of tokens, all of which are identified or recognized by referring to their type names. The sign-type confers signhood on its token which is thereby a sign of a sign. In painting, colour and form have long been established as the two major compositional

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[8] See Eco 1984, pp.34-40.

[9] Cf. Morgan's suggestion that musical understanding works through a perceiving, "instinctively or otherwise" of a fundamentally spatial relationship between musical surface and stable background which is therefore as equally important as the compositional surface. Morgan 1980, p.265.

elements and verbal language has a relatively comprehensive range of names with which to identify them, accommodating type-approximations with qualified terms such as "reddish " or "squarish" or category hybrids such as "blue-green", more adequate descriptions being of a motivated, comparative nature, for example, "granite grey", "cloud-shaped" and so on.

Other sets and scales tend to be of a simpler nature, establishing broad differentiations and distinctions within an analog continuum - for example, "rough" as opposed to "smooth" for texture, "matt" as opposed to "gloss" for brilliance and so on. These positions and their relations need not be discretely determinable (say the red-blue relation in purple) or limitable to a finite set in order to constitute a language, since with painting we are dealing with a different, more open order of communication to that of ordinary verbal language.

The type/token relation is comparable to that between *langue* and *parole* in full language, the sign-types (the synchronically-finite system) being empty (positional and oppositional) categories, if considered apart from their material realization and their contextual meaning, whilst the use of the sign-tokens provides the material basis for a communicative exchange.

Saussure's theory of the sign describes a relationship between sound images and concepts, not sound images and material objects. Whilst it is well-recognized that the latter are epistemologically bracketed, somewhat analogously to the Husserlian phenomenological reduction, we need also to recall Saussure's observation that a signifier: "is not the material sound, a purely physical thing, but the psychological imprint of the sound, the impression it makes on our senses. The sound-image is sensory, and if I happen to call it 'material', it is only in that sense, and only by way of opposing it, to the

other term of the association the concept, which is generally more abstract".[10]

Despite the psychological basis of Saussure's theory of language he was well aware, as we have already seen, that language and the sign are social facts which elude and exceed the individual will. Derrida states the difference neatly when he describes the sound-image as that which: "...is heard, not the sound heard but the being-heard of the sound. Being heard is structurally phenomenal and belongs to an order radically dissimilar to that of the real sound in the world". This *différance* introduces "a subtle but absolutely decisive heterogeneity" into the empirical and means that any intended object is inscribed in and determined by a re-iterable system.[11] This observation applies as much to being seen as being heard. Both are linguistically and symbolically mediated ways of knowing. In this sense any abstract painting, as an intentional object, is always different to and differed from its self-sufficient extra-linguistic, material identity. Thus, in Derrida's words: "The so-called 'thing-itself' is always already a representamen shielded from the simplicity of intuitive evidence. The representamen functions only by giving rise to an interpretant that itself becomes a sign and so on to infinity".[12]

The cleft between the sign and the material presentation is a dialectical one between presence (sensation) and absence (idea), and as with the distinction between signifier and signified, is the basis for the conventional correlation of meaning to the material plane. It is this which makes the material expressive and therefore a linguistic sign. As Saussure puts it: "It is impossible for sound alone, a material element, to belong to language. It is only a secondary thing, substance to be put to use. All our conventional values have the

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[10] Saussure 1978, p66.

[11] Derrida 1976, p.63.

[12] Derrida 1976, p.49. It should also be recalled that the visual informs the verbal as Saussure's well-known diagram in which the concept of tree is replaced by the image of a tree indicates. Saussure 1978, p.67.

characteristic of not being confused with the tangible element which supports them...".[13]

A key notion in Saussure's theory of language is that the language system is constituted from elements whose "most precise characteristic is that they are what the others are not".[14] Lest it be thought that this is inappropriate to account for the operation of the material presentation "in-itself", it should be remembered that Saussure made clear that only the signifier and signified considered separately could be treated as negative terms - their combination, the sign, was a positive fact or a value.[15] Value is, Saussure pointed out, different from signification, which is a "vertically" coded relation between signifier and signified. Rather, value is a "horizontal" relationship between signs which is defined in comparative terms of similarity and dissimilarity. Meaning for Saussure is a function of the operation of both processes in the sign, value being regarded as the more important component of the two.[16] The "vertical" relation we have already dealt with as "meaning". Viewed "horizontally" or intra-systemically, on the level of sense, the elements of abstract painting are values.

As we have already considered, most paintings depend upon a great number of scalar interrelations simultaneously presented (the perception of material colour for instance, involves the perception of hue, tone, saturation, luminosity, texture, extension and boundary shape), all of which interact with and functionally modify each other (in terms of dominant and sub-dominant functions) to produce a unique material stimulus (this is leaving aside questions of the changes caused by the ambient light and other such

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[13] Saussure 1978, p.118.

[14] Saussure 1978, p.117.

[15] Saussure 1978, pp.120-121.

[16] Saussure 1978, pp.114-115.

contingent factors). Even if two paintings by the same artist use the "same" colour their function in each will not necessarily be the same, much as the "same" word used in different sentences may not have the same function.

Material scales are selected from, and the choices within them organized, as Meyer Schapiro has described in semiotic terms, within the determining "field" of two-dimensional representation, the usually, but not necessarily, rectangular form of the support and its flat unmarked surface. The vertical and horizontal boundaries function as lines of support and containment as well as closure defining inside and outside (this is qualified by framing, which in the work we are about to look at is important largely by its absence). Together with the diagonals, they establish "the axes of the field as coordinates of stability and movement in the image"[17] and provide the infrastructure according to which the motifs of the image are related to each other in terms of position and orientation. These elements, together with those already mentioned, are available to the artist as the basis for the selection of the constitutive elements of the abstract painting. I have set them out in Table 2 (overleaf) in terms of a distinction between variant and invariant features. This schema will provide the basis for the analysis undertaken in the following chapters.

Beyond the specifically analytic context, "reading" of these elements and their relationships in any particular painting may for the most part be instantaneous, the micro-level visual discriminations being informed by macro-level assumptions based on experience and memory. What the viewer pre-understands as natural perception is always already inscribed in a symbolic order, one which is largely unconscious and whose operation is thus largely unrecoverable. These processes are so ingrained as to be "second nature" (ie. culturized habituation) - for example, a horizontal line on a blank ground is

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[17] Schapiro 1986, p.209.

immediately read (iconically coded) as a "real" horizon. This is a function of the automatic projection of a conventional perspectival organization onto the pictorial surface rather than a natural resemblance. It is precisely because of the continuity of these background systems in our everyday negotiation of the experiential world that we can "think" in forms and colours, sounds, movements, and sensory signifiers in general.

Invariant Elements	**Support**	**Mark**	
Variant Elements	Type	Type (Line and/or Plane)	Colour (Hue, Tone, Saturation)
	Format	Orientation	Non-colour (Hue Tone, Saturation)
	Size	Distribution	Dimension (Width, Height)
	Framing	Medium	Texture

Table 2. The Sign Categories of Abstract Painting

The Intentional Structure of Perception

The phenomenological principle of intentionality has been fundamental to much of our discussion so far, from our argument for a holistic theory of language to the idea of the systematic relationality of material stimuli. This way of understanding the epistemological relation of subject to the world traverses the verbal/non-verbal,

linguistic/non-linguistic divide since it is inevitably the case that all objects are grasped in terms of a pre-existing and pre-reflective fore-structure of meaning (which is both personal and social) and thus finally in terms of language.[18]

As perception is structured by material stimuli, it is also a reciprocal structuring of it, making it intelligible, giving it sense as available for interpretation, spontaneously determining its objects prior to any formal interpretation or explanation of them.[19] As an intentional mode of knowledge, perception is circumscribed by a "horizon of meaning" which, in Merleau-Ponty's words, "immediately provides the perceived with a present atmosphere and significance".[20] Sense is, in other words, embodied meaning. It is because of this pre-theoretical inherency, that visual information functions as "communication prior to communication".[21]

The material plane of abstract painting is a network of distinctive features which are comparable not to phonemes but to dentals, glottals and so on, which operate at the level of sound, (the phonetic or phonological level of language), which in vocal expression introduce the material dimension into Saussure's supposedly non-material language system. These distinctive features constitute the surface structure of the painting through their interrelations. A feature or combination of features may form a pictorially constitutive element (the equivalent of a phoneme or morpheme) which acquires its sign value by virtue of its function in a painting, and insofar as this is itself a token of a re-iterable type, its use in other paintings.

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[18] On intentionality see Husserl 1967, pp.119-121.

[19] Cf.Heidegger 1980, p.62. on the hermeneutic circle.

[20] Merleau-Ponty 1962, p.22. This is a correlate of Husserl's "halo of background intuitions". See Husserl 1982, p.70.

[21] Merleau-Ponty 1973, p.56.

From the point of view of discourse construction, verbal language has four operational levels. The first two levels are the non-segmentable but substitutable distinctive features and the segmentable and substitutable phonemes and morphemes. Dependent on them are the upper two levels of words and sentences. The minimum number of levels that abstract painting has is two - distinctive features and the visual equivalent to words (monadic or non-relational images) and sentences (polyads or relational images). The kind of abstract painting with which we are concerned here has three since it uses re-iterable constitutive elements composed from distinctive features. As has already been mentioned, the absence of general phonemic constancy in abstract painting is not a problem to the linguistic analogy because (from a pragmatic point of view) each painting or style of painting functionally determines these *sui generis*. What is a distinctive feature in one painting may be a morphemic equivalent in another and vice versa - for example, a straight line might be a distinctive feature in a work by Elsworth Kelly, but a morpheme in one by Agnes Martin, texture a distinctive feature in Mondrian, but a morpheme in Tapies. The painting, and insofar as it is typical of it, the style of the painting, establishes the functional hierarchy of upwardly-causing elements in accord with the downwardly-causing operations of metalinguistic interpretation. Thus, from a formal point of view, in Mondrian's work prior to his abandonment of black lines in 1942, form is structurally dominant over colour, which has secondary, symbolic value. On the other hand, to a reading in terms of the symbolic values of colours, form would be instrumental to the connotative meanings of the colours and their relationships. The implied relations, rhythm, advance/recession, expansion/contraction and so on, although in one sense the equivalent of syncategoramatic words such as "and", "to", and "from", may have in visual language a value equal to and in some cases greater than, the explicit "lexemic" units.

As long as there is some kind of relationality there is language - the bare canvas, although metalinguistically possibly a symbolic embodiment of "in itselfness" is the end of visual language, the operation of both the syntagmatic and paradigmatic axes having reached a "zero" state.

Stimuli, Signals, Signs

Considered initially as a material presentation, a painting presents an array of stimuli or perceptual differences constituted by both analog and digital relations which are equivalent to the merismatic and phonemic level of language. Stimuli are psycho-physiological factors -colour, tone, texture and so on, and their relational effects - temporal factors such as image fade, complementary contrast and after-images, spatial factors such as irradiation (spreading) simultaneous contrast, and kinaesthetic sensations.[22] This is the level of what Merleau-Ponty calls "primary perception " which is non-thetic, pre-objective or pre-conscious experience.[23]

Precisely because the painted image gives itself holistically to the viewer, the constitutive elements of this presentation and the principles of their relating may not be immediately apparent. Whether or not these become so depends upon the amount of reflection given to it. Identification of the elements constituting the system necessarily depends upon the operation of infrastructural ordering systems of relations - colour, tone and texture scales are the most familiar, but the operative scales are numerous - for example, Wölfflin's categories of relative linearity and painterliness, openness and closedness and so on, are an early attempt to approach pictorial analysis in this way.

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[22] On these and other characteristics of perception see Krech 1969, pp.228-355

[23] Merleau-Ponty 1962, p.242.

Greenberg's famous "flatness" was an attempt to reduce painting to only one of these scales. In general, behavioural familiarity implicates stimuli with "sense", ie. situating them in accordance with certain systematically-determined values.

Signals are stimuli manifestly functioning systematically, ie., as elements with a rule-governed organization or structure, based on apparent differences, oppositions and contrasts, but uncorrelated to a content plane. Insofar as it refers to a systematic base the signal must itself be a sign. A signal may have properties independent of its functioning as a sign-vehicle. When stimuli function as meaning-bearers, we enter the level of meaning proper, the level of signs and symbols. This level ranges from codification proper to contingent association. These meanings are independent of both the stimuli and signals.

These three simultaneously operative levels function as three different levels of meaning in abstract painting - the behavioural, the systematic and the symbolic. All three will be more or less relevant to any particular painting or practice. "Op Art" abstraction, for instance maximally exploits the behavioural, Swiss Concrete Art the systematic, and Russian Constructivism the symbolic.

Relations between the levels of sense and meaning

Before undertaking the substantive part of this study we need briefly to discuss Peirce's tri-partite category of signs, the arbitrary "symbol" and the motivated "icon" and "index", which have wide currency in analyses of this kind and which are useful for the purposes of analyzing and classifying the relationships between signs and their meanings.[24]

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[24] This is only a fraction of Peirce's complex and subtle theory. There is no attempt made here to utilize his 10 classes of signs, his distinction between different types of interpretants and so on. Beyond a certain point such classification only serves to obscure the issues at hand.

In brief, the icon (a qualisign) represents its object by virtue of "characters of its own, and which it possesses, just the same, whether any such Object actually exists or not".[25] Given the generally common equation of iconicity and resemblance it is important to recognize that for Peirce as Firstness and therefore non-relational and non-representational, the icon is a quasi-sign and non-signifying. Yet at the same time he divided this sign category into the sub-categories of images, diagrams and metaphors. Images substantially replicate aspects of their referents, diagrams manifest the relational structure that they signify, metaphors refer by means of a similarity or parallelism of parts. To overcome the difficulty which this referential aspect introduced to his theory, he introduced a distinction between icons proper and hypoicons:

> ...a sign may be iconic, that is, may represent its object mainly by its similarity, no matter what its mode of being. If a substantive be wanted, an iconic representamen may be termed as a hypoicon. Any material image, as a painting, is largely conventional in its mode of representation; but in itself, without legend or label it may be called a hypoicon.[26]

With abstract painting we are very much on the ground of the "in-itself" or hypoicon however as we shall see, legends and labels and thus a referential iconic function is no less applicable to it than to figurative painting. Iconic representation is not simply the reflection of an antecedent and separate world of objects as they are, but is rather a sign which signifies the likeness of its referent to at least some of its own qualities.

The index (sinsign) represents its object by virtue of being "really affected" by it,

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[25] Peirce 1960, 2.247.

[26] Peirce 1960, 2.276.

that is, by being in a dynamical and causal relation to it.[27] The indexical sign may indicate a causal relation even though one does not actually exist.

The symbol (legisign) represents objects "by virtue of a law, usually an association of general ideas, which operates to cause the Symbol to be interpreted as referring to that Object".[28]

As has been discussed the interpretant may determine its interpretation either causally or logically (inferentially) but there must be a rule of interpretation relating sign and interpretant even where the relationship is involuntary. Thus, lending a certain circularity to the Peircean trichotomy, all signs must be counted in the category of symbols (legisigns, or what we have simply been calling signs), even though they may be simultaneously iconically (quali-) and indexically (sin-)significant.

Peirce's sign types are actually functions based on three universal phenomenological categories of Firstness, Secondness and Thirdness. Firstness is the apprehension of phenomena as mere quality, Secondness on the apprehension of phenomena as directly relational, for example, related by cause and effect, Thirdness is the apprehension of phenomena resulting from habit or law. Each sign type although partaking of each of these categories is characterized by the operational dominance of one. Thus the material presentation considered in itself is an instance of a Firstness or a qualisign, but as systematically self-exemplifying this necessarily involves a relational aspect and so Secondness and, insofar as this is apprehended in terms of an interpretive rule, Thirdness. This division accords with our earlier stimuli/signal/sign/symbol division of the work of art. The painting as an arrangement of self-denoting stimuli presents itself iconically as

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[27] Peirce 1960, 2.248.

[28] Peirce 1960, 2.249.

a quali-sign, as an uncoded signal it is indexically related to its systematic base, whilst the symbolic level is a metalinguistic determination of the connotative possibilities of the signal in terms of downwardly-causing interpretation.

Concluding Remarks

What I hope to have shown in these two chapters is that abstract painting can be legitimately subsumed into a semiological and semiotic paradigm compatible with a model of language as a mode of symbolic exchange. I have attempted to develop a model of abstract painting as determined by downwardly-causing interpretation on the one hand, and on the other, systematically-constructed from constitutive elements which are in themselves differential and non-signifying.

A response to the question of whether or not abstract painting is a language depends on an interdependent set of definitions which establish the terms of inclusion and exclusion. The simple criterion of likeness based on physical or material characteristics is not particularly helpful. It makes more sense to assume that abstract painting <u>is</u> a language and accept that this has certain consequences for the way in which we consider or behave towards it.

To achieve this theoretical goal it has been necessary to argue for the "openness" and indeterminacy of language, meaning and communication in discursive processes which do not require stable signification but which are nevertheless based on systematic relations. The general theoretical claims that have been made here have emphasized the functionality of the sign and its semiotic relations. The linguistic and semiotic status of abstract painting depends upon the projective and introjective investments through which any subject makes comprehensible his or her relationship with the pre-theoretical material

world. What follows is concerned with morphological changes in a sample of abstract painting as a result of a relatively circumscribed set of interpretive interests from the point of view of such a subject.

Chapter Three

NEO-PLASTICISM: IN SEARCH OF A LANGUAGE

Part 1: Establishing the Neo-Plastic Language

Introduction

Mondrian's writings metalinguistically code the formal characteristics of his Neo-Plastic paintings to a nebula of meaning "not easy to define" but which to him connoted "beauty, truth, goodness, grandeur, and richness - the universe, man, nature...universal equilibrium".[1] In justifying this association of appearance and meaning, Mondrian was largely indebted to the Romantic and Symbolist assumption that the work of art is the material embodiment of spiritual truth in a relative form.[2] Hence for Mondrian the relationship between the mystic conception of reality and its expression was of a motivated nature and the absolute validity of this bond was justified by the insight of the artist who, like "(i)nitiates, saints, deities brought the people, as if from without, to recognize and to feel the universal, and thus to the concept of a pure style".[3]

Symbolism's subjective, allegorical poetics ultimately signalled a historically specific signifier-signified relationship and so proved inadequate to Mondrian's search for the means by which to objectively represent the a-temporal transcendental essence of reality. It was in this sense that he wrote that "the new plastic cannot be plastically expressed through the *symbol*".[4] Yet, being derived from Symbolist practice and theory,

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[1] Holtzman 1987, p.25.

[2] Cf.Heller 1985.

[3] Holtzman 1987, p.35.

[4] Holtzman 1987, p.39, fn.k.

the Neo-Plastic "correspondence" theory of representation was based upon claims of similar and real, or in other words iconic and indexical, relations between a prior existent and autonomous signified - "higher reality" - and the expressive form and material of painting. In accordance with his Symbolist inheritance Mondrian conceived of this relation in terms of a linguistic analogy. Turning to G.J.P.J. Bolland's *Pure Reason*, a text of central importance to Neo-Plastic theory, he cited that author's claim that: "We find the beautiful inherent in the multiple unity of what is linguistically expressible through proportional relationships". However to distinguish artistic language from the "merely" linguistic, a "purely" and immediately expressive language as opposed to the conventionally denotative system of verbal representation, Mondrian italicized another passage from Bolland: "*The concept of beauty is a relational one - that is, of aesthetic relations, of perceptually agreeable and thus sensibly satisfying relationships, and consequently not a mere linguistic or mathematical concept, but something more, commensurability in a variety of relationships or ratios, etc*".[5] The idea of a language of artistic form expressed in this passage is the theoretical kernel not just of Mondrian's practice but of all the work at which we are about to look.

An insistent theme in Mondrian's writings on abstract painting was the claim of the continuity between Neo-Plasticism and naturalistic painting. Mondrian made it clear from his very first essay "The New Plastic in Painting" that Neo-Plasticism was a "tensing" or "intensification" of natural form, or in other words, real relations perceived aesthetically in "plastic equivalence".[6] The idea that the Neo-Plastic painting was the motivated

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[5] Holtzman 1987, p.51.

[6] Holtzman 1978, pp.28-74. See also Mondrian's essays "Natural Reality and Abstract Reality", Holtzman 1987, pp.83-123 and "Neo-Plasticism: The General Principle of Plastic Equivalence", pp.134-142. Van Doesburg developed series of didactic illustrations designed to confirm this relationship. See Doig 1986, p.16 & Bois 1991, p.188-9 and cf. Vantongerloo's diagram in Petersen 1968, p.151.

expression, or as it later became the "determination", of visible spatial relationships, mediated through the sensibility of the artist, was something Mondrian never abandoned. Hence he wrote in 1936 that the real world "... is not only useful but indispensable, because it arouses in him (the abstract artist) the desire to create that which he only vaguely feels and which he could *never represent in a true manner without the contact with visible reality and with the life which surrounds him*".[7]

However, as much as the artist's feelings, "the real world", "Nature", "the visible world" and so on are coded referents of Mondrian's discursive universe. There is a motivated relationship between Neo-Plasticism's rectangular compositions and the Dutch landscape. However not only is it already, as Hans Jaffé has observed, a reflection of "the will of the Dutch people to control nature"[8], it was perceived by Mondrian not "in itself" but via the formal and thematic conventions of Dutch plein-air naturalism in which he received his artistic training. There is no justification in this culturally-specific experience for Mondrian's persistent claim that Neo-Plasticism was a "true image" of reality in a fundamental, originary sense. Indeed, in terms of the relativism which was to dominate theoretical physics in Mondrian's own lifetime, and which found visual form in the kinds of alternative systems of spatial representations developed by Lobachevsky and Reimann, Euclidean geometry was a thoroughly naïve, anachronistically Newtonian form by which to visually represent such "fundamental laws" of reality. Mondrian's frame of reference was however not empirical science but that of a higher spiritual order. This is a distinction which will be of much relevance when we consider the work of Mondrian's artistic

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[7] Holtzman 1987, p.299.

[8] Friedman, 1982, p.12. At a deeper level Mondrian's grid may be related to the non-perspectival cartographic grid which according to Alpers characterizes 17th century Dutch art and which assumes a flat working surface. See Alpers 1983.

descendants - Bill, Lohse and Vasarely.

Yet if Mondrian's theory of a motivated universal language is unacceptable without the mystic imprimatur, his practical work embodies a fundamental shift in the Western tradition of pictorial representation, from the predominantly motivated sign relationships of mimetic naturalism, to conventionally, and thus properly linguistic, expression plane-content plane correlations.

Mondrian's Pre-Abstract Painting

In his 1941 autobiographical sketch Mondrian explained the relationship between his naturalistic painting before 1908, the variety of "post-naturalistic" styles with which he experimented between 1908-1914, and his Neo-Plastic painting:

> More and more I excluded from my painting all curved lines, until finally my compositions consisted only of vertical and horizontal lines, which formed crosses, each one separate and detached from the other. Observing sea, sky, and stars, I sought to indicate their plastic function through a multiplicity of crossing verticals and horizontals...
>
> I began to determine forms: verticals and horizontals became rectangles. They still appeared as detached forms against a background; their colour was still impure.
>
> Feeling the lack of unity, I brought the rectangles together: space became white, black or grey; form became red, blue or yellow. Uniting the rectangles was equivalent to continuing the verticals and

horizontals of the former period over the entire composition.[9]

This outline of a formal progression which was worked through Symbolist, Pointillist, Fauvist and Analytic Cubist precedents, has been well-corroborated and there is no need to rehearse it here.[10]

To a large extent Mondrian's paintings of the period prior to 1908 are landscapes. The compositions are relatively simple, depending upon emphatically vertical elements with variable horizontal distribution across the surface of the support, grouped either to the left or right or centrally placed. The vertical elements, as tree trunks, boat masts or the arms of windmills and so on, often provide the binding structure for the tonal variation of the pictorial surface through the distribution of pictorial mass. As the subjects are landscapes, the horizon line tends to be situated within the middle third of the canvas. This horizontal emphasis is often re-iterated by an element in the lower third such as a pool of water which either in itself, or as a reflector, also extends the vertical elements to the bottom edge of the pictorial surface.

There are a great many examples of this general pictorial organization and one may serve as paradigmatic, Windmill, 1905-6,(Mead Coll), (Ill.1). (There are paintings of this period with pronounced diagonal recession but they are relatively few). This work depicts a single windmill, its arms aligned with the vertical and horizontal axes of the support, seen standing to the right of centre, behind a low bridge with water in the foreground. The latter reflects the arms of the windmill and creates a single vertical extending between the upper and lower borders of the canvas. To the left is a farmhouse cut off at the far left by the vertical edge of the canvas. The right-hand vertical edge of the farmhouse is

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[9] Holtzman, 1987, p.339.

[10] See esp. Welsh 1977, Henkels 1988.

aligned with the left-hand edge of the bridge. The visible side of the bridge is segmented by rectangularly-aligned decorative coursework (which is a kind of emblem of the geometric structure of the whole composition), an upright element of which marks the central vertical axis of the support. Horizontally the surface is divided into distinct areas by four lines which, given that the viewer assumes that they continue behind the windmill, extend from side to side of the canvas. The uppermost line divides a darker upper area of the sky from a lighter middle area. The horizontal arm of the windmill is aligned with this. The second horizontal divides the lighter middle area from a lower darker one. The roof ridge-line of the building to the left is aligned with this. The third horizon is the horizon line proper, the ground plane on which the windmill is set and to which corresponds the upper edge of the bridge. The fourth and final horizontal divides the bridge and verge from the body of water.

Whilst not suggesting with this summary any covert naturalistic source for Neo-Plastic compositions, it is clear that the structural organization of the early Neo-Plastic works of 1920-21 derives from this source.[11] (Cf.Ill. 2).

It was in Mondrian's work around 1913 that the motif, already drastically fractured and re-organized in accordance with Cubist precepts was finally subsumed by the systematic ordering of lines and colour accents within the limitations defined by the pictorial surface, and in strict concordance with the vertical and horizontal axes. Thus, for example, Composition No.7, 1913,(Coll. S. Guggenheim)(Ill. 3) although still maintaining a figurative trace, describes a virtually-symmetrical delineation of the axes. The vertical axis falls exactly centrally, the horizontal axis slightly varying from the midline position,

[11] Cf. the comparison made by Carmean between Mill by the Water, 1905 in which the wing structure of a windmill and its reflection in a pool of water outline a diamond and Mondrian's Neo-Plastic diamond compositions, Carmean, 1979, pp.18-19 and also Welsh 1977, pp.51-52 who makes a similar comparison.

but both together drawing attention to the compositional principle of axial opposition. This centralized axial configuration is often re-employed in the Neo-Plastic works of the late 1920's to early 1930s.[12]

The mimetic trace was thereafter largely abandoned, Mondrian proceeding to experiment in a group of works with free colour planes, and in Composition with Colour Planes A and B, 1917,(Coll. Kröller-Müller), with the addition of short black segments, which hover, sometimes juxtaposed, sometimes superimposed, on a light background. In these paintings, not only are the relations between the surface planes apparently random, the advance and recession of colours destroy the coherence of the two-dimensional surface. This was stabilized by the introduction of the grid with Mondrian's first diamond painting, Composition in the Square with Grey Lines, 1918,(Gemeentemuseum)(Ill.4)

Although the grid is in one respect a purely systematizing, non-representational device, this painting has been identified with the "reconstruction of a starry sky, but...without a given in nature", which Mondrian at this time mentioned to Van Doesburg.[13] A reading of the intersections of the perpendicular and diagonal lines as star-shaped motifs is encouraged by the naturalistically spatial effect created by the use of a "nebulous" tonal variation. (Mondrian never commented upon the optical flaring which occurs at such intersections in his "classic" Neo-Plastic works and this rather literal representational effect may have something to do with this lacuna). Of course, if the "starry sky" is indeed the referent of this picture it is particularly suited to the grid as representational form since this has a well-established symbolic lineage as manifesting the

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[12] See Ottolenghi Cat. nos. 385, 395, 402, 404, 407 and below p//.

[13] See Holtzman, 1987, p.82. See also Scene 3 of Mondrian's essay "Natural Reality and Abstract Reality", Holtzman 1987, pp.89-91. Apparently based on a letter from Mondrian to Van Doesburg, Hoeks, following Blotkamp, argues that the checkerboard Composition with Dark Colours is the real candidate for this identification. See Blotkamp 1982, p.50. Either way, both works are members of the same "series".

mathematically determinable regularities that constitute the cosmological order.

The grid as such was soon discarded but the vertical/horizontal opposition which governed that structure, clearly referring to the structure of the support itself, was established. The black lines extending from side to side, locking the mobile planes in two dimensional relationality functioned as a visual sign of stability and exact relationship, connoting objectivity over the subjectivity of "free" planes.

Mondrian always emphasized the dependency of the observable world and Neo-Plastic painting, which he claimed "arises from the natural and still preserves the essence of the natural".[14] As he put it in 1917, "Painting has found this *new* plastic by *reducing the corporeality of objects to a composition of planes that give the illusion of lying on one plane*".[15] Thus, even though created as purely formal compositions, the early Neo-Plastic works can be read as "exact spatial expressions" [16] using Mondrian's symbolic equation of colour(red, yellow, blue) with form, and non-colour (white, black and grey) with space (this correlation emerged in his writings around 1921). This produces a colour and tone scale of yellow/foreground, red/mid-ground and blue/background, whilst white accords with light, grey with shade and black with deep shadow. The black lines are used both to delineate form and emphasize spatial contrast.

The relation between Mondrian's pre- and early abstract work reveals a methodical progression of formal condensation, synthesizing, reducing, absorbing and displacing the images of his figurative painting until with Neo-Plasticism he arrives at the "zero degree" of painting, non-mimetic, bound colour planes. The formal characteristics of the new style,

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[14] Holtzman 1987, p.334.

[15] Holtzman 1987, p.38

[16] Holtzman 1987, p.39.

Neo-Plasticism, are both determined by and function as bearers of projected symbolic, intertextualized meanings, essentially embodying and substituting for all the real relationships between existing things and so, according to Mondrian, arriving at: "... the representation of other things such as the laws which hold matter together...the great general truths which do not change".[17]

Neo-Plasticism: The Meaning of Form

Welsh shows in his study of Mondrian's pre-abstract painting, from the early naturalistic works to the crucial "crossover" Pier and Ocean paintings, that their characteristic compositional features, the high horizon line, the parallelization of objects relative to the picture plane, and the shallow depth, combine to signify "harmonious repose". Often these works had recognizable religious and spiritual referents ranging from his late 1890 depictions of St Jacob's Church to his 1914 studies of church facades.[18]

Mondrian's writings make it clear that the universalizing religious, spiritual and ethical concerns of this period were also intentional concerns of Neo-Plasticism and that it was determined formally not by a desire to arrive at a material system of painting "as such", but at what Mondrian, reflecting his extensive indebtedness to Symbolist aesthetics,

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[17] Welsh and Joosten, 1969, p.68. Schapiro, argues that the "root of Mondrian's conception of asymmetrically grouped, segmental forms spanning the field will not be found, I believe, in his earlier paintings from Nature...but in the novel 'close-up' compositions of Degas, Lautrec and others". Schapiro 1978 p.238. Although offering a stimulating cross-relating of images, over-coding Mondrian's compositional principles to early Modernist styles (and Schapiro makes other worthy comparisons in this respect), this association misfires insofar as Schapiro's selected example, Degas' 1882 At the Milliner's, 1882, in his own words, "*embodies* the contingent in a momentary envisionment of the real world...." (my italics). As Degas' paintings are intended to reflect the subjective, the accidental and the incidental and therefore the transient, his compositional schema are formally, epistemologically and epistemically incompatible with the semantic import of Neo-Plasticism, as Mondrian could hardly have failed to appreciate. The suggestion of (visible) part to (invisible) whole which Degas's "close-up" technique produces is an effect undoubtedly comparable to Mondrian's compositions, particularly the diamond compositions, but it is of a quite different semantic order from the more "distant" perspective of Neo-Plasticism in general. (Similar remarks apply to Schapiro's citation of Monet's series of "Poplar" paintings (p.251) as an influence upon Mondrian's painting. Carmean 1979, pp.47-8 is more impressed by Schapiro's argument).

[18] Cf. Illustrations in Henkels 1986; Elgar 1968; Welsh 1977;& Welsh and Joosten 1969.

described as "equivalence in the expression of the physical and the spiritual as unity".[19] This tradition of thought, which was in turn indebted to Romanticism, asserted the immediate, "iconically" expressive properties of stylized form and colour independently of subject matter.[20] It is a view most famously stated by Maurice Denis' proto-abstract claim that all painting, before being this or that represented object is "essentially a plane surface covered with colours assembled in a certain order".[21] The Symbolist notion of iconicity remained central to Mondrian's aesthetic theory as he showed as late as 1940 when he wrote that: "Plastic art establishes the true image of reality, for its primary function is to 'show' not to describe. It is up to us to 'see' what it represents".[22]

The most striking feature of the "anti-naturalistic" transformation of Mondrian's painting, initiated around 1907 by his Symbolist work, is the liberation of colour from a descriptive function and its utilization as a symbolically expressive signifier. Thus, to the critic Querido, writing of a retrospective of Mondrian's works held at the Stedelijk Museum in Amsterdam in January, 1909, Mondrian's "auratic" use of colour referred to no specifiable signification but only a general connotative nebula or ineffable "visionary

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[19] Holtzman, 1987, p.95.Mondrian's relationship to this tradition is complex but well-documented. Welsh's account of Mondrian's early career, tends to emphasize Mondrian's formal preoccupations and his involvement with Theosophy and the Dutch Symbolist movement. However, Henkels gives a more comprehensive account of Mondrian's experience with symbolic representation beginning with his youth in the context of the Dutch Reformed Church and continuing throughout his life. Mondrian certainly abjured from his Theosophical affiliations but he undoubtedly maintained his belief in occult knowledge which is precisely secret knowledge. See Welsh, 1977, Henkels, 1988, pp.172-182; also Ringbom, 1966, pp.113-115. Tim Threlfall points out that the cross form which results from the overlapping of the perpendicular and the diagonal grids in the two diamond paintings of 1918 and 1919 and the "Untitled Drawing" of the same period, as the Egyptian Tau, was the sacred universal cosmological principle discussed in such canonical Theosophical texts as Mme Blavatsky's Isis Unveiled and The Secret Doctrine with which Mondrian was familiar. Threlfall 1978, P.321 Mondrian's description of Theosophy as "spiritual science" (Welsh and Joosten, 1969, p.13, fn 49), might equally serve to describe his aspirations for Neo-Plasticism.

[20] On Symbolist aesthetics see Morgan, 1992, Heller 1985 and esp.Rookmaaker 1956. On Romantic aesthetics see Weidemann, 1986, Todorov, 1982, pp.142-221 and Eco, 1984, pp.130-143.

[21] Chipp 1969, p.94.

[22] Holtzman 1987, p.323.

meaning" through which, as Querido put it, " the special qualities of his soul and intellect are expressed".[23] Comprehension of this association demanded, as Mondrian wrote in reply to Querido, "...a public which is receptive to such things".[24]

Mondrian's earliest known writings are those responding to Querido's review of the Stedelijk exhibition. Broaching the question of "meaningful expression in form", Mondrian explained to Querido that: "the great line (is) of primary importance to an object and secondly the colour".[25] He reiterated this in his 1912-14 sketchbook that "In order to express in form the power which emanated from nature, lines generally must be blacker in the plastic arts than one ordinarily sees them in nature".[26] It is a prioritization typical of the Symbolist isolation of line as the delineator or container of the essence of form.

In Symbolist theory, the linear determination of form was given priority over colour whose variability and affective aspect eluded its essentially rationalist claims to authoritative insight into the nature of reality. Although Mondrian's writings regularly insist on the importance, even primacy of colour over line, this hierarchy of line over colour is a constant feature of Neo-Plasticism at a formal level, as is confirmed by his compositional studies which show that throughout his career his paintings were initially conceived in terms of linear structure and that colour was a secondary feature.[27] This procedure only began to be challenged with his American painting, as he admitted in his 1943 statement that: "Only now I become conscious that my work in black, white and little

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[23] Cited Welsh, 1977, p.130. According to Welsh, p.129, Querido was following Mondrian's promptings.

[24] Welsh, 1977, pp.160-161.

[25] Cited Welsh 1977 p.159. Cf Joosten and Welsh 1969, p.10, where it is translated "It is precisely the essential lines of any object which I find fundamentally important and also, the colour".

[26] Welsh and Joosten, 1969, p.23

[27] However the habit of drawing a composition in crayon or charcoal first, then filling it in is a technique acquired from his early academic training. See Welsh 1977, p.42 & cf. Carmean 1979, pp.37-42.

colour planes has been merely 'drawing' in oil colour".[28] Here of course it should not be forgotten that the linearity of Mondrian's Neo-Plasticism was macro-determined by the symbolic significance of the cross as the "determinate form" of the fundamental law of polarity.

Although allegorical symbolism is certainly inappropriate to Neo-Plasticism it was not accidental that the cross form was both its fundamental symbol and that of Schoenmaeker's mystic theory and Mondrian could not have been oblivious to its connotations of the cross form both in relation to Theosophy and to the broader context of Christian doctrine.[29] Even Bois, who in a footnote states that "Mondrian insisted...even in his earliest writings on Neo-Plasticism: it is always a matter of destroying the cross by multiplying it ", finds no alternative but to write of the "yellow cross" in New York City 1 and to relate it to the "red cross" in the same painting singled out by Charmion von Wiegand, (and compare that painting with her Night Intersection.[30] (Ill.13)

I know of only one statement by Mondrian which fits the claim made by Bois: "The cross form, however is constantly destroyed in the New Plastic".[31] However "destruction" here refers not to an iconoclastic act but a dialectical relationship which depends upon the presence of the cross. As Mondrian wrote in 1938, in Neo-Plasticism: "limited forms seem to result, but because the limiting line is continuous, there is openness

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[28] Holtzman 1987, p.356. However the compositional studies for Broadway Boogie Woogie show that Mondrian had not as yet modified his approach in this respect. See Ottolenghi 1976, Cat. Nos. 461[1 & 2]

[29] See Jaffé 1956 pp.58-59 & cf. also Guenon 1975 on the transcultural symbolics of the cross. Cf. Van Doesburg in 1926: "Our predecessors, like ourselves, expressed this (fundamental polarity) throughout their work, either figuratively...or symbolically, by means of the cross, Baljeu 1974, p.153. An interesting inter-text to Mondrian's vertical = male, horizontal = female equations is Adolf Loos 1908 claim in Ornament and Crime that "The first ornament that was born the cross, was of erotic origin. A horizontal line: the recumbent woman. A vertical line: the man penetrating her" Cited Comini 1991, p.6.

[30] Bois 1988 p.255, fn23 & p.265.

[31] Holtzman 1987, p.99.

despite the limitation...The greatest openness is produced by mutually intersecting perpendicular lines, for these never meet, never become closed".[32]

Manipulation of the "cross" in accordance with Neo-Plastic formal precepts, although fully abstract, is not simply a formal act but rather a semantic one, however "nebulous" in kind, and moreover, this meaning thus derives from the manipulation itself and is not simply a post-hoc projection onto it.

For Mondrian colour, not just line, was important as the signifier of meaning. Thus he wrote that whilst the "taut line without colour... may be the most desirable appearance for abstract expression;... colour is necessary for *abstract-real* expression".[33] Colour was necessary to Neo-Plastic painting to realize its purely imagistic iconicity. Mondrian himself distinguished between diagrammatic representation, "*abstract* in the ordinary (scientific, intellectual?) meaning of the word", from "abstract-real painting" as "exact plastic expression (of) outwardness" and "direct representation of inwardness".[34]

With Neo-Plasticism, Mondrian reduced the problem of colour's subjective affect by restricting its use to the Goethean primary triad. Not only could all other colours, hence naturalistic colouring, be derived from it, at least theoretically, but in its numerical concentration it supported the fundamental Neo-Plastic claim to be the "exact plastic expression" of the artist's intuitive vision which "growing towards the universal", "inwardly changes and interiorizes the outwardness of colour".[35]

The primary triad was of great symbolic import in Romantic colour theory and this

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[32] Holtzman 1987, p.313.

[33] Holtzman 1987, p.36 fn.f.

[34] Holtzman 1987, p.46.

[35] Holtzman 1987, pp.36-7.

undoubtedly influenced Mondrian through his experience with Symbolism.[36] Referring to Goethe, he stated that: "The three primary colours neutralize one another into unity: thus they express light otherwise than in traditional painting".[37] "Light" here is resonant with spiritual value. Thus, he argues in a passage that gives much insight into the projective semanticization of colour in Neo-Plasticism, that:

> "... colour is inwardness (light) in its most outward manifestation. Reducing colour to primary colour changes the most outward manifestation of colour back to the most inward. If, of the three primary colours, yellow and blue are the most inward, if red (the union of blue and yellow -see Dr. H.Schoenmaekers *Het nieuwe Wereldbeeld*) is more outward, then a painting in yellow and blue alone would be more inward than a plastic in the three primary colours".[38]

More simply, pure colour, Mondrian would later claim: "radiates the life force".[39]

The Neo-Plastic primary triad had been pre-echoed in Mondrian's Symbolist phase in Devotion (Child Praying) and, even more strikingly, Windmill in the Sun. In Windmill in the Sun the rectangular structure of brushstrokes emphasizes the surface of the support and constitutes a stabilizing device which "locks" the movement of the colour. The consequence of this is to accentuate the expressive primacy of painting as a relation of signifiers over its particular referent. Here the vibrancy of colour and atomistic *taches* of

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[36] Cf. the Romantic painter Philipp Otto Runge, a practising Protestant and influenced by Jacob Boehme's Theosophy in which the primaries were the "natural symbol of the Trinity". Cited Wiedemann 1986, p.59.

[37] Holtzman 1987, p.37, fn.g

[38] Holtzman 1987, p.36. The acknowledgement to Schoenmaekers is explained Jaffé 1986, p.60. Mondrian's theoretical and practical sources are numerous. Many of these, from Humbert de Superville to Rudolf Steiner, are acknowledged in his first essay" The New Plastic in Painting".

[39] Holtzman 1987, p.119. This is corroborated by Hoeks in Blotkamp 1982, pp.39-55. He also presents further evidence (p.69) to show Mondrian's "expressive" coding of colours in the late 1920s.

paint are symbolic of the dematerializing effect of (divine) light, perceived via the spiritually-heightened sensibility of the artist. From this point of development it was only a short theoretical step to the identification of a concept or pure idea with pure colour and thus Neo-Plasticism's "pure painting" as its embodiment (notwithstanding the actual adherence to linear division).

Mondrian's use of Euclidean geometry undoubtedly owes much to his formal training as an art teacher.[40] Mediated through his reading of Symbolist and Theosophist theory, it is overdetermined by the mythic status of geometry as an anagogical symbol and manifestation of Divine and cosmic order and an a-temporally and a-contextually valid system of construction in a tradition which reaches back through Renaissance Neo-Platonism to Parmenides.[41]

The culmination of Mondrian's Symbolist phase, the 1911 Evolution Triptych chronologically abuts his Cubist phase of 1912-14, his relocation from Holland to Paris and the deletion of the "a" from his surname. Whereas we have read Mondrian's painting in terms of his Symbolist orientation, it is also relatable to the critical reception of Cubism before 1916. Cubism was claimed to be a more objective form of representation than conventional mimesis, representing the subject not as it appears to the fallible senses, but rather "the subject as conceived, that is, its most essential 'objective' formal properties".[42] The Cubist painting was understood as a fragmentation of forms in space re-composed as

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[40] Henkels 1988, pp.156-164.

[41] Ringbom 1966, pp.389-9 points out that the Theosophists employed oval "aural" diagrams, thus suggesting a comparably overdetermined interpretation to Mondrian's use of this Cubist format in his transitional works. See also Hoek in Blotkamp 1982, pp.44-48 who connects it with Mondrian's theosophical-inspired idea of the "spiritual hermaphrodite". According to Schoenmaekers the oval was the functional form of organic life, see Blotkamp 1982, p.240

[42] Crowther 1987, p.195.

non-mimetic signs on a two-dimensional surface through metonymic (eg. *jou* to *journal*) and metaphoric (eg.facetting as spatio-temporal simultaneity and perceptual enhancement) relationships. This in turn suggested that the painting both condensed and substituted for a greater whole. In this context the dissociation of line and colour, was understood not as signifying an essentialization of inherent truth but as a symptom of the analytic treatment of the pictorial subject.

The critical invocation of Kantian and Lockean philosophy subserved what Paul Crowther describes as "the myth that the artist is engaged in an impersonal quasi-philosophical investigation".[43] Crowther argues conclusively against the philosophical validity of these claims, a pot pourri of Kant's theory of categorial judgements and Locke's distinction between primary (mass, volume shape) and secondary (colour texture etc.) qualities, but this does not debar them as a pragmatic influence on and confirmation of, whether directly or indirectly, Mondrian's practice. Indeed if we added "quasi-scientific" to Crowther's statement we would be close to the tenor of Mondrian's artistic projection.

Crowther makes the point that the dominating tendency of contemporary critical discussion of Cubism was to focus on its method in order to explain its semantic import. Whilst this in one respect exemplifies and sustains a specifically Modernist concern with "purity of means" and the painting as a "thing in itself", that would culminate in American Hard Edge and Minimal painting of the 1960s, it also parallels Mondrian's Symbolist coupling of "technique" and "thought".

Nine years before his work became completely abstract, Mondrian wrote that "...everything, now in our times, must be represented otherwise; even through a different

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[43] Crowther 1987, p.197.

use of technique. I find it definitely necessary in our times that paints (i.e. colours) be placed next to each other in pure (form)...".[44] Notwithstanding the fact that he believed at this time (1909) that the technical execution should be "as far as possible, in a pointillist or diffuse manner", this foreshadows a formulation which is central to the semantic codification of Neo-Plastic painting as a signifying system. The twinning of "clarity of thought" with "clarity of technique" which Mondrian called for at this time,[45] remained a central tenet for Neo-Plasticism, De Stijl and indeed abstract painting in general in its theoretical justification of a meaningful anti-mimetic art, thus ultimately joining the Symbolist "correspondence" theory to structuralist formalism.[46]

Hence, Mondrian's writings, as well as those of Van Doesburg and Vantongerloo, repeatedly draw attention to the "exactness" of the new painting, associating abstraction in painting with conceptual abstraction. Thus Mondrian wrote in "The New Plastic in Painting", that Neo -Plasticism was "*the manifestation* of the purely aesthetic idea".[47] The combination of a limited set of formal elements, systematic principles of composition and (relatively) precise execution was used to identify Neo-Plasticism connotatively with the self-determining, objective practices of scientific calculation and pure conceptual activity in general. What was meant by this varied from the relatively simple, intuitive

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[44] Cited Welsh 1977, p.137.

[45] Welsh 1977, p.160.

[46] Cf. Shlovsky 1965 & Barthes 1972. According to Jaffé Mondrian's ideas in this respect were indebted to Schoenmaeker's Plastic Mathematics and G.J.P.J. Bolland's Pure Reason. See Holtzman 1987, p.51. Hoeks denies the influence of Schoenmaekers, instead citing a letter to Van Doesburg dated approximately Dec. 1917 in which Mondrian states that: "I have everything from the Secret Doctrine (of Mme. Blavatsky) not from Schoenmaekers, although he says the same". Blotkamp 1982, p.49. This kind of romantic rationalism was pervasive in avant garde art of the first two decades of the century, notably in Dada which was influential on Mondrian and especially Van Doesburg. Cf. Benson 1987, p.53 which analyzes Berlin Dada in terms of Hölderlin's "'heilig-nüchtern': "holy and sober, piety and sobriety, loving embrace of the cosmos and meticulous cultivation of fact".

[47] Holtzman 1987, p.37.

use of plane geometry in Mondrian's case to the employment of arithmetical and mathematical formulae by Vantongerloo.

Clear technique, according to the Neo-Plastic code, enabled "direct contemplation" of a concealed higher reality. In a footnote to "The New Plastic in Painting", Mondrian wrote that : "...clarity is faith, in the sense of direct contemplation. As such, faith is identical with the highest knowledge...".[48] Despite this theoretical valuation of clarity of technique, in Mondrian's painting its material correlation developed only slowly, the process of painting being clearly foregrounded over finish in the early abstract works. Only around 1922, with the crystallization of the "classic" period is there real adequacy to the concept of "exact" execution (for example, the 1921 Composition with Red Yellow, Blue and Black, in the Gemeentemuseum, has very approximate edges dividing the colour planes, particularly evident with the yellow planes in the lower left and upper right) Even in the later works Mondrian never fetishizes "exactness", always preserving certain indicators of the "hand-made" such as over-painting and ragged lines.[49]

Despite Mondrian's distinction, already mentioned between purely intellectual and artistic abstraction, insofar as Neo-Plasticism was identified with scientific "exactness", judged to be a part of and determined by the same laws as the universe itself, laws revealed by the inspired and equally lawful intuition of the artist, all three aspects, "reality", artist and art work, embedded in a chain of continuous relations, they also invoked a certain diagrammatic quality. As a causal and thus indexical relationship of

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[48] Holtzman 1987, p.72, fn x. Jaffé in Gmurzynska 1979 p.18, points out that the Dutch word for "beautiful", "schoon", also means "clear". Beauty is often regarded by Mondrian as an index of truth, for example "The task today then, is to create a direct expression of beauty", Holtzman 1987, p.199.

[49] See for instance Composition with Red, Yellow and Blue, 1929, Stedelijk and Broadway Boogie Woogie and cf. Greenberg's review of the latter, Greenberg 1986, p.153. Greenberg clearly reflected the coding of Neo-Plasticism in general to rationalist procedures, when he associated Mondrian's painting with "the ruled precision of the geometer and the machine" Greenberg 1986, p.189.

structural similarity the Neo-Plastic painting was understood to be an indexical icon.

However the problem here for a theory of visual representation was that the object/referent (higher reality) of both iconic and indexical relations was of a purely ideational character, rather than an imageable thing. Thus unlike even the most fantastic concoctions of figurative painting, which offer through resemblance a denotative "anchor" for symbolic interpretation, not only was the great bulk of intended semantic content jeopardized, beyond a consensual context it could not even begin. In this respect the Neo-Plastic painting was a conventional sign, correlating a visual signifier to an independent signified using a conventional sign system (Euclidean geometry), to stand for an interpretant (the painting as a veridical essence) of an object (initially "higher reality", later "the metropolis"). Whilst this undermines the theoretical claim of a purely motivated sign relationship, on the other hand it is the basis for a properly linguistic system as the signifier and the signified are separable, as we shall see when we look at Mondrian's American followers. However once we are familiar with the interpretive conditions of the material practice, coding the greatly reduced means, extensive use of white and so on to "spirit", comparing the 1930 Composition 1A, (Coll. S. Guggenheim), to Broadway Boogie Woogie (Ills. 5 & 6), for example we can find this shift (from "higher reality" to "the metropolis" at the level of the interpretant justified by the level of the material presentation. The great importance of interpretive conventions is apparent if we compare the former painting to Fox Trot A, 1930, (Yale University) (Ill.10). Although both are very similar compositions, the latter is coded by the title to dance music. Taking this as the interpretive cue, attention shifts from the monumental simplicity accentuated in the former to the openness of the relation between the orthogonals and the support edges in the latter.

Less problematic with respect to the intended meaning of Neo-Plasticism were the

claims that it embodied such qualities as repose, dynamic equilibrium, and rhythm since insofar as they have a material form it could indeed iconically exemplify them. However, even here this is not simply "natural", since evaluation of such qualities depended upon representational conventions, which established what constituted "an exact representation of balanced relationships", "an exact representation of unity" and so on. As we shall see in this study, the conventionality of the signifier/signified bond provided the ground for the diachronic mutation of Neo-Plasticism's signs

How Mondrian's paintings are understood depends upon the interpretive fore-structure by which they are approached. The de-personalized geometry of Mondrian's Neo-Plastic painting has sometimes been interpreted as an index of a pathological rigidity of personality, moral purism and sexual repression and thereby subjected to an either implicit or explicit devaluation, as in the case of Peter Gay's and Mark Cheetham's readings.[50] Abstract painting of the geometric kind we are examining here undoubtedly exhibits a preoccupation with mastery but the same could be said of Pollock or Picasso. On the other hand Mondrian's painting, considered diachronically, could just as well be interpreted as a working through, in a psychoanalytic sense, of his alienation from his Dutch Calvinist upbringing, symbolically initiated by his 1912 deletion of the 'a' from his paternal surname and the simultaneous engagement with Cubism. Not only was Mondrian the "truly modern man" of his Neo-Plastic writings but the conversion of his studio into a Neo-Plastic environment enabled him to live in that artistically-mastered reality. Thus, identifying the straight line with conscious order and colour with instinct or desire, a move for which our remarks so far have given us grounds, we can read Mondrian's work in terms of a combat between castrative repression (line) and its disruption (colour). In

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[50] Gay 1976; Cheetham 1991 and see p.//above..

Mondrian's American painting in particular the two aspects merge or collide indicating an upsurge of *jouissance* which even implied the renovation of the Neo-Plastic system, truly an "over-coming" insofar as it leads to its own destruction in the abstract expressionists' all-over painting as has been suggested.[51]

Desire in the Neo-Plastic language is thus equatable with the all-important factor of intuition which was opposed to conscious calculation. Mondrian's dogmatism is a somewhat exaggerated, perhaps even mistaken, interpretation of a strongly-held conviction. As is discussed below, in the use of mathematics, in the incorporation of the third dimension, and in the use of colours within the Neo-Plastic sociolect, Mondrian was flexible.[52] Not only did he himself not adhere to the use of primaries, he apparently accepted without recrimination the fact that Van Doesburg and Vantongerloo, for instance, used secondaries.[53] Whilst the 1927 falling out with Van Doesburg over the use of the diagonal is well-known, Mondrian's reason for this was more to do with his desire to maintain a comprehensible system of painting than dogmatically preserving a principle per se. As Mondrian said to Charmion von Weigand *a propos* of the non-classicism of Broadway Boogie Woogie: "So, perhaps now we will have to change the theory".[54]

Not only were the two artists reconciled around 1928 but the proliferation of

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[51] See Troy in Lane 1983, p.197 and Bois 1988. See also Schapiro's reading of Broadway Boogie Woogie, Schapiro 1978, p.257-259. In a wider sense, if mimesis is a kind of death-mask for the visible world, abstract painting is a jouissance for the invisible world as a source of life. This has a complex relation to abstraction's "spiritualist" origins which assume the eternality of the invisible. See also Kristeva's essay "Giotto's Joy" in Bryson 1988, pp27-52.

[52] Cf. Bois 1988, p.262 for Mondrian's opinions of the work of Gorin and Holtzman. Mondrian even approved of Glarner's work, which although clearly identified with Neo-Plasticism did not adhere to the perpendicular opposition, see Hnikova 1982, p.217.

[53] "Each artist must seek his own colour expression",(1917) Holtzman 1987, p.37; and on Vantongerloo in 1920: "I feel his use of purple and the seven colours a bit premature: perhaps later that can be done. In theory, it can be defended, it seems even better". Cited Blotkamp 1982, p.348.

[54] Cited Carmean 1979, p62.

abstract practices to which Mondrian was exposed though his involvement with *Cerle et Carré* and *Abstraction-Création* and the American Abstract Artists indicated an ecumenical attitude on his part. His late works and his enthusiasm for Pollock (" the most exciting painting that I have seen in a long, long time here or in Europe"[55]) all belie the severe persona which Cheetham and Gay accept at face value.

Thus, however easy it is to fixate on the geometric structure of Neo-Plastic painting, it is an error to forget that according to Mondrian this was but an armature by which to manifest the essential import embodied by Neo-Plasticism, balance through "continuous opposition". This fixation informs many readings of Neo-Plasticism, from Gay's psychoanalytic reading, already mentioned, to Yve-Alain Bois's "materialist formalist" approach.[56] This is so despite Mondrian's continual insistence that it was not the lines and planes "as such" which were important to Neo-Plasticism but the relationship between them. Thus, he wrote in 1930 that Neo-Plastic painting "... is as destructive as it is constructive. It is quite wrong to call it 'Constructivism'"[57]; in 1931 "...we must understand that the plastic means and even pure relationships are not the essential of the work of art"[58]; and in 1941, in his final writings: "Neither the lines nor the planes are the purpose, but the dynamic rhythm which establishes life".[59] After 1930 when Mondrian supplanted the macro-coding concept of "repose" with that of "dynamic equilibrium", it had increasing significance as a determinant of his picture-making. Whilst Mondrian

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[55] Cited Bois 1988, p.276

[56] See Bois 1991, pp.xi-xxi & Bois 1988.

[57] Holtzman 1987, p.231.

[58] Holtzman 1987, p.251.

[59] Holtzman 1987, p.334.

himself probably only gradually came to grasp the dynamism and "destructiveness" inherent in Neo-Plasticism, once he did so, his painting repeatedly rejected the balanced (this always being a matter of interpretation) disposition of colour planes, the pictorial elements proliferating into a complexity of criss-crossing lines with "free" colour planes. The transformation thus wrought in Neo-Plasticism culminates with the Boogie Woogie paintings. If a dominating "spirit" can be identified in his painting it is aspiration to "liberate" vision through destruction of form.[60]

Part 2: Reading Neo-Plasticism

The first part of this chapter has been concerned with Mondrian's efforts, at both the theoretical and practical levels, to establish Neo-Plasticism as a means of expression for his ideas. Before moving on to Mondrian's primary correspondents in this task, Van Doesburg and Vantongerloo, who will be considered in the next chapter, I want to look at a sample of different, more "distant" readings of Neo-Plasticism and to pursue a principal interest of this study, the formal characteristics of the language instituted by Neo-Plasticism.

Neo-Plasticism: The American Response

Although in no way abandoning his philosophical perception, the increasing use of referential titles towards the end of his career (Place de la Concorde, Trafalgar Square, New York City and the two Boogie Woogie paintings) is a return to a form of coding characteristic of his naturalistic paintings and suggests a new interpretant for the Neo-Plastic representamen. Thus between his 1917 claim that the "new plastic" was "a *direct*

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[60] See the essay "Liberation from Oppression in Art and Life", Holtzman 1987, pp.320-322.

expression of the universal"[61] or a "*direct representation of the universal*"[62] and his 1942 claim that abstract art was a "reflection of the universal aspect of reality"[63] there is a slight but significant shift in the signified object from the "universal" to "reality ". In this can be seen Mondrian's response to the specifically American interpretation of Neo-Plasticism).

Mondrian's American painting, and Broadway Boogie Woogie in particular introduce into Neo-Plasticism a kind of resemblance relationship which is close to the "facade" and "scaffolding" paintings of 1912-14 such as Composition No.9 (Scaffolding), 1913-14,(M.O.M.A). Thus, the red, grey and blue configuration at the centre of Broadway Boogie Woogie recalls the rectangles of grey, pink, orange and blue, loosely painted but organized by the "scaffolding" of black lines, to the centre-left of Oval Composition, 1914, (Gemeentemuseum). This kind of resemblance invokes not the recognition of a particular referent, but rather suggests a generic type or hybrid (a form which is an eminently evocative form of the city), in the case of Broadway Boogie Woogie, of street grids, skyscraper facades, scaffolding, neon signs, and jazz music, by providing a schematic armature which, as the title indicates, could be read as polysemically connoting "the metropolis" ("Broadway" is wonderfully evocative in this respect, a mythic location referred to in innumerable Tin Pan Alley songs and Hollywood musicals.)[64] This transferable schema developed from the New York series of paintings which, Mondrian to Sidney Janis, were inspired by "what New York meant to me when I first saw

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[61] Holtzman 1987, p.29.

[62] Holtzman 1987, p.48

[63] Holtzman 1987, p.350.

[64] Cf. Greenberg on Broadway Boogie Woogie: "The checkered lines of orange squares produce a staccato rhythm - signifying jazz....", Greenberg 1986, p.153.

it from the boat" and "the city as it appeared to me after living in it".[65]

In the essay "A New Realism" Mondrian established the metropolis as the central referent of abstract painting: "It is the expression of modern life. It produced Abstract art: the establishment of the splendour of dynamic movement".[66] Thus the American metropolis presented itself not only as a realization of Mondrian's Modernist ideals but also as its prior iconic equivalent.

Mondrian's work was known prior to his arrival in America and was influential upon American artists such as Burgoyne Diller, Ilya Bolotowsky, Charles Shaw and Harry Holtzman. Katherine Dreier and Marcel Duchamp's Société Anonyme first showed a Mondrian at the International Exhibition of Modern Art at the Brooklyn Museum between November 10, 1926 and January 1, 1927, and A.E. Gallatin's Museum of Living Art in Greenwich Village, which acquired its first Mondrian in 1933, included four works in its collection.[67] Although Mondrian's writings, particularly "Plastic Art and Pure Plastic Art" (1936) enjoyed wide circulation amongst interested artists it is significant that the paintings were first encountered by the American artists in a context far from the ethical and spiritual concerns of Mondrian and the De Stijl movement.[68]

The American artists understood Neo-Plastic painting in terms of an urban architectural environment which was already well-advanced towards a modular "International" style relative to the situation and their most distinctive contribution to Neo-

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[65] Cited Lane 1983, p.196.

[66] Holtzman 1987, p.348. Barthes unequivocally reflects this association when he claimed that: "... no doubt only an 'abstract' painter could do justice to New York, could understand that planes and lines, form and meaning are as intensely alive here as in one of Mondrian's compositions". Barthes 1979, p.149.

[67] Lane 1983, p.18.

[68] See Holtzman 1987, p.289 & cf. Lane 1983, p.71.

Plasticism was to develop its three-dimensional constructional implications.[69] It is important to consider Mondrian's late works from 1940 onwards as responding dialogically to this development at both the practical and theoretical levels. Thus, "A New Realism", Mondrian's 1942 essay, was not concerned with Neo-Plasticism as such, but abstract art in general and this is true of all Mondrian's American essays with the exception of the 1941 autobiographical sketch "Towards a True Vision of Reality".[70]

Diller's Second Theme, 1937-38,(M.O.M.A), (Ill.7) although clearly indebted to Neo-Plasticism in its use of overlapping coloured lines anticipated the kind of spatial recession which Mondrian subsequently used in his New York City works. Diller had been painting abstract paintings since around 1930 and besides Neo-Plasticism, was aware of Suprematist and Constructivist works, the latter being shown at several of the Société Anonyme exhibitions.[71] Although overlapping occurs in some of Mondrian's proto- and early Neo-Plastic works, notably the two 1917 compositions, Composition in Blue, B and Composition with Pure Colour Planes on White Ground, A,(Kröller-Müller), and the 1921 Composition with Blue, Red and Yellow,(Clark Coll.), and Van Doesburg overlapped lines and colour planes earlier in such works as Simultaneous Counter-Composition, 1929-30, M.O.M.A., the similarity between Mondrian's and Diller's work is remarkable.[72] Equally however, Diller's Untitled No.21 (2nd Theme), 1943-5,(Carnegie Institute), (Ill.9)

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[69] In part this may also have been stimulated by the influence of Hans Hoffman's teaching at the Art Student's League from 1932, with its insistence on the importance of three-dimensional spatiality in painting. Both Diller and Holtzman attended League classes during the 1930s. Lane 1983, p.40.

[70] Bois suggests that with "A New Realism" Mondrian may have been implicitly replying to an article by G.K.L. Morris that appeared in the Partisan Review in late 1941. Bois 1988, p.264. fn 47).

[71] Lane 1983, p.28.

[72] Gorin, whose work also had affinities with Suprematism, as early as 1929 introduced a red line, well anticipating Mondrian New York paintings.

replies to the New York works.[73]

This interest in the three-dimensional, architectonic implications of Mondrian's painting is manifested in the Neo-Plastic sculptures by Holtzman and Bolotowsky as well as works with clear reference to metropolitan architecture by abstract artists associated with them such as Shaw's Plastic Polygon series of shaped canvases.[74] Although not using the Neo-Plastic idiom as such, Shaw wrote of the latter: "In the main these experiments were founded upon the New York scene - rather than a form composing varying planes, it had taken on the rigid tranquillity of a sidewalk pattern viewed from above...That in its growth and development it no longer embraces those somewhat realistic features found in its progenitor is of no comment. Structurally and functionally it is solely of America".[75] This brings to mind not only the iconic equivalents of Broadway Boogie Woogie but Mondrian's remarks to Janis about his New York painting, cited above. (Mondrian exhibited with the A.A.A. of which Shaw was also a member).

When the American paintings are compared with the works from the classic period we can rightly infer a secular/material meaning as opposed to the religious and metaphysical import of the earlier works. In New York Mondrian's painting quickly developed a flexibility of colour and form deployment which derives directly from the stimulus of his American milieu. Thus we can profitably compare Broadway Boogie Woogie with Stuart Davis's Hot Still-scape for 6 Colours- 7th Avenue Style, 1940, (Museum of Fine Art, Boston), or Report from Rockport, 1940, (Lowenthal Coll.), (Ills. 6 &

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[73] Cf. also Bolotowsky's City Rectangle and Rectangular Space, both 1944 (Coll of the artist). Guggenheim Museum 1974, Cat. Nos. 18 & 19.

[74] Lane 1983, Cat. No.126.

[75] Cited Lane 1983, p.27 & cf. also Ad Reinhardt's No.30, 1938, Lane 1983, Cat. no. 113 and Carl Holty's City, 1942, Lane 1983, Cat. no.79.

8). Whilst Davis's works are figurative, all possess the distinctly American characteristic which in Mondrian's New York works Larsen describes as "a state of high visual excitement" through their use of flat, unmodulated colour planes set in stark contrast to each other, creating a "jazzy" effect.[76]

Thus Larsen claims the latter as related to Davis's "all-over compositions and calligraphic imagery".[77] In this respect the connection between Neo-Plasticism, jazz music and the primitive, mentioned earlier, functions as a overcoding facilitation for Bois's claim that Mondrian's New York works were a precursor to Pollock's "all-over" painting.[78] However, Bois is here re-articulating the mainstream American account of Modernism. Pollock's paintings may be antiphonally related to those of Mondrian but the geometric "tradition" was not only continued by Mondrian's immediate followers, Holtzman, Diller et al., but by a variety of artists including Ad Reinhardt and Charles Biederman.

As with the earlier Neo-Plastic works, Mondrian's American paintings in their schematism do not diagrammatically plot or map an actual existent. But they differ from the European works in that they (imagistically) iconically reproduce (and this applies particularly to Broadway Boogie Woogie) substantial features (verticality, horizontality, rectilinearity, segmentation and contrast of form, contrast of tone) of a real existent. Insofar as this is invoked by their titles it implies an indexical relation to its referent and now suggests in terms of visual resemblance a real justification for the categorization of these works as indexical icons. They do this through a variety of symbolic/conventional relations

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[76] Lane 1983, p.40.

[77] Lane 1983, p.32.

[78] Bois 1988, p.272. Cf. also Troy in Lane 1983, p.197.

"poetically" relating, through such devices as simile, metaphor and synecdoche, the formal organization of the self-denoting signifiers to the organization of Manhattan itself and in the case of Broadway Boogie Woogie, also to the organization of musical form, thereby doubling the semantic resonance, jazz itself being symptomatic of the mythos of the American metropolis.[79]

Thus G.K.L. Morris, co-editor with Greenberg of the Partisan Review wrote in 1943 of Mondrian's painting of this period "...Mondrian gives us a thing in itself - and here we have something entirely new, a fragment of the modern world, concise, compact and complete".[80] Recalling the critical mediation of Cubism discussed earlier, Morris understands Mondrian's work as simultaneously an in-itselfness and a fragment and sample, a part of a whole, certainly something which has real relations to its referent.

Neo-Plasticism and Spatial Representation

Yve-Alain Bois maintains that an "'optical' interpretation of Mondrian, conceived in the assurance of immediate perception", cannot account for his New York paintings".[81]. Whilst this is true of the implications of Neo-Plasticism, Mondrian's own practice remained firmly "optical". The memoirs of Charmion von Weigand, of which Bois himself makes frequent use, describe the way that Mondrian would, after working flat, see if they "worked" optically, which presumably demands standard viewing conditions.[82] Although this report refers only to Broadway Boogie Woogie, the "final" photograph of Victory

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[79] See Broms 1991.

[80] Cited Bois 1988, p260.

[81] Bois 1988, p.276.

[82] Carmean 1979, p.62.

Boogie Woogie standing on the easel is a testament to Mondrian's commitment to easel painting and to its "optical" condition.

Seeking to demonstrate the tendency towards a "sculptural" identity in Mondrian's work, Bois argues that in New York City 1, (ill. 11) he achieves an "optical impenetrability" by braiding his coloured lines, thus "destroying" the pictorial surface which permits spatial illusionism. It is impossible to accept this claim since in only 9 instances out of the 132 intersections do the lines appear (illusionistically) to be braided. Yellow is "above" blue in 29 out of 30 intersections, and "above" red in 25 out of 30 intersections, red is "above" blue in 8 out of 9 intersections, and in only 3 of the 84 yellow on yellow crossings, according to Bois's own observation, is the horizontal over vertical relationship reversed. Rather, the coloured lines of New York City 1 clearly establish three planes of tonally-determined recession, yellow, which lies in front of red, which lies in front of blue, which in turn lies in front of the white "background" plane. The effect of recession is reinforced by the grouping of the verticals in this nearly square format in such a way as to leave the centre and centre-left areas of the canvas open, literally and metaphorically, relative to the clustering at either side (which is reinforced by the non-symmetrical colour accenting of a blue vertical to the left and a red vertical to the right). This distribution introduces an illusionistic curvature directing attention to the open central vertical area.

The coloured lines of New York City 1 continue around the frameless edges of the canvas support, enhancing its real three-dimensionality, but not symmetrically, tending to be irregular on the left hand side, regular on the right. The continuation of the divisional lines and colour planes around the edges and along the sides of the support is a perplexing feature, one which is simultaneously both evidently intentional and yet apparently completely a-systematic, either between paintings, or within any particular painting.

However, there is a general tendency in Mondrian's work to move from compositions whose lines do not meet the edge to those which do and which are continued around the support edges. Apparently, according to Vantongerloo, there was an early fear that if all the lines were extended from side to side the composition would lose "organic compactness".[83] This was undoubtedly related to the problem of the edges experienced by the Cubists and which occasioned their use of the oval, which is a prominent feature of Mondrian's painting between 1912 and 1917. (This problem goes back to his 1917 Composition with Colour Planes No.3,(Gemeentemuseum), in which the planar forms abut, or were cut off by, the frame). However as with the cross form, the spiritualist resonance of the oval should also be remembered and Mondrian's a-symmetrical "wrap-around" lines may also have been some kind of attempt re-capture an organic wholeness once the enclosing frame had been abandoned in favour of an optically-implied "infinite extension".

Whatever Mondrian perceived in these aspects of his work, the wrapping of the lines around the support edges and the recession or absence of the frame on the one hand does emphasize the object-hood of the painting, literally pushing the surface forward into real space, particularly in a work such as the 1933 diamond painting, Composition with Yellow Lines,(Gemeentemuseum), with its recessive but relatively bulky two-tier "ziggurat" style frame.[84] Gorin, Domela, Diller, all developed the implications of Neo-Plasticism in this respect in constructions with real elements layered on a painted ground whilst Holtzman and Bolotowsky made free-standing Neo-Plastic "sculptures", which in many

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[83] Henning 1968, p.247, fn.15.

[84] Troy observes that Mondrian painted a series of diamond paintings, which most effectively invoke extra-pictorial extension when his development of a Neo-Plastic coloured environment was at its peak. At that time (1926) Mondrian, clearly manifesting his understanding of Neo-Plasticism as a symbolic form, referred to his painting as "an abstract surrogate" both of the Neo-Plastic environment and of humanity's "objective, universal spiritual condition". Troy 1983, p.138.

ways foreshadowed Stella's and Judd's pre-occupation with object-hood.[85]

However this materialist-constructive implication of Mondrian's work is counter-balanced by its optical equivocation between surface and depth. Whilst this feature is arguably as important in the three-dimensional works of at least his immediate followers, it is of primary importance in Mondrian's own work insofar as it represented the constantly changing "rhythm of life".[86] This optically interactive implication of Mondrian's work manifested itself most clearly in Op Art abstraction of the 1960's.

According to Mondrian, Neo-Plasticism "expresses space *on a flat surface*" as an "equilibrated relationship of position". "[H]eight and breadth oppose each other without foreshortening, and depth is manifested through the different colours of the planes".[87]. Thus abstract painting is "three dimensional space reduced to two dimensional appearance".[88]

Mondrian repeatedly claims that this relationship in depth in interaction with the surface opposition of orthogonals is comparable to the counterpointed relation between melody and harmony in music or even in dance between the music's rhythm and the dancer's steps.[89] Hence his well-known 1943 comparison between Neo-Plasticism and boogie-woogie's " destruction of melody, which is equivalent of destruction of natural appearance, and construction through the continuous opposition of pure means - dynamic rhythm".[90] This is a re-formulation of his 1919 statement that "Modern musical

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[85] Mondrian entirely approved of this tendency towards the sculptural see Bois 1988, p.202, fns 41& 42.

[86] Holtzman 1987, p.238.

[87] Holtzman 1987, p.38.

[88] Holtzman 1987, p.347

[89] Holtzman 1987, p.47, fn. b.

[90] Holtzman 1987, p.357.

compositions...in which melody and form are destroyed, are in agreement with Abstract-Real painting...".[91] In Neo-Plasticism the literal segmentation of the two-dimensional picture plane represented a "movement" opposed to the "counter-movement" of optical relationships, a relationship of rhythmical tension. (In terms which arose in the debate between Mondrian and Van Doesburg, this was also a tension between the orthogonal and the diagonal which gave rise to the latter's "Counter-compositions".)

In the "classic" Neo-Plastic painting this musical analogy is further developed by the fact that the lines and colour planes are disposed non-symmetrically and distributed to the painting's edges, disrupting any gestaltist perception of the image and engaging the scanning process so that the viewer's eyes are compelled to move ceaselessly from side to side, top to bottom, discriminating non-parallel relationships that disrupt the strict vertical/horizontal opposition of black lines. The final Boogie Woogie paintings accentuate this experience by the use of scale, both exceeding in size any of Mondrian's previous paintings, Victory Boogie-Woogie taking this even further by exploiting the centripetal effect of the diamond format.

Mondrian identified Neo-Plasticism's colour (red, yellow, blue)/non-colour (black, white, grey) opposition with a form /space opposition.[92] It is a problematic claim since the normal tendency is to read the black lines as form relative to the white as background as those works which employ only black and white make clear. (This is aside from the fact that at a theoretical level, the non-colour triad is not equivalent to the red, yellow, blue triad since grey is derivable from black and white.)

Black used as a planar element in many works (for example, Composition 2, 1922,

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[91] Holtzman 1987, p.84.

[92] Eg. Holtzman 1987, p.209.

(Coll. S. Guggenheim) and Composition, 1929, (Bâle), necessarily has a different function from black as constituting the linear structure, where it contracts against the expanse of white. Both uses however constitute form in contrast to white particularly from the late 1920s onwards tends increasingly to create a unified background plane.[93] This confusing duality, which in practice, as Marcelin Pleynet observes, had the merit "of letting the painter [Mondrian] question that object (the Painting) that he no longer knows how, or from which angle (surface, depth), to tackle", was given a new importance in the 1950s in the work of Vasarely as we shall see in Chapter 6.[94]

Bois's claim that Mondrian had a "horror of three dimensionality" is a considerable distortion of the truth.[95] Mondrian, even in his pre-abstract painting was clearly fascinated by architecture as structure. From his Dutch windmills and churches to his Paris facades, architecture facilitated and provided a referent for his passage to abstraction and his writings consistently use structural and architectural metaphors in attempting to explain and justify Neo-Plasticism. Further, the positive relationship between the constructive and Neo-Plasticism was embodied in Mondrian's original Dutch name for the latter, *De Nieuwe Beelding* which combines senses of new image, new conception and new construction and insofar as it is simultaneously a philosophical and moral concept, a general human task of social construction.

However, as already discussed, Mondrian understood his work as having a primarily "destructive" optical function: "The fact that Neo-Plasticism uses only the rectangular plane and not varied forms proves that it has another purpose than to establish

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[93] However Mondrian continued to tonally differentiate his white planes up until at least the mid-1930s. Cf. Composition with Grey-Red, 1935, Art Institute of Chicago.

[94] Pleynet 1984, p.98.

[95] Bois 1988, p.12.

form".[96] This function is demonstrated by his designs for the Salon of Madame B... at Dresden, his sets for Michel Seuphor's "The Ephemeral is Eternal", and his own studio spaces, in the latter instance without the linear structure.[97] At the most general of levels this inseparable material-optical duality exemplified the concurrency of both empiricist and metaphysicalist tendencies in Mondrian's ideas.

Mondrian and Photography: A Meta-Linguistic Strategy

Mondrian was not only a painter of Neo-Plastic paintings, he was also their public relations officer. His writings, disseminated through a variety of avant-garde journals are one way in which he attempted to reconcile Neo-Plasticism to the tradition of painting as a signifying discourse. Another was his use of photography, which in this respect functioned as a collateral text or semiotic support. As early as August 1917 Mondrian was having photographs made of his paintings for publication.[98] From 1924 onwards he had made photographs which showed his studio/home, either as a subject in itself or with himself in it, as a kind of photo-essay of the artist at work/home.[99] The success, or perhaps necessity, of this strategy in mediating his painting is demonstrated by the

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[96] Holtzman 1988, p.231.

[97] George Rickey 1967, pp9-11, citing Frank Lloyd Wright's work (which had been introduced to De Stijl by Robert van't Hoff, Troy 1983, pp.9-10), points out that the field of "applied art" in the architectural context was more advanced in making use of the constructive implications of abstract geometric design. It is an association which bears fruit when these designs are compared to Mondrian's New York City and Diller's Third Theme.

[98] See Blotkamp 1982, pp.51-53.

[99] Troy 1983, p70 states that Mondrian on several occasions provided photographs of the Rue du Départ studio for art publications but does not give any details. One such photo is reproduced in De Stijl 6/7 1924, but little can bee seen of Mondrian's studio. It was common practice for De Stijl to photographically feature the studios of its other members. Mondrian supplied two photographs for the book published to accompany the Société Anonyme's International Exhibition of Modern Art in 1926, one of himself, one of his studio, Troy 1983, p.135).

continued circulation of these photographs in texts which deal with Neo-Plasticism.

The photographs of the empty studio at 26 Rue du Départ, taken in 1926 and those of Mondrian's New York studios, initially on First Avenue and later East 29th Street, serve in various ways to establish or strengthen a conception of Mondrian as sage or "magister ludi" and his workspace as that which Henkels describes as a "'cell' or 'laboratory' in which the environment of the future is researched".[100] Although Henkels uses it here, entirely appropriately, in the scientific sense, the reference to a "cell" is triply resonant in that it evokes connotations of both the monastic and the revolutionary. All three meanings overdetermine a connotative nebula of formal "purity" exemplified by Neo-Plastic painting at a material level and with which the verbal texts are concerned. Similarly, the photograph of Mondrian at his phonogram is designed to confirm the verbal coding of Neo-Plasticism to jazz music and dance and thereby the universals of corporeal rhythm and the primitive.[101]

Despite their seeming informality, these photographs function not only to place Mondrian's paintings in an intended interpretive context, but also to reconcile them to the general Modernist reading of painting in terms of individual authorial production and to do this without contradicting Neo-Plasticism's meta-subjectivist aesthetic. Thus, for example, Mondrian had himself photographed standing erect in his favourite left-quarter profile (see his 1918 Self-portrait in the Gemeentemuseum), his left arm angled on his hip so as to echo the left-point of Composition with Yellow Lines, which is set on the easel to

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[100] Henkels 1988, p.187. Henkels provides a good selection of these photographs. On the role of the studio see pp.182-188. Troy 1983, p140 points out that in the Paris photographs Mondrian "seems to have gone to considerable lengths" to suggest that his irregular pentagonal studio space was a regular rectangle.

[101] See Holtzman 1987, Ill. 245. Troy explores these concerns as directly influential in De Stijl in general, Troy 1984. On the influence of Mondrian's studio environment on Calder, Nicholson, Domela, Gorin, Huszar and others see Troy 1983, p.161-168.

his right in the centre of the photograph.[102] Grounding in a biographical subject is important at least to Mondrian to justify the expressive universality of Neo-Plasticism. It is a feature which counterbalances the potentially anti-humanistic reading which may result from the use of geometricized form, one which as his comments on the use of system and mathematics, which we shall shortly look at, indicate, evidently bothered him.

That these photographs are not incidental to the paintings or accidental intimacies is revealed by comparing them with a photograph taken by Fritz Glarner, showing Mondrian at work on Victory Boogie Woogie.[103] There, Mondrian, his hands visibly soiled with work, wearing a work coat open at the neck to reveal an undershirt, is caught impromptu amidst a bout of concentrated activity. He looks up at the camera with an expression, if we can read it thus, of startled irritation. The difference between this and other photographs of Mondrian "at work" is that even when selecting a brush or handling a canvas, although also garbed in a work-coat, he wears beneath it a suit and tie, in many instances cuff-linked shirt-sleeves protruding.

Neo-Plasticism as System

It is system, precisely the equiproportional grid, which characterizes the group of works immediately prior to the first properly Neo-Plastic paintings of 1921. The two diamond paintings of 1918 and 1919 with their overlapping of perpendicular and a diagonal grid and the two "checkerboard" paintings of 1919 (in these the "modular" rectangles having the same proportions as the support). It is in reaction to this strict determination that Mondrian insisted on the intuitive basis of Neo-Plasticism and

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[102] Carmean 1979, frontispiece.

[103] Carmean 1979, Ill. 53.

emphasised "how dangerous it is to adopt a system".[104] Indeed, from this initial point Mondrian's painting quickly moves away from the grid.

Mondrian's caveat against system was against the mechanistic conformity implied by regular division. In his second essay on music which appeared in De Stijl in January and February, he drew attention to the "great importance of 'system' in art", stating that "*the degree of aesthetic profundity is determined by the system*, which in turn contains other degrees of profundity...". System is, moreover, conceived of in historicist terms, clearly related to the notion of style: "*Each phase of evolution creates a new system resulting from everything that preceded it*". This system was predicated on the: "*abolition of form in the expressive means and composition, the replacement of form by universal plastic means, the creation of equilibrated composition*". It is these characteristics, Mondrian maintains, that make Neo-Plasticism "a really new system". This "equilibrium" was to be created by the constant opposition of the orthogonals through which true "*physical-spiritual equivalence is possible*".[105]

This system remained intuitive and relatively simple. In a letter to Van Doesburg of the summer of 1922 Mondrian criticises both Severini and Vantongerloo for having taken "the same path of intellect".[106] Mondrian clearly dismisses "*scientific-mathematical*" calculation as empirical, rather than artistic, analysis, this being achieved through what he called "*intuitive-mathematical*" procedures. However there was an ambiguity inherent to Neo-Plasticism's dependence on "exactness" as aesthetic validation which undoubtedly derived from the influence on it of Schoenmaeker's and Bolland's

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[104] Holtzman 1987, p.82.

[105] Holtzman 1987, pp.159-161.

[106] Holtzman 1987, pp.156-157 & cf. also p.133.

mystic rationalism.

As has been suggested, Mondrian's understanding of mathematics was primarily symbolic. In his 1917 essay "The New Plastic in Painting", citing Aristotle as having identified the abstract with the mathematical, Mondrian wrote that: "Through painting itself the artist becomes conscious that the appearance of the universal-as-mathematical is the essence of all feelings of beauty as pure aesthetic expression". But it was also related to a preoccupation with the quantification of colour. Thus Mondrian went on to claim that: "Abstract -real painting can create in an aesthetic mathematic way because it possesses an exact mathematical means of expression: colour brought to determination".[107] Although he offered no explanation of how colour could be mathematically quantified, this issue was taken up by all the artists we shall consider.

Mondrian himself was clearly ambivalent about the relative values of intuition and calculation in artistic practice. Thus, in a lengthy reflection in a 1939 essay he wrote that: "Free rhythm is exact and logical like mathematics and *once created* it must be followed just as consciously. But he immediately qualified this by stating that: "Mathematics, the science dealing with the properties of magnitude insofar as they can be calculated or measured, has nothing to do with the creation of free rhythm in art". He then crossed out the sentence: "Possibly, as Vantongerloo holds in a deep sense, mathematics has a relationship to the expression of free rhythm in art". (This was restored by his editors). Presumably referring to Vantongerloo's use of elliptical forms Mondrian then wrote: "'Mathematics' that uses morphoplastic means such as geometry (therefore limited form) has a natural character in spite of its abstract appearance" and went on to suggest that "...because free rhythm and mathematics both use the straight line as a means of

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[107] Holtzman 1988, p.35-36.

expression, and because both show the same exactness and certainty, it may still be possible to use mathematics after having created the composition as Vantongerloo claims". [108]

Clearly the calculative, positivist connotations of mathematics troubled Mondrian at the same time as he was attracted by its axiomatic, "determinate" qualities. Because of this uncertainty we will here introduce Mondrian's own distinction between "system" and "method" as a distinction between an algorithmic approach to composition and one which is more flexible and can incorporate both consciously and unconsciously motivated decisions.[109]

We can now look at Neo-Plasticism as the methodical permutation of relations between a limited number of elements. A great proportion of Neo-Plastic works of the "classic" period, 1921-33 are characterized by the presence of a single vertical stretching from top to bottom of the canvas and one and sometimes more horizontals extending from side to side. This occurs so regularly that it is superfluous to single out any particular instance of it. Thus, to give a general description of these works using the Ottolenghi catalogue, they are distinguished by a single vertical, usually to the far left (Nos.370, 371, 372) or right (Nos.352, 353, 356) and a single crossing horizontal usually in the upper third of the canvas (Nos.369, 379, 389) or sometimes just below the mid-line (Nos.385, 395, 402), which together divide the canvas into four unequal quadrants. Each quadrant may be modified through either further linear division (Nos.399, 400), the addition of colour(Nos.385, 391) or more usually the combination of both features (Nos.385, 395, 397), thus embellishing the simplicity of the principal division. In many instances one quadrant is left intact as a white surface without any linear or colouristic complexification,

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[108] Holtzman 1987, p.231.

[109] Holtzman 1987, p.82.

creating a psychologically primary or focalizing rectangular form (Nos.371, 392).

Of the approximately 50 works belonging to this period, 25 are square or near square and it is evident that if, to use Mondrian's distinction, they do not depend upon a system of composition they do depend upon a method which involves differentiating each of these quadrants.

Throughout Mondrian's career, in both the abstract and the pre-abstract phases, he tended to work in closely circumscribed sets or groups. [110]. Acknowledging that there are many possible groupings and subgroupings within Neo-Plasticism, in terms of method rather than system, the classic works can be divided very broadly (some works may be categorically ambiguous, or exceptional). Thus the largest single group involves a relationship between the upper left and lower right quadrants, the upper left being a single colour plane, the lower right a white plane sometimes completely integral (No.389) but more often subdivided to yield a large white square "blocked in" by small colour planes, either partially (No.371) or completely (No.392). (The implicit diagonal relationship established in these latter two works is reversed in Nos.356, 384.)

We can unproblematically identify certain works, (eg. Nos.385, 395, 404) as investigations of, or variations upon, a common structural organization, or other groups, (eg. Nos.385, 395, 404, 391, 408, 381, 373, 386, this set is "open") as exploring a general structural theme, in this instance modulating the upper right hand and lower left hand quadrants divisionally and colouristically. These sets are not necessarily chronologically sequential, Mondrian worked on paintings over many years, often changing "completed" works and having a number of works in progress at any one time.[111]

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[110] On the pre-abstract work see Welsh 1977, pp.25-45.

[111] See Carmean 1979, esp pp.73-89.

Not only did Mondrian alter the placement of lines (within the a priori requirement of the vertical/horizontal opposition) and the distribution of colour (within the red, yellow, blue triad) but he also freely varied both the scale and proportion of his support which in turn affected both the dimension and distribution of the lines and planes.

Texture in Neo-Plasticism, tends to vary from the relatively coarse to the polished, consistent with Mondrian's growing appreciation of modern materials. He was aware of texture or finish as a signifier. In 1936 he clearly stated that:

> The less obvious the artist's hand the more objective the work will be. This fact leads to a preference for a more or less mechanical execution or the employment of materials produced by industry. Hitherto, of course, these materials have been imperfect from the point of view of art. If these materials and their colours were more perfect and if a technique existed by which the artist could easily cut them up in order to compose his work as he conceives it, an art more real and more objective in relation to life than painting would arise.[112]

Although Mondrian's practice did not necessarily conform to its theory, the issue of materials was of major importance to the artists that followed on after him, as we shall see with the work of Victor Vasarely. (The materialist orientation of the above citation shows how far Mondrian had moved away from his earlier transcendentalist preoccupations which should have required a "de-materialization").

From our analysis so far we can draw up a descriptive table of Neo-Plasticism's characterizing elements using the general model of abstract painting set out in Table 2 (which is in fact derived from the Neo-Plastic practice). Substituting the section of variant

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[112] Holtzman 1987, p.298. See also the essay "Home-Street-City" in the same volume, pp.205-212.

elements of that table with the Neo-Plastic elements such as we have described them gives us Table 3.

Support	**Mark**	
Canvas	Straight line, Rectangular plane	Primaries - Red, Yellow, Blue*
Rectangular (inc. Diamond)	Vertical Horizontal	Black, White, Grey
Variable	Variable	Variable
Variable	Oil	Variable

Table 3. Neo-Plasticism's Constitutive Elements.

[* Mondrian would mix the colours or add non colours sometimes to produce a yellow-green and often pale blues and grey whites in order to mitigate the effect of contrast and thus spatial illusion resulting from the use of the pure primaries. He argued that this did not effect the idea of "basic colour".[113]]

In general, manipulation of these elements depends upon a primary left/right division which is supported by a secondary high/low division producing a cruciform organization of planar divisions. The vast majority of classic Neo-Plastic paintings make use of this division, compositional variety being a function of the manipulation of the variant elements listed in Table 2, except for the type of medium and support, which always remained oil paint and stretched canvas, and the orientation of lines, which always

[113] Holtzman 1987, p.36.

remained either vertical or horizontal.[114] It should be recalled that, as Mondrian himself put it: "Everything is experienced through relationship".[115]

Any single Neo-Plastic painting as a permutation of elements may exemplify the use of a variety of differing compositional principles listed in the left-hand column of Table 4 (overleaf). I take it that the formal analysis of Mondrian's paintings conducted so far sufficiently explains these classifications. This is a minimum schematization of relations between paintings, not a description of the actual organization of any particular painting. These principles are in turn systematically determined by "second order" relations such as the requirement of "harmony", "dynamic equilibrium" and so on. Of course any painting, figurative or abstract, makes use of compositional principles such as these. However Mondrian's practice in its self-referential aspect draws attention to or is indexically related to the compositional system itself, an option which is of central importance in Concrete Art, as we shall see.

Since necessarily expansion of plane means expansion of colour or non-colour I have not made a separate entry for the latter under this heading. Similarly I have not made a separate classification for superimposition, since although phenomenally distinct, it can be analytically subsumed within the category of addition/subtraction and unlike these categories is an actual feature of particular paintings rather than a relationship between paintings. Whilst on occasion new paintings were apparently generated from a fragment

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[114] Cf. Anthony Hill's study of Mondrian's painting in terms of topological symmetry and asymmetry based on the linear infrastructure of a polyhedral network. Hill 1968. Hill's analysis proposes an infrastructure/surface composition distinction compatible with our own approach but his analysis is largely in terms of information theory. It is unlike our model since it is not concerned with either use or substance. Both theories are quite different from the claim advanced by Charles Bouleau, that "the cold and pitiless Dutchman" made secret use of the golden section. Given that the golden section is a psychologically-satisfying divisional principle it is not surprising that Mondrian or any artist of reasonable competence with an interest in the harmonious division of the pictorial surface would "hit" upon it as well as other fundamental geometric relations, (eg.1:1, 1:2, 2:3 etc.), by using intuitive methods. Bouleau 1980.

[115] Holtzman 1987, p. 82.

of an earlier one, as for example Abstract Composition, 1939 from Composition in Blue, 1937, this was not common and I will not give the fact of derivation separate acknowledgement as a compositional principle although of course it is operative in a general sense.

Compositional Principles	**Constitutive Elements**			
Expansion or Reduction		Line (Length and Width)	Plane	Support
Addition or Subtraction (Substitution)	Colour or Non-Colour	Line	Plane	
Displacement		Line	Plane	
Rotation				Support

Table 4. Compositional Principles in Neo-Plasticism.

I have selected a series of works (Ottolenghi Cat.Nos. 381, 385, 391, 395, 402, 404, 407, and 408), painted between 1928 and 1932, to demonstrate the way in which these principles are employed to generate individual works (Ill.12). Although I have arranged these numerically the formal transformations are not necessarily chronologically sequential. This series has been selected because of its evident cohesion, Mondrian permitting only very limited variation from the generic form. This form is nowhere stated as such but nevertheless functions like an implicit proposition whose component elements

are variable. This series is however admittedly arbitrary, being determined by my interpretative act. However, most series are clearly self- identifying. The diamond paintings, the 1932-39 group with the doubled or closely spaced lines and which make a shift from a relational to an "all-over" composition, those of the period 1939-42 which introduce "free" colour planes of width similar to that of the black lines, the "New York" series in which coloured lines are substituted for black and superimposition is introduced are well recognized in this respect. Victory Boogie Woogie must be considered as the first of an incomplete series. However, as Carmean points out, Composition in the Square, 1921, (Art Institute of Chicago), although a diamond painting has a compositional structure which relates it to a work of the same year Composition with Red, Yellow, Blue, (Gemeentemuseum), and so to other rectangular works.[116]

Other series are constitutable but there is no need to labour the basic point that within the relatively closed portion of Mondrian's oeuvre all individual paintings derive from the same typological elements and the same implicit systematic infrastructure and the same compositional principles. As comparison between Nos.384 and 392 and 371 and 356 makes evident, in limited cases Mondrian does reverse his compositions; however these are too few to argue for a systematic "reflection" principle at work.

Mondrian's New York paintings mark a radical change in Neo-Plasticism, substituting colour for the black, in the thin, closely spaced lines and re-introducing superimposition into the Neo-Plastic system as a constituent element. Superimposition had featured in his work up until 1922, usually as a passive consequence of not carrying the lines right to the edge of the picture as in Composition with Red, Yellow, Blue, 1921, (Gemeentemuseum), or in some cases as in the 1921 Composition, (M.O.M.A.), as an explicit

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[116] Carmean 1987, pp.30-31.

element. Generally this was implicated with the debate amongst the De Stijl painters (Mondrian, Van Doesburg, Van der Leck, Huszar and Vantongerloo) over the "flatness" of the picture plane.[117] The positive superimposition of the New York paintings, foregrounding the spatial illusionism already inherent in Neo-Plasticism, opened the way for a great variety of mutations in abstract painting leading not just to the work of the American Neo-Plasticians but that of both Pollock and Rothko and hence Frankenthaler, Louis, Stella, Vasarely and Riley and so on. In addition, the New York paintings did away with the line/plane dichotomy introducing even greater flexibility into the possibilities of the Neo-Plastic language (developing the post-1934 theme of "dynamic equilibrium" which was introduced in the essay "True Value of Oppositions") and particularly with Broadway Boogie Woogie, with the multiplication resulting from increased fragmentation, of a systematically disruptive *jouissance*.

I hope that this chapter has established Neo-Plasticism as a "doubly articulated" symbolic form with a "first order" level of self-referentiality which implicates it in a internal semiotics of formal relationships, and a "second order" of other-directed referentiality, which implicates it in the process of infinite semiosis. It is the relations which this founding "language" of Neo-Plasticism has to subsequent abstract practices that will be our concern in the following chapters.

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[117] See the essays on these artist in Blotkamp, 1982.

Chapter 4

VAN DOESBURG AND VANTONGERLOO: DISCOURSE AND LINGUISTIC INNOVATION

Theo Van Doesburg's introduction of the diagonal into the Neo-Plastic idiom, was but a slight alteration to the model of abstract painting instituted by Mondrian, the principle of rotation only being extended from support to pictorial mark. However to Van Doesburg it signified an evolutionary and revolutionary transformation in the artistic perception and conception of reality. The other modification which Van Doesburg introduced, the use of secondaries and "very elementary earthen colours and ochre",[1] does not imply any structural alteration to that model, nor was it a strongly contested issue amongst the artists themselves. The debate between Mondrian and Van Doesburg over the meaning of the diagonal, on the other hand, was intense.

Van Doesburg also left the legacy of Concrete Art. Although this largely consisted of a manifesto and a single painting, the 1930 Arithmetic Composition, (Coll. Witzinger), (Ill.25a), more so than the use of the diagonal, it proved to be his most significant endowment to abstract art.

Compared to Mondrian's oeuvre Van Doesburg's paintings are few, however they are very much in the nature of proving grounds for his theoretical ideas and hence enable us to evaluate the relation between practice and theory in his work. Van Doesburg's theories, it should be acknowledged, were a welter of shifting and often contradictory ideas. I have done my best to pick out their relatively stable themes. Once again, Van

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[1] Baljeu 1978, p.160.

Doesburg's career is well-documented and the following assumes a general familiarity with this body of work.[2]

On the Diagonal

In a May 1919 letter to J.J.P.Oud, which criticizes Mondrian's 1919 "checkerboard" compositions for having "no real composition", Van Doesburg, although identifying himself as a Neo-Plastician ("*all of us* in *everything* we do are working on a single problem"), disavowed Mondrian's "theosophical confessions", and branded him a dogmatist. He instead expressed his own preoccupation with "*movement perpétuel*" and "the fourth dimension", two themes which are closely related in the continuum of ideas which differentiated his practice from that of Mondrian.[3] They were ideas which brought Van Doesburg into active involvement with various artistic practices and movements which maintained differing interpretations of these concepts including Futurism, Dadism, Cubism and, via El Lissitsky, Suprematism and Russian Constructivism (Van Doesburg published theoretical writings from many of these sources in De Stijl, including during 1917-18 Severini's "Avant-Garde Painting", in 1919 a manifesto "The Synthetic Futurist Theatre", essays by El Lissitsky, including his 1922 "Suprematist Development of Two Squares, in Six Constructions", and between 1924 and 1925 three essays by Georges Antheil, the latter citing the oblique as a "new musical dimension" and describing music composed according to its terms as scientific and mathematical). All of these were influential in one way or

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[2] See esp. Baljeu 1978 & Doig 1980.

[3] Doig 1980, pp.25-26. For a more detailed account of Van Doesburg's interest in the 4th dimension see Henderson 1983, pp.313-8 & 321-338. See also Baljeu 1978, pp.67-80.

another on Van Doesburg's formulation of the dynamic, fourth dimensional significance of the Elementarist diagonal.

Mondrian had worked through Cubism and was sympathetic to both Futurism and Dada, but his relationship to Dadaism especially, unlike Van Doesburg's, was relatively superficial.[4] His commitment to the absolute spiritual truth of constantly equilibrated relationships was fundamentally incompatible with Dada's espousal of a philosophy of progressivist negation. On the other hand, it was this element, together with Dada's romanticization of the mechanical as an a-volitional and therefore supposedly "trans-rational" language, which was so appealing to, and influential upon, Van Doesburg in his development of both Elementarism and Concrete Art.[5]

Although in the 1922 essay "The Will to Style" Van Doesburg explicitly supported the Neo-Plastic tenet of "polarity as the meaning of life", he criticized "artistic expressions" predicated on " a still imperfect, dualistic view of life".[6] By 1926, in his first essay on Elementarism, "Painting: from composition towards counter-composition", he was arguing that:"...the need for evolution and the disturbance of the existing equilibrium (achieved through revolution) - a disturbance necessary to that evolution (which is a supreme and ineradicable characteristic of the human spirit) - have dictated another course of development".[7] According to Van Doesburg, with this development, the essentially static

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[4] On Mondrian's interest in Futurism and Dada, see the essays "Two Paris Sketches", Holtzman 1987, pp.124-131, The Manifestation of Neo-Plasticism in Music and the Italian Futurists' Bruiteurs, "Neo-Plasticism: Its Realisation in Music and Future Theatre, Holtzman 1987, pp.148-163.

[5] See his 1923 essay "What is Dada???????", Baljeu 1978, pp.131-5. Whilst concurrently promoting Neo-Plasticism, and then Elementarism, in De Stijl, Van Doesburg published Dada works under the name of I.K. Bonset, whilst in 1922 he launched a second, completely Dadaist, magazine, Mecano. Baljeu 1978, pp.53-5. Both Futurism's and Dada's interest in experimentation with verbal language was taken up by Van Doesburg and he claims his poetic alter ego I.K.Bonset as an Elementarist. See Peterson 1968, Vol.2 p.620.

[6] Baljeu 1978, pp.119-129. See also the essay of the same year "The new aesthetics and its realization". Baljeu 1978, pp.127-131.

[7] Baljeu 1978, p.155. Van Doesburg's 1925 Principles of Neo-Plastic Art which stated arguments close to those of Mondrian was chronologically misleading in that it was largely a re-statement of a text written in 1919.

relationship of the Neo-Plastic binary opposition had been transcended or sublated into pure, free spirit, expressed by the diagonal.[8]

Elementarism, wrote Van Doesburg in the 1926/7 issue of De Stijl ".. *has been born partly in reaction to an over dogmatic and often narrow-minded application of Neo-plasticism, partly as its consequence but ultimately from what is primarily a radical correction of Neo-plastic ideas*". The essay from which this is the opening paragraph, and related essays of the period 1926-28, recommend Elementarism as a correction of Neo-Plasticism's "Euclidean view of life" which is described as "static", "sterile", a "laming of creative potentialities", "two dimensional", a "denial of time and space" and so forth.[9] Van Doesburg identified Elementarism as being everything that Neo-Plasticism was not - heterogeneous, unstable, dynamic, anti-classical and thus an expression of the "new spiritual emotion" that "is always revolting against and contrasting with nature".[10]

Yet the Elementarist works were never intended as a refusal of Mondrian's Neo-Plasticism but rather as an extension of its signifying possibilities. Thus their titles, "Counter-compositions", were not negatively but dialogically related to Mondrian's "Compositions", as their most distinctive formal feature, the diagonal, was similarly related to the vertical/ horizontal principle of composition. This type of composition wrote Van Doesburg, "*adds* a new oblique dimension to the orthogonal, eccentric composition".[11] Van Doesburg experimented with this additive relationship when he combined orthogonal and diagonal elements in the 1929 Peggy Guggenheim and Mueller-Widman Simultaneous

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[8] If, as Baljeu argues, Van Doesburg's ideas were imbued with a Hegelian conception of a universally self-realizing monadic spirit then the "non-opposable" diagonal is an eminently appropriate symbolic form for them. See Baljeu 1978, pp75-80 on this topic.

[9] See Baljeu 1978, pp.151-163.

[10] Baljeu 1978, p.164.

[11] Baljeu 1978, p.159. My italics.

Counter-compositions.(Ill. 14) The result was not a happy one and the problems were only resolved in the following year with Arithmetic Composition, in which both orientations were given fully equal roles in determining the composition. Whilst that painting looked forward to "systematic" abstraction, the debate between Mondrian and Van Doesburg over the diagonal and the differences in the formal language between Neo-Plasticism and Elementarism was a function of the differences of their interpretations of a common object - "reality" - and hence with the status of the Elementarist painting as an indexical icon.

The early Counter-composition XII, 1924,(Coll. Reutersvaerd), Counter-composition V, 1924,(Stedelijk) (Ill.15) and Counter-composition VIII, 1924,(Art Institute of Chicago), are orthogonal compositions, the last two being in the diamond format.[12] The diagonal re-orientation of the Neo-Plastic opposition seems only to have emerged as a signifier of dialogic opposition in the following year.

Van Doesburg's first essay on Elementarism, the 1926 "Painting: from composition towards counter-composition" employed much the same terms of justification for those works as had Mondrian for Neo-Plasticism, albeit less clearly stated. Thus, according to Van Doesburg: "Elementarism seeks to reconstruct an elementary world of *super-sensible*

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[12] See Doig 1980, pp.168-171 on questions concerning the hanging of these two pictures. In his essay "Painting: from composition towards counter-composition", the Chicago painting is called Composition in White, Black and Grey, and identified as the termination of the "classical-abstract composition". See Petersen 1968, Vol.2, p.475. These early works I will treat as nominal appropriations, pre-figuring the formal debate and reserve discussion of the Counter-compositions to those paintings which use the diagonal.

reality",[13] consequently it "is based on entirely different laws which are expressed in totally different forms, colours, lines and tensions".[14]

Influenced by his own extensive involvement with architectural aesthetics, Van Doesburg correlated Mondrian's vertical/horizontal opposition to "natural construction", to which he opposed the "anti-gravitational" Elementarist diagonal.[15] Mondrian, on the other hand, interpreted Van Doesburg's use of the diagonal as a return to the surface appearances which Neo-Plasticism had rejected:"...the plastic expression of the oblique remains an expression of external movement, therefore of natural appearance".[16] Given this, he retorted: "It is therefore astonishing that Neo-Plasticism was accused of ...trying to follow natural appearance, even though abstractly".[17]

Around 1918 Mondrian, with the support of Van Doesburg, and against van der Leck, had rejected the diagonal as appropriate to the expression of "the dynamics of the universe", at about the same time as Mondrian had dismissed "four- or n-dimensionality" as a pictorial concern.[18] As Mondrian had explained in the 1920 essay "Natural Reality and Abstract Reality", the point of using the vertical/horizontal opposition was that it was the most determinative expression of pure relationships. This justified the iconic equation

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[13] Baljeu 1978, p.175.

[14] Baljeu 1978, p.154.

[15] Baljeu 1978, p.163.

[16] Holtzman 1987, p.210.

[17] Holtzman 1987, p.133. I have not considered Mondrian's 1925-6 diamond paintings which are so often regarded as a response to the Elementarist diagonal (or was it because as Troy suggests, Mondrian was concurrently concerned with the extra-pictorial relations of the Neo-Plastic forms see Chap. 3 fn.84 and cf.also Chap. 5 on Bill's use of the diamond format) because whilst demonstrating a linguistic exchange, they do not as such develop the language of abstract painting, which is the concern here.

[18] Baljeu 1978, p.32 & Henderson 1983, p.330. According to Hoeks, the 1919 diamond Composition in the Square was originally painted as a diagonal composition and only subsequently hung *en pointe*, thereby assuming an orthogonal orientation. Blotkamp 1982, pp.59-60

between the "plus and minus" signs and the "Pier and Ocean" referent and the 1917 double-gridded diamond compositions and a "starry night" that lies at the heart of Neo-Plasticism. Thus, wrote Mondrian: "The oblique is excluded, although we would certainly feel it if some object were to stand out here or there. If a tree, for example, were to project above the horizon, then our glance would involuntarily describe a line from it to the moon; this oblique would oppose the horizontal and vertical positions of the landscape in a disequilibrated way, and the *grandeur* of the repose would be destroyed".[19]

By 1926, not only was Van Doesburg arguing that the diagonal was adequate to the "inherently changeable equilibrium" of the new "spirit"[20] but he was able to diagrammatically demonstrate how it was related to the Neo-Plastic orthogonal and how both were related to architectural construction. (See Figs I, III & IV of fig.1 overleaf).

As the formal characteristics of both Neo-Plasticism and Elementarism were substantially similar in their opposition to natural form, in the ordinary sense of figurative representation, the weight of Van Doesburg's charge of "natural construction" had to rest on the aspect of construction. That is, his critique was not concerned with the larger frame of "painting" but, consistent with his evolutionary view of art, assumed Neo-Plasticism as his axiomatic starting point, assimilating its formal characteristics to classical architectural enclosure, and identifying his own work with the new open architecture.

As has been well documented, Van Doesburg's use of the diagonal in Elementarism resulted from his collaboration with Cornelius Van Eesteren on three projects for Leonce Rosenberg in 1923. From this he acquired the experience with axonometry, used in his "anti-gravitational", "fourth dimensional" architectural Counter-constructions that

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[19] Holtzman 1987, p.85.

[20] Baljeu 1978, pp.154-5.

immediately pre-date the Elementarist Counter-compositions.[21]

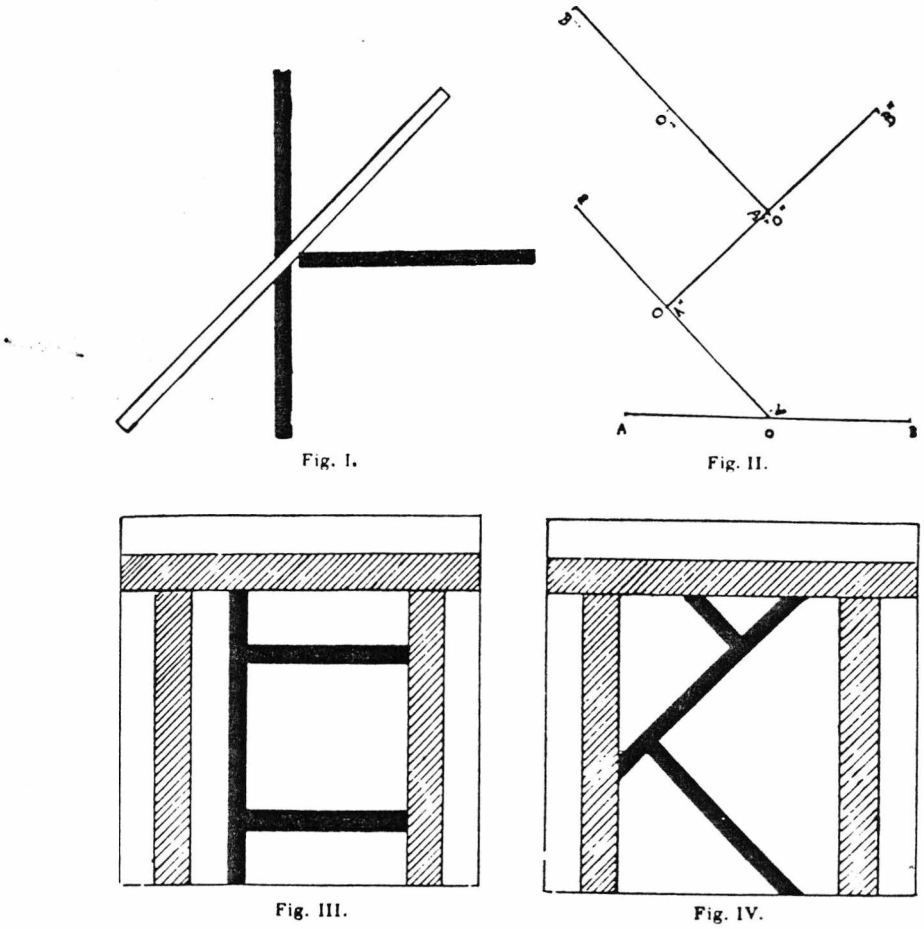

Fig. 1 Illustrations from Van Doesburg's essay "Painting: From composition towards counter-composition."

The portenteous symbolic import invested in Van Doesburg's architectural drawings was also meant to inform his Counter-compositions. However despite the extensive promotion of this idea in the pages of De Stijl, the loss of the illusion of spatial projection found in the axonometric Counter-constructions renders this, let alone the claim that Elementarist instantiated a higher level "polydimensional movement" of the spirit, visually

[21] See esp.Doig 1980 149-165. Architectural collaboration had long been an important stimulus for Van Doesburg's painting, cf. Composition 1917, Bartos Coll with the tile patterns used contemporaneously in the De Vonk house. See Doig 1980, Ills. 15 & 16.

improbable.[22] (Such probability was not restored by the Simultaneous Counter-compositions which hybridize the Neo-Plastic vertical with the Elementarist composition. Compare for instance Counter-composition V, 1924, Stedelijk, with Simultaneous Counter-composition XXI.(Ills.15 & 14).

Comparison of one of Van Doesburg's axonometric drawings for the Rosenberg private house entitled "Colour Construction in the 4th Dimension of Space-Time" (Ill.17) with Simultaneous Counter-composition XXI, (Ill.14) shows the nature of the problem. The former, which is akin to El Lissitsky's Proun painting, with its use of axonometry and its evocation of deep "anti-gravitational" space derived from Malevich's Suprematism, visibly suggests an illusory three-dimensional space which may indeed in turn connote a "higher" space-time dimensionality. However the latter, and this is characteristic of the Counter-compositions in general, lacks spatial illusion, or if it has it, then only to a very limited degree relative to the axonometric drawing. (It may have been that polemically Van Doesburg was trapped between Mondrian's Neo-Plasticism and El Lizzitsky's Proun painting and was unable to use either the orthogonal or axonometry without appearing to be a follower of their respective artistic philosophies. The two-dimensional diagonal in this respect was Van Doesburg's only option as the emblematic form of Elementarism).

As the three-dimensional space of axonometric projection does not translate into the two-dimensional space of Neo-Plasticism which Van Doesburg assumed as the formal starting point for his Elementarist paintings, interpretation of these two styles in terms of a gravitational/ "anti-gravitational" opposition is undermined.

I would suggest here that Van Doesburg failed to distinguish the symbolic coding

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[22] Baljeu 1978, p.165. Cf. the drawing "A New Dimension Penetrates Our Scientific and Plastic Consciousness" which uses axonometry. Petersen 1968, Vol.2, p.539.

of the vertical/horizontal opposition and the diagonal from their actual behaviour in any particular composition. That is, there is no material reason why the relationship between vertical and horizontal elements organized in terms of implied diagonal relationships, as is the case in Mondrian's paintings, should necessarily be any less dynamic or "anti-gravitational than between those organized literally on the diagonal.[23] Van Doesburg's argument was overlooking Neo-Plasticism's anti-naturalism, the "anti-gravitational" character of its symbolic space, and its implicit destructiveness at a formal level in relation to the larger system of "Painting".

Mondrian's use of the "straightened" line was coded in relation to and against the Symbolist identification of the curved or irregular line with natural form. Thus his use of the straight line and plane geometry was justified as an "intensification" or "tensing" of natural form, as the use of primaries was justified as an essentialization of natural colour. Elementarism substantially shared these characteristics and thereby a considerable portion of a common semantic field. But the claim that they went further in the direction of anti-naturalism is another matter. Elementarism, relative to Neo-Plasticism, with its use of the diagonal and complementary and "very elementary earthen colours and ochres" would seem to connote a return to Nature as Mondrian argued. Insofar as the diagonal as a motivated symbol implied an analog disequilibrium - lower/higher and more/less relations - it was a return to a more literal (and materialist) suggestion of a natural referent, not, as Van Doesburg maintained, an enhanced anti-naturalism. As for Van Doesburg's argument with respect to non-Euclidean geometry and architectural structure, Mondrian simply responded: "Who can make head or tail of it all?" [24]

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[23] Or as Lazlo Moholy-Nagy and Alfred Kemeny objected - the diagonal was actually as static as the disparaged vertical/horizontal opposition. See Baljeu 1978, p.70.

[24] Cited Holtzman 1987, p.210.

According to Van Doesburg, in Elementarism, colour was " a means of creating *energy* and also *discord, contrast and variation*".[25] Clearly this was directed against the Neo-Plastic values of harmony and repose. However, such oppositions would seem to suggest that the use of the non-complementary, non-naturalistic triad of primary colours was most appropriate. As Mondrian had written to Van Doesburg in 1920:

> I too have a liking for dissonants. Now I remember that Survage and Vantongerloo always commented on the disharmoniousness of my recent paintings. I believe that equilibrated relationships can exist with dissonants. Don't you? This is in direct opposition to Vantongerloo - it is through him, precisely, that I became clear on the subject, especially after what you wrote me.[26]

Clearly there was at that time no agreement over the specific syntactic function and hence semantic value of colour. What Mondrian meant by "what you wrote me" is not known, however Van Doesburg's Elementarist colour paradigm is closer to that of Vantongerloo's work than that of Mondrian.

Although Van Doesburg continued to affirm the Neo-Plastic tenet that "the universe is only a system of relations"[27], the Elementarist diagonal is a literal, motivated sign of dynamism but is not itself the product of a system of relations as it is in Mondrian's Neo-Plasticism. Mondrian argued that an actual loss of dynamism resulted from the fact that the diagonal was not capable of being opposed ("its disequilibrated expression cannot be

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[25] Baljeu 1978, p.160.

[26] Cited Holtzman 1987, p.134 and cf. also pp.144-147.

[27] Baljeu 1978, p.166.

annulled by the opposition of another line").[28] Although a diagonal is as able to be opposed as an orthogonal, to a certain extent Mondrian's claim is true since there is not so clear an opposition of values as is the case with an orthogonal opposition. As with the surface relation so with respect to depth, Mondrian played element (line, colour) against element in relation to the orthogonal axes of the support. Van Doesburg's Elementarist compositions however, few as they are, tend to concentrate on the division of the surface and to overwhelm this play between surface and depth. The principal exception to this is Counter-composition XVI, 1925,(Gemeentemuseum) (Ill.16a) which we will discuss in greater depth below. Its extensive lateral spread emphasizes the orthogonal relations of the support and so activates an infrastructural counterpoint to the diagonal and so produces visual dynamism.

Van Doesburg's critique of Mondrian's work hypostatized the perpendicular opposition, rather than seeing it as a means by which to create pictorial equilibrium through self-cancelling opposition. (In a different context the American Neo-Plasticians similarly objectified Mondrian work, but with different consequences). Indeed Mondrian himself came only to appreciate the implications of his work in this respect around 1930, (and perhaps as a result of his formal combat with Van Doesburg, with whom he had been reconciled in 1929) when in his writings the meta-coding signified of Neo-Plasticism became "dynamic equilibrium" rather than "repose".

Towards Systematic Painting

Van Doesburg, revisiting a debate in which, as we have seen, he had already engaged with Mondrian, wrote in 1923 that: "*the artist of today*" must "*establish laws*

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[28] Holtzman 1987, p.210.

creating *a system*, that is to say, *to master his elementary means of expression in a conscious manner*".[29] A fully systematic approach to pictorial composition had been manifested in Van Doesburg's early work, most clearly in the 1920 Composition of three paintings,(Coll. Rijkdienst) (Ill.18) Not only does each of the three paintings present a different proportional division of an identically-gridded surface but these divisions are to some extent determined by a common geometrical relationship which governs their hanging.

In his first essay on Elementarism, previously referred to, Van Doesburg illustrated his Hegelian argument of the evolution of the spirit with "a diagram of this inherently changeable equilibrium, in which one easily can follow the line of evolution described above".[30] This evolution was mapped out on a two-dimensional model which unequivocally recalls the permutational principles of his earlier applied design work around 1917-19. Thus in Van Doesburg's diagram (Van Doesburg's Fig. II in our fig.1 above), by sliding A'to the mid-point of the base line AB, a new line A'B' is produced, diagonally reversed and inverted. This elementary process is repeated to yield A''B'' and so on, potentially *ad infinitum*. Allan Doig has analyzed in depth Van Doesburg's use of systematic formal principles with respect to both form and colour in his tile and stained glass designs. Although Van Doesburg used multi-coloured, variably-sized, inter-locking modules which resembled the method which Mondrian was concurrently using in paintings such as Composition in Grey and Brown-Ochre, 1918,(Museum of Fine Arts) Houston, his work differed from Mondrian's in that it used standardized patterns in symmetrical relationships of rotation and reflection, with the colours systematically varied either by

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[29] Baljeu 1978, p.141.

[30] Baljeu 1978, p.155.

progressive substitution or positive/negative alternations.[31] Clearly with his Elementarist diagram, Van Doesburg is pressing these formal principles into a symbolic purpose.

Amongst the Counter-compositions the one to which this diagram pertains most clearly is the 1925 Counter-composition XVI, which Jaffé calls "the masterpiece of the series".[32] This composition is based on the interplay of orthogonal and diagonal grids but reversing the relationship as it is stated in Mondrian's 1917-19 diamond compositions. (Although concealed here, this structural relationship is made explicit in Counter-composition VI, (Coll. Vordemberge-Gildewart), Ill. 19). The mid-point of the canvas establishes the point of crossing for two diagonals. This point corresponds to the point A''(O'') in Fig II of Van Doesburg's essay. The surface is divided into "modules" which are related to each other on the basis of the diagonal, not regularly as in the case of his work with tile and stain-glass designs, but more akin to the kinds of methods described in his 1919 analysis of Vilmos Huszar's painting, that is with a methodical irregularity.[33] The rhythmic relation this involves has a motivated relation to Van Doesburg's attempt to suggest spatio-temporal dynamism. As Van Doesburg wrote in "The Will To Style" in 1922: "The pictorial experience of time is expressed on a predominantly horizontal canvas plane by stressing juxtaposition through the repetition of a certain motif".[34]

In the February 1919 issue of De Stijl Van Doesburg responded to an article by Huszar which had introduced Ostwald's mathematical colour theory to De Stijl in its

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[31] See Doig 1980, esp pp.58-105 & also Troy 1983 & Straaten 1988. Van Doesburg worked out his designs for these projects on graph paper, a technique which he carried over to his painting as is indicated by the preparatory sketch for Counter-composition V (Doig 1980 ill.73) and of course Arithmetic Composition (see fn.38 below) . Cf. also the 1925 sketch which show that Van Doesburg experimented with the Golden Section and the Fibonacci series as the bases for Elementarist compositions. Reproduced Doig 1980, ill 39.

[32] Jaffé 1969, p.15.

[33] Cf. also Lohse's analysis of the 1929 Simultaneous Counter-composition, Coll.Dreier, Kepes 1966, p.139.

[34] Baljeu 1978, p.121.

August 1918 issue.[35] Comparing a work by Huszar(A), based on Ostwald's theories, with a similar but "non-composed" work (B), Van Doesburg wrote:

> While in B a few planes are just distributed rather haphazardly, in A each plane has had its shade and position determined by the creative intuition of the artist. This creative intuition, which determines the content of the work of art (aesthetically determined relationship), is itself controlled in the act of painting by the awareness of mathematics. In this mathematical build-up, the constituent planes are related to each other and the composition as a whole, with the result that the proportion of the overall plane is to be rediscovered in the proportion of each constituent plane. In this way unity in diversity arises.
>
> The same is true of colour or shade. Each shade is given the same relative value in a regular progression from light to dark in the proportion 1-2-4. That again has the closest possible relationship with the proportional dimensions of the planes. Therefore, the geometrical division of the plane is the same as the geometrical division of the colours. In this way a unity, a reasoned harmony, arises through the geometrical relationship of plane to colour.[36]

There are indeed three shades to which can be attributed the numerical values 1-2-4 but this "geometrical division" (ie. one which correlated with a triangle drawn within Ostwald's colour circle,) is not the "same" as the division of the surface plane. According

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[35] Doig 1980, pp.86-8.

[36] Cited Doig 1980, pp.88-89.

to this division, colour planes are constituted in varying height and width relationships on a progression 1-2-3-4, and their distribution accords with the over-arching Neo-Plastic requirements of non-repetition and non-symmetry. Whilst colour is distributed so as to establish an overall balance between the orthogonal and diagonal axes, without symmetry or repetition, there is no apparent proportional relationship between form and colour. Similarly, the planar divisions are not regular for the surface as a whole, the vertical divisions in the lower half being slightly higher than in the upper half. (This is difficult to detect with certainty from a reproduction, particularly as the work is framed, obscuring the outermost edges of the canvas).

In Van Doesburg's terms these variations and irregularities are determined by "creative intuition" and constitute "content". The "non-composed" work on the other hand for Van Doesburg lacks just this systematic variation, its irrationality is not "intuitive" but "haphazard". The planar division of the surface is purely regular but at the same time lacks systematic manipulation. Whilst three shades of colour are used there is no balanced distribution in relation to either the proportions of the support or to the planar divisions. Thus there can be no signifying or in Neo-Plastic terms, "aesthetically determinate" variations from an implied infrastructural system.

We can replace the expressively causal connection of "determination" in Neo-Plasticism with the semiotic association of signification, or more properly, symbolization. Recalling Van Doesburg's vague claim that intuition was controlled by "mathematical awareness", this conjunction now implies the possibility of painting as a symbolic calculus whose content is expressed via the sociolectal connector of "exact technique". The overdetermined notion of the rational (which was also "trans-rational", and "irrational") serves as a conceptual device by which to measure aesthetic content through systematic

variations at a formal level within the field of a closed system of signifiers (the pre-established axiomatic systems of geometry and mathematics).

Van Doesburg regularly takes the structural principle of an applied design as the basis for a painting or the composition of one painting as the basis for another. In the first situation, for example the gouache and ink study "Decentralized Composition", 1924 is derived from his design for the floor of the University Hall, Amsterdam (Ills. 20 & 21) and comparison of Counter-composition XVI with his designs for the Café Aubette immediately establish the source of that painting. In the second instance Counter-composition V for example, provides the structural basis for Simultaneous Counter-composition XXI (Ills.15 & 14).[37] The implication is that the armature itself in terms of its inherent structural value is the bearer of transferable meaning (see the sketch for a "Counter-construction", 1923, Ill. 23). Although this factor of derivation is characteristic of Van Doesburg's work as an overarching compositional procedure, as is the case with Mondrian's work, it is not acknowledged as such, as it is with Lohse's systematic development of the notion of the series or "theme" and the concept of the *prototype-départ* established by Vasarely.

Returning to Counter-composition XVI (and cf. the diagrammatic analysis, Ill.16b), this composition also plays off the irregular positioning of the surface planes against a regular infrastructure (although in a more subtle way than in Huszar's painting). Aside from the accidentals of execution this is achieved by slightly varying the placement of the black bands in relation to an underlying divisional line . Vertical lines connecting the end

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[37] And similarly Arithmetic Composition is derived from a series of drawing called (with an obvious nod to El Lissitzky) "From Surface to Space: Six Moments of a Space-Time Construction (with 24 variations) Formation of a Diagonal Dimension" that Van Doesburg made in relation to his 1929 essay "Film as Pure Form". See Van Doesburg 1966 & cf Ills. 25a & b.

points of the central diagonals establish the points of intersection for further diagonal crossings and, as this is not a square format, the basis of the compositional guidelines in its lateral extension.[38] As Mondrian's Neo-Plastic paintings presented an orthogonal surface composition with implied diagonal relationships, so in this painting there are implied orthogonal relationships between top and bottom and left and right, which are emphasized by the distribution of colour planes around the lighter and proportionally extensive central area, a feature which tends to suggest the incorporation of Mondrian's colour/non-colour, form/space equation. This painting also manifests another feature which Van Doesburg appreciated in Neo-Plasticism, its "excentricity", all colour planes here abutting the support edge, simultaneously drawing attention to its rectangular structure and encouraging a cross-relating of forms and colours.[39]

The more gestaltist (I use this term with circumspection as I have only seen these works in black and white reproduction) Counter-composition XV and Counter-composition VI, works of 1925, on the other hand, are less playful. Like Mondrian's two 1919 diamond compositions, "composition" in these works is achieved by variable emphasis of the uniformly structured surface but with considerable stricture and without the atmospheric effects to be found in the earlier works. Detouring slightly, Van Doesburg abandons this structural rigour in the 1929 Simultaneous Counter-composition (M.O.M.A), in which he employs a literally "unbalanced" mode of composition. (Ill.24). If we recall our discussion of Mondrian and the relating of his late works to Pollock's painting, we can read Van Doesburg's painting as a disruptive development of the oppositional tension between surface and depth. This is not of course the direction which Van Doesburg took

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[38] This painting also resembles closely Vantongerloo's diagrammatic analysis of Van Der Weyden's Descent From the Cross, see Vantongerloo 1924, ill 22.

[39] See Baljeu 1978, p.159.

up and Arithmetic Composition, his final work, in explicitly foregrounding the mathematical determination of the composition, is a kind of revisionist response to the incompatibility of "disequilibrium" in his material practice with the ideological commitment to art as a scientifically lucid procedure.

Finally, in the 1930 Arithmetic Composition all forms are aligned with the diagonal and perpendicular divisions of the support, the actual composition depending upon a proportional division, moving from both left to right and top to bottom, in the ratio 1:2:4:8, this being made explicitly legible. These perpendicular relations exactly determine the dimension and distribution of the planes whose diagonal orientation is in turn determined by its metasystematic symbolic function. This represented a marked shift from the kind of stance adopted by Van Doesburg in his 1919 analysis of Huszar's painting in that now it is not the intuitional factor which is considered primary but the kind of systematic procedure with which he was familiar from his architectural projects.

Concrete Art

Despite his 1919 reservations about Mondrian's checkerboard paintings, Van Doesburg's systematic approach to pictorial composition implies a rejection of Mondrian's commitment to an intuitively-guided process of picture-making. Although in 1917, Mondrian had identified the "New Style" with "the mathematical artistic temperament of the future", the implication of conscious calculation which this meant potentially conflicted with the intuitional rationale of Neo-Plasticism.[40] In Neo-Plastic works in general, the already vague notion of "mathematical" composition had no actual formal correlate, indeed, there was a studious avoidance of exact calculation. However, Van Doesburg in 1926, in

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[40] Holtzman 1987, p.59 fn. t.

his first essay on the "Counter-compositions", albeit in a typically unclear and syncretistic manner, wrote that:" an attempt has been made to broaden the concept of space in terms of mathematics, providing a new dimension to our imagination (intuition or consciousness), and through continually novel attitudes to the already broadened concept of plasticism".[41] With Elementarism and then Concrete Art, Van Doesburg developed a significant step towards the full acceptance of mathematics as a supra-individual compositional procedure by which to effect the transition from "intuition to certitude" in artistic composition and thereby, given the axiomatically true status of mathematics, the realization of art as "a universal language".[42]

This is of course reading Van Doesburg's work in hindsight and from the termination point of Arithmetic Composition. It should not be forgotten that Van Doesburg's shift to arithmetical principles of composition was immediately stimulated not by his appreciation of system *per se* but by his attempts to incorporate the fourth dimension in painting. Thus he wrote to Hanna Höch in 1924 that: "Artistically I have been developing a schematic representation for the new space. Have now acknowledged the tesseractic space as the only universal space in which to express form (including film). I am quite sure that mathematical and lucid knowledge is needed, and that all form, architecture, Proun etc experiments no matter how interesting are based on aesthetic speculation".[43] In the essay "Film as Pure Form" for which he produced the series of drawings from which Arithmetic Composition is derived, Van Doesburg distinguished the sequential time of the film frame from the fourth dimensional time symbolized by the

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[41] Baljeu 1978, p.155.

[42] Baljeu 1978, p.181-5.

[43] Cited Straaten 1988, p.191.

diagonal. It should be noted that despite the rationalization that this painting involves it owes much to the spatial metaphorics of Malevich's Suprematism. The four diagonally disposed planes are, if not "free", then in contrast to the orthogonal division of the canvas, Whilst this, combined with the gradation of scale, is suggestive of movement in space and time, the separation of form from surface qualifies the purely systematic division of the surface, giving a more illusionistic and "naturalistic" suggestion of depth which has however, no recognizable natural referent. These implications would be taken up again by Vasarely, as we shall see.

The 1930 essay "Concrete Art. The basis of concrete painting" (perhaps as a response to Mondrian's 1926 listing of the six "General Principles of Neo-Plasticism") lays out the six basics of the new conception of painting and is worth citing in full as it clearly states the values Van Doesburg attributed to it and the implications which might be read from it.[44] These were:

> 1 Art is universal.
>
> 2 The work of art should be fully conceived and spiritually formed before it is produced...
>
> 3 The painting should be constructed completely with pure plastic elements, that is to say, with planes and colours. A pictorial element has no other meaning than what it represents, consequently the painting possesses no other meaning than what it is by itself.
>
> 4 The construction of a painting and its elements should be simple and direct in its visualization.
>
> 5 The technique should be mechanical, that is to say, precise rather

[44] Baljeu 1978, pp.180-1 and Holtzman 1987, p.214.

than impressionistic.

6 Absolute clarity should be sought.

Although the influence of Russian Constructivist and Productivist materialist aesthetics is immediately apparent, once again it should be remembered that Van Doesburg maintained the essentially metaphysicalist position of De Stijl when he asserted that with Concrete Art "we establish the period of pure painting by constructing *spiritual form.* Creative spirit becomes concrete".[45]

Whereas in Neo-Plasticism the "mathematical" criterion affected only two (type of mark and orientation) out of eight features of the schema laid down Table 2 above, in Van Doesburg's Concrete Art, because of the proportional division of the surface, it is extended to four features, (type, orientation, dimension and distribution). Although not specifically mathematicized, the smoothness of texture is determined by the commitment to a "mechanical" finish. Somewhat surprising, in view of his architectural involvement, and the influence of Russian Constructivism on his ideas Van Doesburg showed little concern with the materials of paintings as constructive materials.[46] Like Mondrian, throughout his career, Van Doesburg continued to use the traditional oil on canvas combination and its optical condition, choosing to renovate the technique with which the material was used rather than the material itself. The remaining two features of this model (colour and non-

[45] Baljeu 1978, p.181. Van Doesburg was already using the term "concrete" in 1926: " Is not an elementary painting, which is to say a certain composition of plane-linear colours, organic in itself, more concrete than a similar composition which is nonetheless veiled by the illusion of natural-organic form?". Baljeu 1978, p.157. Baljeu suggests that the name Concrete Art was derived from Schoenmaekers' philosophy of "plastic mathematics" which he described as "visual-concrete pantheism", and that, after adopting a Hegelian transcendentalism with Elementarism, Van Doesburg was shifting to Schoenmaekers' mathematical ideas of the balanced relationship between spirit and matter. Baljeu 1978, p.98-100.

[46] Van Doesburg along with El Lissitzky and Hans Richter were founder members of the International Union of Neo-Plastic Constructivists. On the relationship between Van Doesburg and El Lissitzky see Baljeu 1978 pp.48-66 and Mansbach 1980. Whilst the influence of Russian Constructivism on Van Doesburg is undeniable it is more important at the theoretical rather than the practical level.

colour) are unquantified despite Van Doesburg's awareness of the challenge this presented.

Not only were Van Doesburg's ideas the "unsettled mixture" of notions derived from Hegel and Schoenmaekers as Baljeu suggests (see fn.9 above), but the influence of functionalist or "mechanical" aesthetics is increasingly evident in Van Doesburg's writings from around 1921, most notably in his series of articles "The Task of the New Architecture", "The Significance of the Mechanical Aesthetic for Architecture and the other Professions" and the 1922 essay "The New Aesthetic and its Realization".

Whilst I think it would be mistaken to underestimate the continuing legacy of dualistic metaphysics in Van Doesburg's ideas, he was undoubtedly swept up by contemporary enthusiasm for the machine (Le Corbusier was particularly influential) and consequently for the mathematical determination of compositional relations and this contributed to a tendency towards a systematic, cerebral approach to painting.[47]

Van Doesburg principally interpreted the "mechanical" as the use of rational and re-iterable procedures of construction (in architecture) and composition (in painting) and precise techniques of execution. A materialist orientation seems evident from his 1926 claim that it would be necessary "to accept pure MATTER as the most precise and superior means of expression",[48] and, in another essay that: "Each colour - as pigmentation or as matter - possesses an independent *energy*, an *elementary force*".[49] However in 1930 in the sole number of the journal Art Concret, he wrote that: " In painting colour represents the only truth. Colour is a permanent energy which is determined in opposition to another colour. Colour in painting is the one element which

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[47] See Doig 1980, pp.130-136 for further discussion of the influences here.

[48] Baljeu 1978, p.155.

[49] Baljeu 1978, p.160.

possesses only the meaning inherent in its own nature. Painting is a means through which thought is expressed in a visual manner: every painting is a colour-thought".[50] This statement, particularly the notion of a "colour-thought" is suggestive of the Symbolist theory of correspondences, despite the fact it is one of Van Doesburg's six sternly rationalist "comments" on his Concrete Art manifesto.

Although rationalism was fetishized in Van Doesburg's idea of Concrete Art it was not reduced to a purely materialist aesthetic. The "colour thought" had a symbolic and metaphorical interpretant as is suggested in the final issue of De Stijl: "A cool and tense surface will be more significant than a nervous touch of the brush or warm colouring. Spiritual maturity will be more effectively demonstrated through the use of grey, yellow and green than through red and brown (one may use ochres if these are conceived as representing material reality).[51] It is not clear what was meant when Van Doesburg continued: "A single colour is sufficient to create a work of art, provided that this colour possesses such power, such mathematical significance, that it is able to evoke all other colours through the power of measure, direction and position", however its rhetorical function is.[52] Van Doesburg did not pursue the subject of the quantification of colour, however the introduction of the numerical determination of the composition's form could suggest some kind of realization of Mondrian's 1917 claim that: "Abstract-real painting... possesses an exact mathematical means of expression: colour brought to

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[50] Baljeu 1978, p.182.

[51] Baljeu 1978, p.184.

[52] Baljeu 1978, pp.184-5.

determination".[53]

Van Doesburg did not have the opportunity to develop the implications of Arithmetic Composition. However to use the key terms of one of his 1930 essays, in the move from an "intuition" of external reality to the concrete "certitude" of manipulations of an a priori system there is a tendency towards a materialist recoding of the formal elements insofar as this implied the constitution of painting as a properly self-referential object (admitting that this always has metalinguistic referents).[54]

Georges Vantongerloo has been mentioned a number of times already in relation to the debate between Mondrian and Van Doesburg over the issue of the systematization of painting and it will be of interest to look at his practice in relation to their work.

Georges Vantongerloo

Particularly given that Van Doesburg published an extensive series of "Reflections" by Vantongerloo in De Stijl between 1918 and 1920 and that the latter's ideas were discussed by Van Doesburg and Mondrian, it is surprising that there is no evidence of Van Doesburg's response to Vantongerloo's practice of using geometric forms as the basis for pictorial composition (according to Vantongerloo, Van Doesburg "has read Vantongerloo's 'Reflections' but is careful not to say so".[55] (On the other hand neither is there evidence of Vantongerloo's response to Van Doesburg's work).

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[53] Holtzman 1987, p.36. Van Doesburg used colour systematically in his 1920-21 architectural collaborations with C.R. De Boer, intending to create a balanced relationship of position and counter-position, movement and counter-movement, analogous to the point/counterpoint relationship in music. However Arithmetic Composition is in black and white and there is no evidence to suggest that Van Doesburg attempted to quantify or systematize his use of colour in his Elementarist paintings

[54] See the essay "From intuition to certitude", Baljeu 1978, pp.185-6.

[55] Washington Corcoran Gallery 1980, p.210.

Vantongerloo's De Stijl essays explore a familiar discursive terrain, interpreting abstract painting metaphorically in terms of the universal laws of "unity, equilibrium, harmony",[56] albeit in an even more allusive way and with a scriptural, liturgical tenor: "Creation is in all and the Force is in creation. It is unity and all those who see the unity, know that everything is only one"; and, " What I say to you is not of my own, but the force that lives in me and it is from this content that I say what I think".[57] Re-iterating the generally-held understanding of abstract painting as an indexical icon, "the image", wrote Vantongerloo is "the vestige of the infinite" or " the invisible made visible to our spirit".[58]

Influenced by Schoenmaekers, the main drift of Vantongerloo's ideas is towards the Neo-Plastic doctrine of eternally-balanced opposites ("Horizontal and vertical, movement and countermovement, man and woman, time and space, are complementaries"[59]), and at least until 1937, his pictorial practice adhered to the Neo-Plastic perpendicular opposition, always within the format of the conventionally-hung rectangular support.[60] Like Van Doesburg, Vantongerloo used secondary colours but he also experimented with different materials. Much of this was in relation to his sculpture and post-Neo-Plastic painting and lies outside the scope of this study, although from around 1933 he began using a plywood support, the hard surface of which enhanced the appearance of an "objective" finish signified by the absence of brushstrokes.

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[56] Petersen 1968, p.149.

[57] Petersen 1968, p.373 & p. 288.

[58] Petersen 1968, p.152.

[59] Petersen 1968, p.284.

[60] The influence of Schoenmaekers is discussed by Gast in Blotkamp 1982, p.236.

(Vantongerloo's early De Stijl paintings also used a similar type of framing to those of Huszar. Making an "abductive inference", this seems to develop the idea of the painting as a constructed object. In Vantongerloo's small 1921 Triptych, the reference to the structure of an altarpiece is quite obvious).

Whereas Van Doesburg in his early Neo-Plastic works had maintained, at least in a rhetorical sense, the supposed "abstractive" relation to nature, Vantongerloo tended to derive his own compositions from other works of art, at least up until 1921.[61] Composition indigo-violet (minor seventh), 1921, (Private Collection) is based on Roger van der Weydens' Pietà, as Composition from the Equilateral triangle (Ill.26a) is derived from van der Weyden's triptych The Seven Sacraments. It reappears inverted as the central panel of Vantongerloo's own Triptych. These diagrammatic analyses are related to the types of techniques used in 19th century academic drawing instruction, in which Mondrian received his own training.

The surface composition of Mondrian's and Van Doesburg's abstract painting, as we have seen, depends upon an infrastructural armature. This was also the case with Vantongerloo's compositions with the difference that their armature is not one which is simply consequential upon or derived from the actual structure of the support but rather one which is imparted to it from a repertoire of independently existing geometric forms - triangles, squares, circles and so on - which are, as it were, interpellated between support and surface in order to guide the actual composition.

Vantongerloo's indebtedness to the Pythagorean and Neo-Platonic tradition of mystic interpretation of geometry and mathematics is indicated in his first essay in De Stijl where he cites the equilateral triangle as a means of making the invisible infinite, visible,

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[61] Cf. his 4 stage analysis of a drawing of a seated nude. Petersen, 1968, p.151.

because it is itself a form able to be systematically sub-divided or extended infinitely.[62] Vantongerloo used it as the basis for a number of compositions as we shall shortly consider, the unseen "unifying" function in relation to the "destruction" of the surface in the compositional process providing a literal instantiation of his idea that the work of art makes the invisible visible. It is he claims, "by the unity of destruction of the visible and construction of the invisible in equilibrium that you create unity".[63] Accordingly, artistic creation is a process which: "transforms a geometric figure into another form, equally geometrical, but for the realization of an aesthetic aim. A given primary form and its elements are the basis of the development. But through the transformation towards an aesthetic aim, the primary forms and their elements cease to be visible".[64] The concealed "primary form" of Vantongerloo's painting is usually indicated by the title.

I have included a diagrammatic analysis of Vantongerloo's 1929 Composition from the Equilateral Triangle,(Museum Sztuki) (Ills.26a & b) to show how this relationship worked in practice.[65] The primary form referred to in the titles is inverted and symmetrically overlapped, providing the basis for the division of the support into a non-equilateral 4x4 grid. As my diagram indicates all but four of the points of intersection of the verticals and horizontals of the painting are determined by the intersection of the grid and the two triangles. The points which are not thus fixed, two each lying on the lines AB and CD are determined by squaring the width of the section of the planes, of which they

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[62] See Petersen 1968, Vol. 1, pp.149-154 & also his 1926 "Reflection" Vantongerloo 1948, pp.19-27 & also his essay "Plastic Art (S=L2, V=L3)" in *Cercle et Carré* **1930**, No.2, n.p.

[63] Petersen 1968, p.508.

[64] Vantongerloo 1948, p.22.

[65] Vantongerloo provides diagrammatic explanations of three of his compositions in Vantongerloo 1948, pp.23-27.

form a part, lying above the middle and lower quarter lines respectively.

In 1937 Vantongerloo abandoned the Neo-Plastic axiom of the work of art as a composition of determined relations and began using "indeterminable" curved lines and planes (which Mondrian had castigated as "an expression of lines and forms from fantasy in relationships of fantasy"[66]), in his accordance with his belief in the "incommensurability" of the infinite.(cf.Ill.29a) As he stated his case subsequently: "Euclidean geometry, extremely useful and convenient in everyday life, does not offer all the possibilities necessary to express what we feel of the great mystery".[67] In so doing he was bringing to the surface forms which he had already used covertly in the construction of his earlier compositions.

The general diachronic tendency of Vantongerloo's work is to use more unusual primary forms such as ellipses and parabolas, which were stated in the titles, either as such or expressed in esoteric (to the mathematically untutored) formulae such as "$-x^2 +3x =10 =y$" or simply described as "functions". However the approach to composition remains the same as for our example.

Around 1936/7 Vantongerloo introduced a series in which the surface composition is no longer based on a concealed "third" element but is identical with a proportional division explicitly stated by the title (for example, Coll. Gerstner Höchberg), (Ill.28) This remains true for a time even after the 1937 shift to a symbolic "incommensurability" as can be seen in Variants, 1939 (Coll. B. Bill) (Ill.29a) It is of interest that Max Bill, whose

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[66] Holtzman 1987, p.313 & cf. Mondrian: " The concept of beauty is ... commensurability in a variety of relationships of ratios, etc." Holtzman 1987, p.51. In his 1938 essay "The Necessity for a New Teaching in Art, Architecture, and Industry", from which this statement is taken, the diagrams of "inexact" compositions which Mondrian uses employ forms very similar to those in Vantongerloo's new works, although Mondrian does not make any explicit reference to him or his works. See Holtzman 1987, pp.311-7.

[67] Vantongerloo 1948, p.3.

works shall be considered in the next chapter, wrote to Vantongerloo *à propos* of this painting, of which Vantongerloo had sent him a photograph, that without additional information "I do not understand how it is made and whether or not it is construction". Vantongerloo replied: "It is made from the harmony I sensed".[68] Comparison of the finished work with its study (Ill.29b) shows that there is indeed an underlying structure to this work although in later works the tendency is to ever freer compositions.

There are a number of points to be made about Vantongerloo's painting in general:

i. Whilst all the points of division correlate to an independent "primary form", the fact that the selection of this and the compositional decisions based on it, with respect to both structure and colour, remain the artist's prerogative was crucial to Vantongerloo's claim for the specifically artistic content of his painting. Much as with Van Doesburg's apotheosis of the intellectual with Concrete Art, this implies a valuation of the conceptual over the material in artistic practice.

ii. As with Mondrian's and Van Doesburg's painting, Vantongerloo's approach permits a potentially infinite number of variations on a "primary form" or basic schema, which can be complexified.

iii. Unlike Mondrian and even more so than with Van Doesburg, Vantongerloo's work shows a strong identification with scientific practice. Compare for instance his 1919 statement: "The Artist has always had the same goal but only intuition has carried him to it", with his position in 1926: "I hold that the word intuition is without meaning, for the simple reason that intuition does not exist".[69] This extended to an attempt to submit the

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[68] Cited Washington Corcoran Gallery 1980, p.127.

[69] Vantongerloo 1924 p. 5 & 1948, p.21. and see particularly his essay "Plastic Art (S=L2 V=L3)", fn.62 above

use of colour to a system of measure. Vantongerloo claimed to have found the "exact space of every colour".[70] However the demonstration of his theory which he gives in his 1924 publication Art and the Future is far from clear. Using the analogy of the seven tone musical scale and musical harmonics Vantongerloo undertakes a complex set of mathematical calculations intended to demonstrate the exact relational space of a seven hue colour scale (red, yellow, blue, green, orange, violet, indigo). These calculations apparently assume the autonomy of colour as a physical phenomenon and are based on some kind of fixed wavelength which Vantongerloo calls the "spectrum of the absolute", and which according to him:

> ...contains different spectra whose bearing is always similar - sound, heat, light, in visible rays, without counting the spectra which are unknown to us and which certainly have an immense power. Between sound and heat there is an infinity of vibrations imperceptible to our senses but which will one day be utilized by man....[71]

Obsessively detailed as his calculations are, they are never explained in relation to the practice of painting, nor is there any evidence from his paintings how this system was supposed to work.[72]

Whilst the work of both Van Doesburg and Vantongerloo conformed to the range of sign categories of abstract painting initiated by Mondrian's work, their practices slightly

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[70] Vantongerloo 1948, p. 10

[71] Vantongerloo 1924, p.27. See also his 1929 "Reflection" in Vantongerloo 1948, pp.34-8 which is as mystifying.

[72] The quantification of colour has long preoccupied artists though with little success. See Gerstner 1986. Mondrian in 1920, initially impressed by what he knew of Vantongerloo's ideas as a development "for Neo-Plasticism in general" shortly thereafter rejected these ideas because they were derived from a purely rational calculation. Blotkamp 1982, p,63.

modified or extended its range of compositional principles (Table 4, Chapter 3), through the introduction of the diagonal by Van Doesburg and of non-rectilinear forms by Vantongerloo. The new range of combinatory options resulting from these changes is set out in Table 5 below. Given that Mondrian's practice established rectilinearity as a norm, Vantongerloo's innovation may be described as a "deformation". For the sake of convenience I have subsumed the work of all three artists under the title of "De Stijl painting".

Compositional Principles	**Constitutive Elements**			
Expansion or Reduction		Line (Length and Width)	Plane	Support
Addition or Subtraction (Substitution)	Colour or Non-Colour	Line	Plane	
Displacement		Line	Plane	
Rotation		Line	Plane	Support
Deformation		Line	Plane	

Table 5: Compositional Principles in De Stijl painting.

Postscript: De Stijl painting as dialogue

Although proportional relations had been a feature of Mondrian's painting with respect to both form and colour, Vantongerloo's and Van Doesburg's anti-intuitive,

scientific orientation led them both to determine their work by explicit, internally-governed systematic principles of composition. Although this was not a necessary consequence of Mondrian's ground-breaking move into abstract composition (itself taking off, as it were, from the self-imposed *terminus post quem* of van der Leck's experimental work), both artists rejected or modified the vertical/horizontal opposition and the six colour/non-colour palette of the Neo-Plastic paradigm. Whereas Mondrian's work had been based on the natural world, however much reduced, Van Doesburg and Vantongerloo effectively began their work from the *hortus conclosus* of the a priori. Co-opting the mythical status of Euclidean geometry and mathematics both artists attempted to justify abstract painting in terms of axiomatically valid symbolic systems. However there was a good deal of difference between Vantongerloo's understanding of the artistic process and Van Doesburg's celebration of a meta-humanistic, mechanical aesthetic.[73]

Van Doesburg's conception at least as stated by Arithmetic Composition ultimately relied on a "closed" understanding of mathematics and consequently implied "closed" compositions. Van Doesburg's death leaves unanswered the question as to whether he would have chosen to follow the formal implication of "serial" composition or whether he would have changed his procedure in the light of his constantly-present meta-themes of "dynamism" and "*movement perpétuel*".

It was precisely this distinction which directed Vantongerloo towards the "incommensurable" and the introduction of a random factor which the curvilinear signified ("if the oblique line is dynamic, the curvilinear gives only agitation").[74] However this

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[73] Bois 1983 argues that Van Doesburg rejected functionalism around 1923/4, however the evidence he supplies does not suggest unilateral acceptance of this, particularly given Van Doesburg's polemical contradictoriness.

[74] Cercle et Carré 1930, No. 2, n.p.

meant a rejection of the Neo-Plastic right angle and a return to the kind of indeterminable natural forms which were its point of departure.

Despite Van Doesburg's avowed commitment to a perception of reality in terms of Einsteinian space-time theory, through his continued adherence to Euclidean geometry and the greater part of the two-dimensional compositional methods of Neo-Plasticism, his painting failed to visually demonstrate any suggestion of this. Vantongerloo, on the other hand, with his post-Neo-Plastic works, not only demonstrated a greater artistic flexibility but showed especial percipience in finally symbolically siding (at least we can say with hindsight) with the "indeterministic", subjectivist theoretical position of Bohr, Heisenberg and modern quantum physics over Einstein who maintained an allegiance to a classical deterministic and causal theory of the universe.[75]

Although in 1922 Mondrian criticized him for his conscious calculation, Vantongerloo's post-1937 work can be seen as ultimately leading to Pollock's subjectivist linear expressionism, certainly more so than Mondrian's late painting (or Van Doesburg's exceptional Simultaneous Counter-composition), at least notionally if not circumstantially.[76] However it is precisely the calculative nature of Vantongerloo's work as well as Van Doesburg's Arithmetic Composition, which was taken up by Max Bill and Richard Lohse amongst others, and which is the most legitimate inheritance of Mondrian's work. It is to the latter artists that we shall now turn.

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[75] Popper 1982, pp.1-34

[76] Although Vantongerloo's work was largely confined to Europe his post Neo-Plastic works were shown quite extensively in New York in the early 1950s, including in 1950 at the Museum of Non-Objective painting. See Washington Corcoran Gallery 1980, end paper.

Chapter 5

SWISS CONCRETE ART: MAX BILL AND RICHARD LOHSE

As the writings of Max Bill and Richard Lohse make clear, both these artists understood their practice as a "second generation" realization of the tendency towards functionalist or "scientifically" systematic approaches to abstract painting inherent in the work of Mondrian, Van Doesburg, and Vantongerloo (which I will refer to generally as "De Stijl painting"). Whilst there are substantial continuities here at the level of meaning this also meant a continuation of the shift in the theoretical frame of abstract painting away from Schoenmaekers and Hegel towards Poincaré and Jeans, from Theosophy to statistical theory. As Lohse put it in 1968, in the "new style" of abstract painting (ie."Concrete Art"), the "standard elements" of painting "...are no longer compelled to be expressive and...they no longer represent a stylistic expression of the *Weltanschauung* of early Constructivism".[1] I want in this chapter to pursue the symbolic implications of this transformation and its formal characteristics.

Although Bill's sculpture represents an important aspect of his work I will only be concerned here with his painting. Further, within this limitation I will not be concerned with his "open" form paintings with their spatial implications such as Nine Accentuations 1944-49, Limited and Unlimited, 1947, or Six Centres of Energy, 1949-51. These show

[1] Lohse, 1968, p.147. Lohse is here rejecting "subjective" expression rather than "expression" outright which he believed that the new "spiritual" condition required to be correlated with a non-arbitrary "method". "Constructivism" is Lohse's generic term for his own work and that of the "first generation" of abstract painters.

the influence of Vantongerloo's painting after 1937; however in Bill's case they are largely limited to a period between the mid-1940s and early 1950s. To incorporate these in this study would produce a wider descriptive range of abstract painting's linguistic possibilities but my concern in this chapter is to follow the conscious development of the systemic base of abstract painting as established by those artists already considered.

Bill's 1936 "Concrete Art" manifesto is directly descended from Van Doesburg's own six point Concrete Art manifesto and represents the inauguration of what is commonly known as Swiss Concrete Art.[2] However this term, like "Neo-Plasticism", "Elementarism" and Van Doesburg's own "Concrete Art" refers primarily to a broadly identifiable approach to pictorial composition and hence a set of stylistic conventions rather than a formalized union of artists. I will discuss Bill's work in relation to that of Lohse, the other best known figure of Swiss Concrete Art.

The Meaning of Concrete Art

Between 1927 and 1929 Bill attended the Bauhaus and in accordance with its ideal he has subsequently had a highly productive and diverse career beyond the fields of painting and sculpture, in applied design, architecture and engineering. This "functionalist" frame of reference is important for understanding the semantic field of Bill's Concrete painting and its relation to De Stijl abstraction. As Bill himself put it: "It is the goal of concrete art to create objects for spiritual use by analogy to the manner in which man

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[2] On the derivation from Van Doesburg see Marlborough, 1972, n.p. The "Swiss" component was provided by, besides Bill and Lohse, Camille Graeser, Verena Loewensberg, Robert Gessner, Max Huber and Hans Hinterreiter. 1944 marked the first international exhibition of Concrete Art in Basle and the founding of the journal Abstract + Concrete of which twelve numbers appeared between 1944 and 1945. In 1947 the exhibition "Concrete, Abstract and Surrealist Art" was held at St Gall of which Lohse was one of the principal organizers. However Lohse himself abandoned the term "concrete" around 1947 using "methodical", "logical", "systematic", or simply "form" before adopting his two principal categorical terms "modular" and "serial" orders.

creates objects for his material use".[3]

Whilst at the Bauhaus Bill attended the informal classes of Kandinsky, Klee and Albers, whose teaching drew on similar theoretical sources to those of the De Stijl artists. These sources, broadly describable as belonging to the *Kunstwissenschaft* tradition underpinning Bauhaus pedagogy, included, amongst others, on the one hand Goethe, Runge, Ostwald, Hering, and on the other, de Superville, Blanc, Seurat and Signac.

Despite situating his own work in direct relation to those artists we have already discussed, Bill singles out Kandinsky as his theoretical master. Given the expressive and symbolically abstractive nature of Kandinsky's painting this may initially appear to be incompatible with Bill's rigorous Euclideanism. However this is not so, as will be seen in what follows. Kandinsky was seeking the scientific foundation of painting and himself adopted the term "concrete" in preference to "abstract", to describe his own approach to painting.[4] However he was looking for its invariable principles in physiology and psychology and had quite a different understanding of Concrete Art from that of Bill (by

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[3] Cited Anker 1979, p31. It is worthwhile noting here Anker's introductory remark (p.13) that: "It was Bill himself who suggested that I limit myself to his painting, because according to him, there is no hierarchy between the different domains of art, they are all rigorously submitted to the same logic and need for intelligibility". The fact that painting exemplifies his artistic activity as a whole indicates its already symbolic character.

[4] See Kandinsky, 1982, Vol.II, pp.814-7 & 820-828. On Kandinsky's linguistic approach to art see esp. his "Point and Line to Plane" in the same volume, pp.527-694. Anker citing Klee's famous dictum that "Art does not reproduce the visible, it renders visible" argues that Klee's theories were actually more important to Bill (see Anker 1979, pp.58-62 and 90-91). The two principal formal characteristics of Klee's, as opposed to Kandinsky's, teaching at the Bauhaus, cited by Anker as common to Bill's art, the use of the checkerboard and mathematically determined relationships are however, contextualized there by the "vegetal", cosmological and cosmogonic aspects absent from both Kandinsky's teaching and Bill's painting. (See Klee 1973, esp Vol. 1 pp.220-231 & Vol. 2 pp.82-8 and Poling 1986, esp. pp.72-82). This seems to me to be a crucial distinction. However similarities and differences abound and more study of this topic is needed than has been given it by Anker. Tentatively, and perhaps only with respect to this question, I would suggest that an ordering of Klee, Kandinsky, Bill could be drawn up on the basis of a tendency towards a formal self-sufficiency, with the distance between Klee and Kandinsky being less than that between them both and Bill. However, the relation of all three to the Pythagorean and Platonic tradition of geometrical and mathematical theory which was also so important a theoretical underpinning for De Stijl aesthetics requires further research. The title of Bill's Limited and Unlimited, 1947, whether intended or not suggests a direct reference to the fundamental Pythagorean dyad. Klee and Kandinsky and "abstract" artists might here be placed in the "Italian school" which grounded mathematics and geometry in the natural world and Bill and "concrete" artists in the "Ionian school" which stressed the purely formal aspects (cf. Cornford 1969, esp. pp.1-27).

the mid 1930s the term "concrete art" had come to stand as a general alternative for "abstract art" and did not necessarily imply adherence to Van Doesburg's manifesto). Thus, although Kandinsky's 1938 essay "The Value of a Concrete Work" praises "artistic mathematics", it opposes this to "the mathematics of science" and warns against "pure reason in art" and "the dangerous path of logic".[5] Kandinsky's position is based on his belief in the necessary role of the unconscious in artistic creation and his closing remarks in this essay make the point clearly: "...nothing is more dangerous in art than to arrive at a'means of expression' by logical conclusion. My advice then, is to mistrust logic in art".[6] Although Bill's Concrete painting is always determined by logical structures, it is a logic slightly, but significantly displaced by the "mistrust" which Kandinsky recommended and which is coded into Bill's painting by his non-conforming use of colour.

The following is a 1949 version of Bill's Concrete Art manifesto which was originally published in 1936 for the exhibition "Current Problems in Swiss Painting and Sculpture" and revised in 1949 for the exhibition "Zürich Concrete Art". The implied presence of an artistic collectivity, signified by the opening "we" should not be overlooked:

> We call "Concrete Art" works of art which are created according to a technique and laws which are entirely appropriate to them, without taking external support from experiential nature or from its transformation, that is to say, without the intervention of a process of abstraction.
>
> Concrete Art is autonomous in its specificity. It is the expression of the human spirit, destined for the human spirit, and should possess that clarity and that perfection which one expects from works of the

[5] Kandinsky 1982, Vol.II, p.826

[6] Kandinsky 1982, Vol. II, p.827.

human spirit.

It is by means of concrete painting and sculpture that those achievements which permit visual perception materialize.

The instruments of this realization are colour, space, light, movement. In giving forms to these elements, one creates new realities. Abstract ideas which previously existed only in the mind are made visible in a concrete form.

Concrete Art, when it is true to itself, is the pure expression of harmonious measure and law. It organizes systems and gives life to these arrangements, through the means of art. It is real and intellectual, anaturalist while being close to nature. It tends towards the universal and yet cultivates the unique, it rejects individuality, but for the benefit of the individual.[7]

The continuity of this document with Van Doesburg's manifesto and in turn with Mondrian's writings are immediately apparent. However as with Van Doesburg's manifesto, the references to thematized concepts such as "repose", "the fourth dimension", "the infinite" found in early De Stijl writings are gone and the intended artistic "idea" (allowing that this reduction still warrants use of the term) is now a mathematical one, to which the formal expression can be completely adequate. Although Bill here divorces Concrete Art from the abstractive procedures informing early De Stijl painting, particularly as the final paragraph indicates the broad terms of his understanding of "non-figurative" painting does not differ radically from its conceptual base. Despite his commitment to a materialist progressivism, Bill's understanding of Concrete Art is steeped in the

[7] Albright Knox Gallery 1974, p.47.

philosophical absolutism and utopianist socio-ethical ideas with which we are familiar from De Stijl. As he wrote in the 1968 essay "Art as Non-changeable Fact": "it is the scope of art to create a kind of non-changeable, elementary truth".[8]

Although Lohse's writings tend to be more concerned with the description, analysis and interpretation of his own work and those of his "constructivist" predecessors than in propagating an artistic philosophy, aside from the Pythagoreanism and Platonism implied by working with geometric form, his ideas about his practice and art in general are very much as we have seen so far, "Hegelian", supra-personal and utopic. Of his serial systems he said "to my mind, the period produced them - I was its instrument".[9] Thus he claimed that the work of art embodied, and thus was symptomatic of, its era: "From each truly spiritual explanation a new principle comes to life..."[10], and that: "Constructivist art is an encylopaedic art, an art of reason; and at the same time as being an art, an analysis and type of order on the moral, ideological and political plane".[11] Since each artistic expression possesses "indissolubly connected with its primordial conditions, an inalienable symbolic value", Lohse argued that artists must develop "new methods of plastic expression" which would constitute a "new style" appropriate to contemporary conditions.[12]

Both Lohse and Bill, just as we have seen with Mondrian, claimed a correlation between the stylistic characteristics of their painting and the state of society's evolution.

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[8] Albright Knox Gallery, 1974, p.151.

[9] Cited Lohse 1986, p.29.

[10] Lohse 1974, p.278.

[11] Musée de Grenoble 1988, p.38.

[12] Musée de Grenoble 1988 & Lohse 1968, p.160.

For Bill: "in the field of basic aesthetic truth" we find "an adequate social order in general and an adequate spiritual order for the single human being".[13] Less reservedly, Lohse maintained that:

> Systematic configuration is an analogous parallel to the structures of our contemporary way of life and to our civilization. Although identical, it goes further in that it calls into question social reality. By using objective means, by illuminating its own methods and being able to predict the formation of unlimited regulated structures, it is, in both its methods of working and thinking, a model of our changing environment.[14]

According to Lohse's own analysis of his work, the characteristics of non-hierarchical, standardized relations in re-iterable systems, pictorial elements (colour-forms) combine to form groups which combine to form composition which in turn combine to form "themes". Thus he argues that: "The structures of a non-hierarchical society correspond to the following qualities in visual creation: flexibility, transparency, verifiability both in method and in end product".[15] Putting it more succinctly he simply states that: "The serial principle is a radical principle of democracy".[16] The difference evident here between Lohse's analytical positivism and Bill's more philosophically diffuse formulation holds true for their writings in general.

Bill explained his art not just in terms of a social teleology directed towards the purpose of realizing an *Umweltgestaltung*, an integration of art and life, but also a far-

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[13] Albright Knox Gallery 1974, p.152.

[14] Lohse 1986, p.16.

[15] Hayward Gallery 1980, p.100.

[16] Cited Lohse 1986, p.28

reaching metaphysics. As Lohse claimed that each work of art possessed "an inalienable symbolic value" so according to Bill, with Concrete Art " we attempt to create works with a direct, unequivocal symbolic face, such as symbols for unity, eternity, liberty, human dignity".[17] Although Bill maintained that communication of such symbols is "direct", his reading of his own work demonstrates a psychologically-based interpretation of its material signifiers. Typical in this respect is his essay on his 1952 design for "A Monument to Unknown Political Prisoners" in which he claims that: "As a symbol of freedom,... space opens outwards on all sides".[18] Admittedly this is an instance of Concrete Art harnessed to a specific semantic content and in sculptural form; however the essay deals with Concrete Art in general, not just this specific function.

According to Bill: " ...works of art enable certain problems to be solved without compromise, in a world which is full of compromises and failed speculations, a world where people make themselves at home in the midst of chaos as if chaos were an unalterable fact of life".[19] The relationship of Bill's ideas to Mondrian's concerns is apparent even if they are now re-interpreted in positivist language. Thus wrote Bill: "I am not less convinced in the last analysis, that only the penetration of life completely by what we call today "Art" - considered as principle of spiritual order and the basis of all human activity - will be appropriate to dissipate the chaos of indecision, of irresponsibility, of moral decay, of insecurity, of anxiety and panic and to finally create harmony".[20]

Bill's 1949 essay " The Mathematical Approach in Contemporary Art" is indicative

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[17] Albright Knox Gallery 1974, p.107.

[18] Albright Knox Gallery 1974, p.108.

[19] Marlborough Gallery, 1972, n.p.

[20] Bill 1951, p.65.

of the concurrent metaphysical and even mystical meaning qualifying his use of scientific terminology. He argues that art:

> has become a branch of philosophy: the more the network of thought is clearly structured, the fundamental idea homogenous, the mode of mathematical thought more in harmony with thought in general, and the more we approach the primary structure, art becomes more universal, more universal in the sense that it expresses directly, without distraction, what is able to be felt directly, without distraction.[21]

The claim which this essay makes, that Concrete Art is "knowledge converted into form" goes far beyond the boundaries of empirical science. Thus, referring to "the projection of latent forces" though the artist's "inwards vision", Bill maintains that:

> Far from creating a new formalism, as is often erroneously asserted, what these can yield us is something far transcending surface values since they not only embody form as beauty, but also form in which intuitions or ideas or conjectures have taken visible substance. The primordial forces contained in those elements call forth intimations of the occult controls which govern the cosmic structure; and these can be made to reflect a semblance of the universe as we have learned to picture it today; an image that is no mere transcript of this invisible world but a systematization of it, ideographically conveyed to our senses.[22]

The relation between a mathematical "idea" which is responsible for the appearance of the painting and its symbolic interpretation remains constant to Bill's understanding of

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[21] Cited Anker 1979, p.150.

[22] Albright Knox Gallery 1974, p.98.

his art. In a 1972 interview, Margit Stäber confronted Bill with the apparent contradiction of his simultaneously claiming that his work was both "an autonomous object" and "a vehicle for symbols". Bill replied that: " I believe that the mental dialectic which leads to the appearance of symbols is in itself the stimulus which leads to the creation of works of art. But the fact that a meaning is intended does not mean that it can be explained, if it could, it would probably not be expressed in the form of painting or sculpture at all but put into words".[23] This is, in other words, a re-iteration of the fundamental premiss that Concrete Art is an idea made visible. However the re-description of it (when pressed by Stäber) as an expression of the inexpressible confirms Bill's allegiance to the Neo-Platonic tradition underpinning the practices of the first generation of abstract painters.

Stäber did not pursue her line of questioning further. However rather than leave the concept of a non-referential symbol as a logical anomaly or the belief in it as a simple historical fact this apparent contradiction is resolved by the distinction we have made in the first two chapters of this study between two levels of discourse - sense and meaning. The first level is that of the relation between an individual painting and the systemic base which it exemplifies (which Bill considers to be its non-referential autonomy). The second level is that between the systemic basis and its symbolic interpretation. The process of interpretation, the "mental dialectic", is determined by a set of textual relations which, though sufficiently general to maintain a sociolectal discourse, programmatically defined as "Concrete Art", are interpreted in different ways by the different artists involved with the appropriate consequences for the practices concerned.

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[23] Marlborough Gallery 1972, n.p.

The System of Concrete Painting

Mondrian's Neo-Plasticism had played pictorial surface against support in a relatively informal way - the paintings were more or less simply "compositions". Both Van Doesburg's 1930 Arithmetic Composition and Vantongerloo's numerically determined "proportional" paintings of 1936/37 not only rationalized this relationship, they explicitly stated it as their compositional basis. In so doing they provided an exemplary model of an approach to artistic composition which went beyond the intuitional, something which the use of geometrical elements and precise execution had not precluded in De Stijl painting, despite the rhetorical identification with scientific methodology. Thus Lohse points out that the "new style" demanded the rejection of system as "a hidden principle or an expedient".[24]

Lest Concrete paintings themselves do not make it clear that: "the method represents itself and is the painting", their titles function to direct the viewer to the intended formal "idea".[25] Whilst in Bill's case these are usually simple verbal descriptions - Two Groups of Double Colours or Progression with Five Squares, often with a degree of connotative suggestiveness as in the case of Enclosed Nucleus, or Unity from Equal Colour Quantities, in Lohse's work the title supplies what is almost an algorithm for the painting's construction, for example, Systematic Series of Colours in Fifteen Self-Repeating States, 1950-54, Fourteen Rows of Colours with Vertical and Horizontal Condensation, 1953-83, and so on. (With the titles of Lohse's and sometimes Bill's paintings the first date signifies the work's conception,the second date its execution).

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[24] Bann 1974, p.277.

[25] Lohse 1980, p.100.

Van Doesburg's demand in his Concrete Art manifesto that the "work of art should be fully conceived and spiritually formed before it is produced" represents a fundamental difference from the intuitive procedures of Neo-Plastic painting in which the actual pictorial elements emerge as a result of the decisions made during the compositional process. The task of resolving the potential conflict between tectonically organized structural elements and intuitive compositional principles by the first generation of abstract painters led, according to Lohse, "to the unification of the differentiated, more or less immeasurable plane and linear elements and towards the control of their sizes; to the search for a structural unity not only through the use of plastic means placed parallel to the picture plane but also by means of parallels drawn on a more complex basis".[26]

Lohse's analysis is leading of course to his own painting which, at least from about 1942/3 when he adopted rectilinearity as a constant in his painting, at the level of both compositional method and execution (except for the very late works where an apparent unsteadiness of hand blurs the edges of the adjoining planes) represents the most rigorous and consistent adherence to the notion of the "determination" of artistic value which has been so central to the development in abstract painting considered so far. (In Bill's painting the lines are less precise and the surface less immaculate and relatively there is an obvious "hand-made" quality absent from Lohse's. In the latter, the stretchers are thin, emphasizing the two-dimensionality of the works, the unframed edges often marked with a neutral grey strip of cloth tape). In Lohse's aesthetic theory, determination is arrived at, not by artistic insight, but by the objective "systematization" of the composition and the "standardization" of its elements in order to ensure a congruence in "method and result".[27]

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[26] Bann 1974, p.278.

[27] Lohse 1968, p.142.

Using similar terminology, Bill's 1965 essay "Structure as Art? Art as Structure?" identified experimentation "with the objective possibilities of form" as one source of innovation in art. This determined the work of art in accordance with "tectonic laws which ultimately are schematically applied in uniform distribution".[28]

Along with the overt mathematicization of De Stijl compositional principles required by this functionalist orientation goes another feature which can also be regarded as distinctive of Concrete painting - the alteration in attitude towards symmetry or repetition as a principle of composition. One of the excluded "others" of De Stijl painting, symmetry of linear structure is given a new function as the counterpoint for the distribution of colour, which although potentially disruptive of that structure is always apportioned systematically. This may vary from a relatively simple accentuation as is the case with Bill's The White Square, to the kind of complex interrelationality of his Colour Field with White and Black Accents, (Ills.30 & 31) or in Lohse's case, with a similar difference, from Three Complementary Contrasts, 1955-75/2 to Thirty Vertical Systematic Colour Series with Red Diagonals 1943-70.(Ill.44) Having given some consideration to Concrete painting in general we can now turn to a comparison of the formal characteristics of Bill's and Lohse's work.

Max Bill

The importance of Vantongerloo to Bill's work has already been briefly mentioned. Although Bill did make a few works on the basis of algebraic formulae such as Construction on the formula $a^2 + b^2 = c^2$, 1937, in general of Vantongerloo's work it is the 1936 "proportional" paintings which are the most clear precedent for Bill's Concrete

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[28] Albright Knox 1974, p.136. With typical prudence Bill cited "individual expression" as the other source.

painting. Unlike his earlier work in which there was an obscure relationship between surface composition and its underlying armature, in these works the principle of composition (stated by their titles) is clear. (When Bill was asked to explain the meaning of one of Vantongerloo's earlier compositional formulae he replied "If only I knew....".[29]) The exemplarity of Vantongerloo's work also holds for Lohse who singles out one of this group of works, Function of Lines, as "one of the most significant attempts to achieve the standardization of the elements".[30]

There is a continuity between Bill's and Lohse's Concrete painting and Vantongerloo's pre-1936 work insofar as all involve the formulation of a "primary form" and the derivation of variations from it by the manipulation of line and/or colour (and non-colour). The difference is that with the exception of early works such as Bill's 1943 Rhythm in Four Squares, which plays an a-symmetrical surface composition off against a concealed underlying symmetrical division of the support, in Concrete painting the "primary form" is isometric with the image itself.

Although Vantongerloo did produce variants of particular forms or formulae and as we have seen, both Mondrian and Van Doesburg derived works form earlier compositions, the serial approach to composition gained full realization with Bill and Lohse as abstract painting could now be justified not in terms of an individual act of creation but as providing solutions to formal problems. In Bill's words, the concerns of painting were: "colour and rhythm on a surface....(expressed by)...the most basic formal laws in a single self-sufficient work" [31] or more simply as: "the pure play of form and

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[29] Cited Anker 1979, p.87.

[30] Lohse 1968, p.143.

[31] Marlborough 1972, n.p.

colour freed from the compulsion of being something other than it really is, of which the sole aim is to give pleasure by the fact of its independent existence".[32]

Given the ascription of a symbolic or "second level" meaning to his work, this is a somewhat disingenuous assertion on Bill's part. Yet whilst even the most positivistic aesthetic is implicated in type-token relations, the very fact that the Concrete painting so obviously exemplifies its own systematic structure, tends to resolve questions as to its *raison d'être*, that is, to inhibit the semiotic process of extra-pictorial referral, an inhibition encouraged by the shift from a-symmetry to symmetry as a guiding compositional characteristic. This not the case with the De Stijl painters, where the absence of this kind of "first level" systemic closure directs the viewer immediately beyond itself, giving those works a quotient of indeterminacy relative to the determinacy of Concrete painting.

We can oppose these two stylistic approaches to composition in terms of "open" (De Stijl) and "closed" (Concrete Art) texts which allow for a collateral degree of interpretive freedom on the viewer's part.[33] But here there are still different implications and Lohse's painting is generally "more closed" than that of Bill. This is not simply, or even predominantly, because of Bill's use of the diamond format but because of his use of colour which is not only derived from an "open" colour paradigm (see below p.168-9) but is often "odd" (for example, Construction on a Theme from 1946, Coll. Marlborough Godard) whereas Lohse's is always even. That is, Bill will use unequal quantities of colour in an unbalanced distribution where Lohse's painting will generally use equilibrated quanta of colour in balanced relationships. Re-phrasing this opposition between Bill and Lohse in Jakobsonian terms, the more metonymic the painting, the less metaphoric it is,

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[32] Albright Knox 1974, p.55.

[33] Cf. Eco 1983, esp. pp.47-66. The use of these terms here does not map directly onto that of Eco.

and the more it is reduced to a purely visual deciphering of structural relations.

Whereas the intuitively-developed compositional "excentricity" and undeniable spatial illusionism of Mondrian's paintings raises questions, at the very least of both a larger whole of which the painting is a part and to which it is a synechdochal allusion, those of Bill, and even more so in the case of Lohse's rigorous determinations, inhibit semantic extension. This difference is enhanced by the corollary de-personalization and de-indexicalization of the executive features of the painting. This shift away from the transcendent towards the immanent creates problems when it comes to claims of symbolic legibility, not so much as to what Concrete paintings might symbolize but that they might be judged to symbolize anything at all. I will take up the question of their symbolic adequacy again, in comparing Bill's work to that of Lohse.

With respect to this shift Bill's 1956 analysis of Mondrian's Composition I, 1925, (Ill.31) is of interest.[34] Bill argues that the three black lines of this work generate not a single square but a pentagon, two trapezoids and two triangles. He treats this work as a composition of separate colour and non-colour planes, the black lines being regarded as equivalent to the black, yellow and light grey colour planes which are in turn equivalent to the white planes as segmentations of the two dimensional picture surface. Bill's analysis is noteworthy for the way it reads Mondrian's painting in terms of Concrete Art aesthetics as a relationality of parts, free from expressive indexicality, whether emotional or mystical or spatial connotations. In relation to our overarching concern in this study it is of additional interest because he acknowledges that his interpretation is only one of the ways of reading the structure of Mondrian's painting and one not necessarily in accord with Mondrian's intentions. Bill indeed makes this structural multivalency the primary

[34] See Bill 1976.

condition of Mondrian's painting: "But above all, what is remarkable in this painting is that Mondrian has united its actual appearance, which is most strictly and most absolutely constraining, with the freedom for an observer to envisage different representations of it, representations whose core is fixed in the canvas itself, like a rule of a well-organized game".[35]

An early example of Bill's re-appraisal of the function of abstract painting as a self-determining cognitive structure, much like a game, is Rhythm: Horizontal-vertical-diagonal, 1942 (Ill. 32), a work reminiscent of Van Doesburg's Elementarist style. It is divided into two symmetrically-structured halves, the top half being mirrored in the lower half. Each half is divided on the diagonal axes and has a square sub-section which is again divided diagonally. The combination of the two halves produce a continuous arrangement of interlocking lines which together constitute a single form, an apparent singularity largely engendered by the non-symmetrical distribution of colour. Discovery of the relation of symmetrical parts is revealed by study of the work.

This kind of game-playing, which implements Kandinsky's maxim that: "Optical propositions destroy mathematical propositions and replace them"[36], is found in other works around this date such as Rhythm in 4 Squares, 1943, and Rhythm in 4 Parts, 1942. It re-appears with greater transparency in later works such as Colour-Field with White and Black Accents, 1964-66 (Ill.33). This work has a completely symmetrical linear structure but the selection and distribution of colour suggests a separation between a form and its ground. A related "idea" is explored in the 1970 System in 4 Colours.(Ill.34) Here a symmetrically divided surface is varied by systematically substituting each of the 2 colour

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[35] Bill 1976, p.91.

[36] Kandinsky 1982, Vol. 2, p.824

and non-colour oppositions so that the colours establish relationships independently of the linear division. Additionally, each colour is allocated an equal amount of the total surface and is distributed symmetrically, as are the non-colours. In these works a higher degree of game complexity is attained compared to the 1940s works because the rule-governed compositional operations extend to the use of colour.

Complexity increases in Rotation of Equal Colour Quantities around White Centres, 1969, (Ill.35) in which a very strong effect of optical disorder is skilfully produced by what is in fact a very simple organization of similarly- arranged forms. Each quadrant is divided into 5 parts, one white which occupies the centre of the quadrant and one each of blue, green, red, and yellow which are ordered identically in each quadrant. Rotation of each quadrant through 180^0 moving from bottom left to bottom right to upper right to upper left produces 4 irregular polygons, the regularity of division being subverted due to the juxtaposition of two identical colours at each of the adjoining edges, creating irregular polygonal forms.

Finally, a particularly engaging example of the type of work which plays optical organization against structural organization is the 1970 System with Five Four-coloured Centres.(Ill.36) In this work the canvas is divided into 4 equal quadrants each of which are again divided into 4 equal sub-quadrants, yielding the 5 "centres" of the title. The centre quadrant, which is of the same size and format as the other quadrants, is formed from one of each of the sub-quadrants of the other four quadrants. Each sub-quadrant is sub-divided on the basis of a 3:2:1 ratio and each quadrant, and therefore the compositions a whole, uses the same quantity of green, red, blue, and orange. As with the previous work, taking the upper quadrant as the starting point for an anti-clockwise rotation, the remaining three exterior quadrants present the same colour arrangement rotated through

180^0, first and second in an anti-clockwise direction and the third 180^0 in a clockwise direction. Within each of the 5 quadrants there are two diagonally-related pairs of sub-quadrants - the upper left and lower right being inversions and the lower left and upper right being reflections of each other. With respect to the linear division of each grouping of four outer sub-quadrants, the system of division, which is also a procedure of rotation is the same. The inner quadrant is unique in this respect.

This is reading the work in terms of the directives suggested by Bill in the work's title. However the composition also produces a vertical and horizontal game. Thus dividing the canvas around the central axis, into two pairs of rows (horizontal) and two pairs of columns (vertical), each row or column of any pair is a mirror of its mate (inversion being a rotation through 180^0) both divisionally and colouristically.

The chronological progression described here moves towards complexification, something which is arguably a consequence of the notion of rule-creative game-playing. It goes without saying that these games are intended for the pleasure of the viewer who is manifestedly invited to assume a re-creative role. This involves communication less in terms of an informational message than through the experience of the "non-purposive rationality" which Gadamer makes central to his interpretation of art as play. Here communication occurs as a result of an interactive process which involves a "playing along with".[37] Thus, whilst there is a diminution of the metaphorical aspect of Concrete painting relative to say Mondrian's painting, and thus a loss of communication in one respect, there is a gain in accessibility, and so communication in another respect, since it is precisely the reduction to systematicality which enables the viewer's engagement with the work.

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[37] See Gadamer 1990, esp.pp.123-130.

In Concrete painting, whilst it may be the sole representative of its "idea" or formal theme, potentially any painting may be one of a group based on the same "idea" (single "ideas" can be combined in a work). The "idea" involves relations between a re-iterable linear structure, varied colouristically thus producing an individual "expression", rather than an array of colours which are given different formal distributions. The generic "idea" may, however, take varying structural forms as for example with The Red Square, 1946 and Radiation from Violet, 1972,(Ills. 37 & 38), which offer two similar but different divisions of a diamond format.

A thoroughgoing analysis of Bill's painting would require a *catalogue raisonné* of his considerable production. Lacking this means of establishing categories of relationships between paintings, we can nevertheless identify a number of paradigmatic "ideas" which may form the basis for serial exploration. Individual works may exemplify more than one category. Two Groups of Double Colours, 1958-62, for instance, may be included in categories i and ii below)

i. Colour Differentiation of an Equiproportional or Variproportional Grid.

Of the equiproportional type, example a.) The White Square, 1946.(Ill.30) The element of the title is the sole white element in a square grid whose intersections are marked by 81 small squares, one of which is white, the remainder black. The white square is positioned in relation to the bottom, left hand, right hand and upper sides of the support by intervals of 1,3,5, and 7 intersections. Example b.) Four Colours in Equal Groups, 1963. Four colours arranged according to four interlocking and identical patterns of distribution.

Of the variproportional type: Example a.) Two Groups of Double Colours, 1958-62. (Ill. 39) A rectangular format is divided into 8 progressively-reduced pairs of squares

arranged in a clockwise spiral. Each pair of squares is occupied by one of two colour pairs, blue/green and orange/violet, in alternation. Example b) Four Zones, 1962-3. Two groups of four colours of contrasting tonal value are arranged alternately in a progressively reduced four-step grid.

An alternative to this theme is its diagonal variant. Example a.) Field of Six Penetrating Colours, 1966; and b.) Six Penetrating Colours, 1966-67. (Ill.40) Two different sized, diagonally-arranged checkerboards with different colours. The first is based on a interlocking gradation of blues to greens and violets to oranges, the second on an opposition between red and green and orange and blue around an axis of black and white.

ii. Proportional Displacement of Line and Colour/Non-colour.

Example a.) Progression with Five Squares, 1942-70. A vertical rectangular format divided into 5 identical squares, each square being vertically sub-divided, proceeding from top to bottom of the support, according to the ratio 0:1:2:3:4, each sub-division containing one of the three primaries. Example b.) The Red Square, 1946. (Ill.37) Here the proportion of black and white in the 4 segments of the diamond lying outside the red square is redistributed on the basis of a linear division which alters in an anti-clockwise direction in the ratio 4:0, 3:1, 2:2, 1:3.(the work has another aspect of interest insofar as it intercodes the Russian Constructivist colour triad with Neo-Plasticism's diamond format).

This square-within-diamond type of composition and the proportional re-distribution or substitution of lines and/or colours and non-colours within it is the single most common basis for serial development in Bill's work. (The diamond formative is especially distinctive of Bill's painting and is the basis for many other types of composition). These works are, like Albers' Homage to the Square paintings, members of series which are "infinitely open" because they are constituted from a paradigm of unlimited colour. Albers

had been one of the teachers at the Bauhaus when Bill attended there in 1927-9 and taught at Bill's Bauhaus-inspired Institute of Design at Ulm at the latter's invitation).

Thus Radiation from Violet, 1972, (Ill.38) has a very similar linear structure to The Red Square, except that the bi-partite division in all four triangular segments lying "outside" (the title corroborates the importance of this centripetal relationship) the violet square is symmetrical. Colour is substituted in each of the eight sections on the basis of similar tonal modulations of a red-blue contrast, altering from darkest tone at the top to highest tone at the bottom, with the left and right sections being occupied by the middle values. The 1972 Radiation from Blue has an identical structure (although it has smaller proportions) but uses different colours, which can thus be regarded as substitutions in the earlier work. In both cases the colours "outside" the square also lie to either side of its position in the colour wheel.

iii. Proportional Distribution of Colour/Non-colour Relative to Surface Area.

Example a): One Black to Eight Whites, 1956. In a 64 division checkerboard, an 8-step tonal division between black and white apportions the surface area into 8 different quantities, starting with black and finishing with white in the ratio 1:2:3:4:5:6:7:8. Example b.) System with 5 Four Coloured Centres, 1970, (Ill.36) which we have already discussed.

It is evident from this description of Bill's Concrete painting that although it greatly broadens the colour paradigm of abstract painting and introduces the diagonal at angles other than 45^0, it does not introduce any compositional method which had not already been put in place by his predecessors. It is governed by Mondrian's principle of determinate relationality as further refined by the introduction of proportional division of the support surface by Vantongerloo and Van Doesburg.

Bill's use of the square-within-diamond format is clearly indebted to Mondrian, however it should be noted that Mondrian did not use the square as a form *tout simple* in his diamond paintings. His vertical and horizontal lines were intuitively placed and whilst these necessarily implied a square this form was not contained within the format as an autonomous structure as is the case with Bill's use of it. In fact Mondrian thickened the lines to avoid the appearance of a single form. Despite the "cut-off" effect suggested by the diamond format, the implication of an extension of forms beyond the support edge is de-emphasized by the Concrete Art treatment of the composition as a structure of internal relationships, as we have seen above with works such as Radiation from Violet. Even in those paintings where the square form is only implied, such as Square from Parts, 1962, (Ill.41) as the title intimates, the incomplete "square" is the perceptual and conceptual focal point of the carefully managed relations between the sections of the painting. It is only in those works such as Red Quadrant, 1977, that extension becomes a relevant issue and this tends to be applicable to the quadrant itself than the painting as a whole (this applies even to similar compositions within a diamond composition such as Green Quadrant, 1983.

Richard Lohse

Even more so than is the case with Bill, Lohse's writing about his art is steeped in the "machine aesthetic" of the Functionalist and Constructivist ethos and is oriented to quantifiable processes.[38] His analyses of abstract painting interpret it as a progression towards the realization of the condition of "machine and product", in other words, of

[38] Lohse initially trained as a graphic artist but lacked Bill's more extensive practical experience of applied design. On Lohse's career see Musée de Grenoble 1988, p87. Bill initially trained as a silversmith before attending the Dessau Bauhaus between 1927-29. he subsequently worked as a graphic artist product designer and architect. On Bill's career see Anker 1979, pp.191-6.

system and the individual art work generated from it.[39] Thus in Lohse's terms the achievement of the first generation of abstract painters "consisted of taking the plastic means to represent parts of the picture as a whole being directly related to the picture plane and its borders. From a structural point of view forms become the elements of the picture plane itself".[40]

For Lohse this meant a return to the orthogonal grid structure of Mondrian's 1919 checkerboard compositions and because of their "equalized band structure", despite the illusion of spatial recession, to New York City 1 and Broadway Boogie Woogie.[41]

One of the earliest works in this respect is Twelve Vertical and Twelve Horizontal Progressions, 1943-4.(Ill.42) Here twelve colours are arranged in twelve vertical lines of equal width divided into twelve horizontal segments producing 144 different "elements", each colour occupying one twelfth of the total colour quantity. The distance between the lines from left to right and the length of the horizontal segments from top to bottom both increase progressively by the addition of the same unit of measurement which is equal to the width of the vertical lines. The debt to Broadway Boogie Woogie with its "dynamic equilibrium" of small, orthogonally-organized colour planes is self-evident.(Ill.6) Where the American Neo-Plasticians, chose to develop the spatial ambiguity of Mondrian's work, eventually leading to three dimensional structures, Lohse read it, as did Bill with Composition 1, as prototypical of the systematic division of the pictorial surface: "it should be remembered that the elimination of the third dimension was a decisive and conscious

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[39] Lohse 1974, p.27 and Musée de Grenoble 1988, p.33. For Lohse's analysis of his predecessors work see particularly Lohse 1968, pp 128-142.

[40] Lohse 1974, p.277.

[41] Lohse 1986, p.136.

aim of all de Stijl painters".[42] Hence Lohse's painting subsequently developed a rigorous two-dimensionality which was only disrupted in those works such as 15 Systematic Colour Squares with Vertical and Horizontal Condensation, 1953-83 which, because of the very excess of systematicality, and in the manner of Op Art, tend to appear to curve towards the centre of the canvas or even less controllably and more disturbingly to produce undulations, as in 6 Horizontal Groups with Six Formal Equal Colour Groups, 1950/5-87.

Lohse's mature work is divided into two groups the "serial" and "modular" paintings. Both are based upon an orthogonally-gridded division of the support surface and the use of the spectral colours plus black and white (although as with Mondrian's painting, the diagonal is not used as a literal feature, it is important as an implied relation). The serial paintings involve "progressive" (expanding) or "degressive" (contracting) relations between equal or unequal parts, the modular paintings involve the construction of a composition from the addition or multiplication of standardized units. Each category sub-divides into "themes" each concerned with a particular formal problem "the problem of shifting groups", "the continuous growth of a group" and so on, which is the basis for serial variation or transformation. A theme may develop out of one or more preceding themes. Transformations of a theme result from variation of colour choice or if the colour range remains constant, of the sequencing of those colours (eg see the works belonging to the theme Thirty Vertical and Systematic Sequences of Colours, 1955 (Ills. 43a-b) and/or the distribution of lines, for example, cf. Four Times Nine Groups of Colours Changing From Red to Green, 1955-82 with Eight Symmetrical Rhythmical Groups, 1986.[43]

These series are not simply the result of the algorithmic manipulation of sequences

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[42] Lohse 1966, p.137.

[43] Musée de Grenoble 1988, pp.58-59.

of numerically-designated colour. Taking the example of Thirty Vertical Systematic Colour Series with Red Diagonals, 1943-70 (Ill.44) for example, Lohse must not only ring a new change on the general theme of thirty sequential colours, but also produce a satisfying pictorial solution within the parameters of certain stylistic requirements and his own self-imposed limits within the features already enumerated, as well as other generalized compositional requirements such as diversity within order, rhythm and so on. In this particular instance the distinguishing motif, the red diagonal, determines the order of the colour columns(vertical) and rows (horizontal). All columns have the same number of coloured elements, each colour occupies an equivalent proportion of the total surface area.

This is not a purely mechanical partition of the surface however. The diagonal axial divisions are displaced by reducing the horizontal axis by one column from either side of the painting, an a-symmetry reinforced by commencing the diagonal sequences from different positions at the top and bottom of the grid. The result is to create not a single meeting point at the centre of the composition but rather a centralized diffusion of slightly elongated proportions. This displacement in its non-regularity acts in the precisely the same way and arguably in response to the same expectations as we have seen with Van Doesburg's analysis of Huszar's painting and with the functioning of colour in Bill's painting - as an index of artistic creativity. The difference in Lohse's painting is that it is the function of rational calculation.

Once again, in the absence of a *catalogue raisonné* it is not possible to provide a definitive analysis of Lohse's system of painting, however not only do the titles of Lohse's works provide classificatory data but his writings are to a large extent concerned with their

systematic formal analysis, to the point of providing detailed diagrammatic analyses.[44]

The very schematic descriptive analysis made of Bills's methodology in which we identified a number of thematic categories also applies to Lohse's work. These were:

i). colour differentiation of an a) equiproportional or b) vari-proportional grid;

ii). proportional displacement of line and colour/non-colour; and

iii). proportional distribution of colour/non-colour relative to surface area.

Thus Lohse's Three Complementary Contrasts 1955-75/2 would be an example of i.a) (in Lohse's terminology this would be an example of "modularization"). Fourteen Systematic Rows of Colour with Yellow at the Centre 1950-67 belongs to the category of i.b) (for Lohse it would represent the principle of "serialization"). Four Groups of Colours Disposed Degressively with a Reduced Centre 1956-69 would be an example of ii) (which Lohse calls "proportionalization") and Six Horizontal Bands with Six Formally Equal Colour Groups 1950/55-71 an example of iii) (in Lohse's terminology called "equalization").

Although Lohse's works manifest a much higher degree of complexity than those of Bill and a more rigorously mathematical basis of organization, they invariably select from the same range of self-denoting compositional principles. Hence they necessarily, since this is the case for Bill's work as has been discussed, represent a comprehensible continuation at the level of expression, and therefore of content, of the work of their De Stijl predecessors. They are, as it were, the De Stijl method passed through the alembic of functionalist aesthetics. Using our analyses of Bill's and Lohse's painting we can attempt a synoptic summary of Concrete Art painting.

Based on the two basic formal categories of line and colour, Concrete painting

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[44] Eg. Musée de Grenoble 1988, pp.94-7 and see also Lohse 1986.

constitutes a numerically- and geometrically-determined dialectic between repetition and non-repetition, symmetry and non-symmetry using the systematizing principles of modularization, serialization, proportionalization, and equalization. These principles were previously largely confined to Van Doesburg's applied design work although they did, as we have seen, function covertly in his painting.[45] These were applied to the earlier "intuitive" processes of expansion/reduction, addition/subtraction, substitution, displacement, rotation and reflection (the latter two confined to Van Doesburg's applied design work) to produce the systematic "interpenetration" or "interlocking" of elements as with Bill's Four Colours in Equal Groups, 1963, or Lohse's Penetration of Four Groups of Interlocking Colours 1952-69 (and which had been anticipated in Giacomo Balla's early abstract work). As mentioned the linear structure is the re-iterable form whilst colour determined the pictorial composition. The colour paradigm of Concrete painting includes primary and/or secondary and tertiary colours plus black and white, and choices are usually regulated by systematic relations such as complementary contrast, or warm/cold or light/dark gradations, the latter introducing analog divisions into its highly digitalized system.

Reading Bill and Lohse

Having described the syntactical continuities of Concrete painting with that of De Stijl, I would now like to attend to its semantic plane and in so doing reverse the direction of analysis and read Lohse against Bill and both in relation to De Stijl. Whilst in Bill's and Lohse's paintings the formal elements remain substantially the same as those found in De Stijl work, the use of these suggests a kind of reference which is internally, rather

[45] Bart van der Leck had also experimented with them, as Lohse himself has discussed. Lohse 1966, p.140

than externally, directed, the paintings referring to each other as systematic variations of a "theme" or "idea".

Lohse's compositional method is exemplary for its explicit rationality and there is little of the playfulness of Bill's painting, in which colour is used to demolish the rectilinear structure, as we have seen for example with Rotation of Equal colour Quantities around White Centres.[46] Like the De Stijl group, both Bill and Lohse continued to use the traditional oil on canvas technique whilst adhering to the criterion of "precise" execution. However Bill's work does not manifest the preoccupation with immaculate finish which is characteristic of Lohse's painting, stopping short of the "mechanical" aspect found there and thus demonstrating a relative "self-indulgence". Notwithstanding this we should note Lohse's self-congratulating statement that :"All the systematic results that I have produced were without technological aid "[47] , and compare it with Bill's rejection of the need for "the so-called up-to-date material".[48] This strand of "anti-technologism" indicates the primarily aesthetic and symbolic character of Concrete painting and distinguishes its intentions from those of Russian Constructivism.

In Bill's case it is his use of colour which most clearly signifies his adherence to "pre-functionalist" aesthetic assumptions. Echoing Kandinsky, particularly in his interest in the use of dissonant colour, for Bill colour constitutes and represents the "a-mensional", that aspect of artistic creation which is scientifically indeterminable.[49] Over and above

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[46] An at least partial exception to this in Lohse's case would be works such as Sixteen Progressive Groups of Colours Disposed Asymmetrically in a Symmetrical System, 1956-62, in which, as the title suggests, a symmetrically-gridded infrastructure is over-ridden by the asymmetrical distribution of colour).

[47] Lohse 1986, p.29.

[48] Albright Knox Gallery 1974, p.152.

[49] See Anker 1979, pp.119-130.

its differential role within a particular composition, colour in Bill's painting has the very clear symbolic function of signifying the irrational and the meta-rational. The interpretive frame for this however is as much empiricism as it is Romanticism. That is, it refers to a materialist understanding of matter's non-rationality or non-intelligibility rather than simply that which exceeds rationality and which is thus opposed to mere matter. Hence according to Bill, a Concrete Art painting "modifies" its environment irrespective of whether it is seen from the front, side or even observed at all: "a picture, exactly in the same fashion as a source of light or heat, is the source of radiation, with the important difference that the radiation of a painting results from its own organization".[50] This kind of idea is also related to the precedents set by Mondrian's and Van Doesburg's exploration of the function of colour in an architectural space and the terms of this statement suggest a kinship with Vantongerloo's scientifically-oriented ideas, referred to earlier (p.136 above). Whilst it would be an error to exaggerate Bill's materialist orientation and indeed that of Concrete Art in general and to lose sight of its specifically artistic function, this is, in its relative pragmatism, considerably different from Vantongerloo's mystic ideas about the "spectrum of the absolute" and his quasi-scientific attempts to quantify colour.

Although Bill commonly uses complementary colours there is no attempt, as there had been with Vantongerloo, to determine a harmonious quantification of colours. Rather harmony is overtly rejected for the equiproportional juxtaposition of colours, often of great tonal contrast. (This is not universally, but generally accurate, particularly after 1960 when the number of works using combinations of complementary colours proportionally decreases). This strategy is accompanied by the rejection of a theoretically- determined

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[50] Bill 1951, p.62. Lohse also maintained that his colours were "active carriers of energy", but more as a result of their oppositional relations than in themselves. See Lohse 1968, p.61.

paradigm of colour choice as had been the case with De Stijl or a pragmatically-determined one in the case of Lohse's use of spectral colour. Colour is now infinitized and Bill adopts a systematic "anti-systematicality" in its use.

Relative to the purely objective mathematical determination to which Lohse's works conform, Bill's paintings tend towards the "irrational". As the 1991 catalogue to his London show of that year cites him: "These quanta of colour, arranged in different ways, with their varied outlines, always producing new different chromatic vibrations, are the real driving force behind my paintings".[51] Here it is worth recalling Bill's 1974 statement (which is tucked away at the back of the 1974 Albright Knox catalogue after a list of acknowledgements to the lenders and works by Bill in public collections):

> When I wrote a quarter of a century ago about "the mathematical approach in contemporary art" this was a new way to see art which until then had been considered mostly as the more or less uncontrolled experience of an individual.
>
> Today I know better that mathematics are only a part of the methods to be adapted for the regulation of so-called works of art...
>
> I prefer today to describe this process as the logical approach to the problems of art. This means that every part of the creative process follows step by step consciously a logical analysis and feedback. This is the way I hope to realize my vision best.[52]

Bill's recurring references to the symbolic and expressive dimensions of his paintings seems to be at odds with Max Bense's 1963 claim for Bill's art, that in it:

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[51] Cited Bill 1991, n.p.

[52] Albright Knox Gallery 1974, p.186

"Everything is left to mere perception; almost nothing depends, for its existence on apperception. The aesthetic message, to formulate it thus has material supports, but no semantic ones".[53] Yet Bill's writings, particularly those of the mid-to-late 1960s, such as "Structure as Art? Art as Structure? and "Art as Non-Changeable Fact", bear traces of the information and statistical theory which informs Bense's essay. (Is this a similar if inverted relationship as that between Querido and Mondrian? Bill had known Bense since the early 1950s.[54]) Such ideas chimed with the mathematical orientation of Concrete Art and undoubtedly provided an interpretive frame for Bill's own understanding of his practice at this time. For example in his 1972 interview with Margit Stäber already mentioned, Bill maintained that his art was directly dependent on "the tissue of experience and reality"; however, this "reality" he described as "something like a cybernetic system".[55]

Despite suggesting the possibility of a mathematical analysis of Bill's painting, Bense did not go so far as to provide it, contenting himself with the brief general claim that it: "represents a kind of higher order on the basis of given order and given disorder" where "order" refers to the formal elements and "disorder" to the artist's decisions as how to utilize them.[56]

Information theory attained great popularity in the 1960s and 1970s as an explanatory approach to abstract painting, under the broader umbrella of a tendency to explain and make art in terms of scientific or quasi-scientific ideas.[57] We shall re-visit

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[53] Marlborough Gallery 1976, n.p.

[54] Albright Knox Gallery 1974, pp.136-7 & pp.151-2.

[55] Marlborough Gallery 1972, n.p.

[56] Bense 1976, p.16

[57] On the general "epistemic" shift cf. Moles 1971. Anker 1979 appeals to Gestalt psychology, information theory, Piaget's structural psychology and structuralist linguistics in order to explain Bill's work.

it in looking at Vasarely's work. The "information" aspect refers not to factual knowledge but to the factor of "uncertainty", the informational value or "entropy" of a given message, the quantity of uncertainty transmitted, being measured relative to a systematized source.[58]

As Bense's reference to the "aesthetic" message suggests, it is a "single level" formalist theory of meaning which assumes the immediacy of the expression plane of the message, in this case abstract painting, and it ignores or excludes the metalinguistic field of the message, at the points of both production and reception. Yet how could a viewer appreciate Bill's aesthetic message without knowing that of Mondrian and so a whole panoply of contextual knowledge separating the latter's work from that of Bill?

It might be suggested that from a diachronic perspective we could apply information theory's principle that the more a message approaches predictability, the less information it supplies and hence the lower is its entropy. Thus between Mondrian and Bill we could suggest a decrease in entropy given that Bill's compositions are mathematically regulated. Entropy would again decrease with Lohse's work. But this is to select out only one feature of the painting as a whole. Bill's "de-regulation" of the De Stijl colour paradigm conversely increases information and Lohse's structural complexification requires many more "bits" of information than is generally the case with Mondrian's painting, which could attain great simplicity. If only because of its "single level" limitation, information theory is not adequate to the task of explaining abstraction's meaning.

Bense's 1963 article is a very early attempt to apply semiotic theory to abstract painting and it is worth pausing here to consider it. Although I do not disagree with his

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[58] See Pierce 1962.

conclusion that Bill's paintings are "iconically constructed indices", his argument is constrained by the formalist and structuralist orientation of information aesthetics and there are alternative or additional reasons why this classification is appropriate. Bense argues that Bill's paintings are iconic insofar as the geometric "figures" they employ are tokens of their ideal types. He does not mention any specific paintings in this briefly-made claim; however, in Bill's painting the geometric elements do not function independently in the figural sense of Suprematism or even Neo-Plasticism where there is an effective distinction between line and plane, surface and background, but rather solely as elements of a systematic division of the support surface. Bill's paintings are self-resembling images and are tokens of their system.

Similarly although Bense argues that Bill's paintings "must be classified as indices" because they manifest real relations between the figural icons, the reality of the causal relation is a function of the system underpinning it. I would suggest that indexicality applies primarily between the composition and the system it embodies, that is between two different semiotic levels of expression and content. On a more general level, Bill's works also are metonymically and indexically related to De Stijl paintings insofar as they are the continuation or extension of its project. (Alloway in his "existentialist" reading of Bill's paintings relates them indexically to the decisions which give the paintings their particular appearance and thus to the artist's "personal project against the void").[59]

Bill's essay " Structure as Art? Art as Structure?" is interesting because it grapples with the question of the difference between science (statistical, topological and tectonic analysis) and art, given that they may both employ common structures. Bill's argument, which is identical to that of Lohse on this point, and which had already been used by

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[59] Albright Knox Gallery 1974, p.14.

Vantongerloo, is that the aesthetic factor lies with the decision as to how to "limit" the structure "on the basis of verifiable arguments" and that thereby "a discernible principle of order becomes comprehensible".[60] The nub of Bill's argument is that art is a dialectic between individual work and its systematic base, "invention" and "lawfulness".

Here too appears a concept which also was central to the De Stijl painters' understanding of their practice - rhythm. However whereas rhythm in De Stijl painting began as an intuitively-determined eurhythmy, in Concrete painting it was understood as a mathematically-determinable measure of the conjunction between system and work: "Such lawfulness and such inventions manifest themselves as rhythm in an individual case. Rhythm transforms the structure into form; i.e. the special form of a work of art grows out of the general structure by means of a rhythmic order".[61] In Lohse's case this is characterized typically as "objective rhythm".[62]

Rhythm for both artists is identified with colour, thus giving it the same logical relationship to line as was the case with Mondrian's painting. So for Lohse: "Colour transforms the anonymity and quasi-infinitude of the serial principle. Colour individualizes the additional principle. It is by its structure or organization that the serial principle fundamentally distinguishes itself from the tectonic".[63] Again, it is by colour that "the static-tectonic transforms itself into that of the kinetic-flexible".[64]

As we have seen, Mondrian's distinction between "scientific" and "intuitive"

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[60] Albright Knox 1974, p.137. For Lohse "The individual expression (of the painting) results from the choice of methods, in the determination of the conditions of realization". Musée de Grenoble 1988, p.34.

[61] Albright Knox Gallery 1974, p.137.

[62] Lohse, 1968, p.61

[63] Musée de Grenoble 1988, p.38

[64] Hayward Gallery 1980, p.100

mathematics noted above was rejected by Van Doesburg and Vantongerloo during the course of their careers for a conception of the work of art as a rational construction. With Bill the identification with "scientific mathematics" is more complete than had been the case with the De Stijl painters, even Vantongerloo, but it does not go as far as that of Lohse. Where Bill tends towards the "ludic", an aspect which became increasingly important in Vantongerloo's work - to the point of abandoning systematicality, Lohse's work tends towards "the mechanical" fetishized in Van Doesburg's writings.

Whilst identifying the De Stijl group as his principal artistic forebears, Lohse maintained that in their paintings: "Forms are interrelated on the basis of... a pictorial principle that may be called hierarchical...(and which)...has a fundamentally authoritarian character".[65] His own paintings, he argued, were "democratic" since: "The standard element constitutes an anonymous entity which possesses no expressive qualities...".[66] This argument, in which "equalization" becomes "equality", "standardization" becomes "universality" and the mathematical becomes the ethical is difficult, if not impossible, to accept.

In terms of a metaphoric reading it would seem that De Stijl paintings are less "authoritarian" than those of Lohse because of their technical imperfections and irregularities and their looser relation to systematic determination. Relationality between parts as exemplified by Mondrian on the one hand and Lohse on the other is quite different since, as Bill's analysis of Composition 1, already cited, affirms, Mondrian's painting permits different images to be constituted by the viewer, whereas those of Lohse are regulated by mathematically pre-determined sequences. Recalling our earlier opposition

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[65] Lohse 1968, p.59.

[66] Lohse 1966, p.145.

of "closed" and "open" texts, we can say that whereas in Mondrian's painting the viewer it the subject of the enunciation, with Lohse the viewer becomes the subject of the *enoncé*.

Meaning can only be a function of interpretation, but metaphorically can Lohse's painting do otherwise than imply a closed reality of invariably-related, constantly-determined "standardized elements"? The emphasis on structure over function which this implies is hardly adequate to Lohse's ascription of the values of "flexibility" and "variability" to his painting - the play of "infinite law and infinite flexibility"[67] - something which applies to his approach to painting as a whole rather than any individual painting. Even in this respect whilst the permutational possibilities are high this is so only within closely regulated parameters. This reduction to an algorithm equally effects its linguistic status, given our approach to language, although ironically in so doing Lohse comes closest both to realizing the "machine aesthetic" so important to De Stijl philosophy and to the game of chess which is Saussure's ideal analogue for *la langue*.[68]

Lohse's overt adoption of a mechanistic model for painting - "the machine" and its "product" - is indicative of the fundamentally deterministic ideology underpinning his work. (This is a predominating metaphor - he could also claim that : "growing colour ordering is analogous to the organic principle of growth".[69]) It encapsulates a significant semantic difference between his art and that of Bill and suggests a reading which contradicts his intended meaning. That is, the very notion of the machine implies an external directing intelligence and if this is taken as a model for a rationally-planned technological society, as Lohse intended, the possibility for authoritarian control are self-

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[67] Lohse 1968, p.63.

[68] Eg. Oud's 1918 essay "Art and Machine, Petersen 1968,Vol 1, p.63.

[69] Hayward Gallery 1980, p.100.

evident.

This is at least partly attributable to the fact that Lohse's practice represents the clearest example of the shift away from a Theosophical/mystical to a functionalist/materialist philosophy as a downwardly causing agent and the consequent shift from the continuous, open composition to the discontinuous closed composition (the extendibility of Lohse's systematic painting is mechanistically determined and once again of a quite different order to that of Mondrian). Equally, given Bill's own metaphysical tendencies the rationality of his painting is of a lower order than that of Lohse's and thus has a more complex relation to a "second-level" discourse.

In Bill's painting the variety of forms and the "incompatible" colour combinations would tend to suggest some kind of individual expressivity whereas Lohse's painting would tend to suggest expressive conformity. (It is not surprising that in publications on Lohse his drawing takes on an unusual importance - they are indices of the authorial hand which is denied in the paintings). Equally this is manifested on a formal plane by the respective relationship to symmetry and "closedness", the factors which emphasize or de-emphasize the objectivity and objecthood of the paintings themselves. These factors are of course very far from Mondrian's aesthetic where the elements of paintings "as such" were not the issue at all.

In general we can describe the paintings of Bill and Lohse as indexical icons but the relationship is now less "symbolic", the paintings are more self-referential, in that the indexical and iconic relations are directed internally to the paintings' systematic base. We have seen that both Bill and Lohse ascribed symbolic meaning to their paintings; however their arguments, particularly in Lohse's case, are tenuous if not entirely "arbitrary", being only loosely motivated by their formal characteristics. This metaphorical inadequacy

problematizes claims of intended meaning, as they lack even the broader conceptual base of the preceding generation in both the psychology of perception and late 19th century aesthetic philosophy. In so far as Bill's writings manifest both these kinds of ideas as well as Functionalist theory they tend ultimately to be contradictory, something which is to a large extent (although not entirely absent) from those of Lohse. However it is arguably just this contradictoriness which "opens up" Bill's paintings and makes them linguistically richer than those of Lohse.

As Concrete Art is systematic where Mondrian's painting had been methodical, relative to Mondrian's work that of Lohse manifests a shift from *parole* to *langue*, from *discours* to *histoire* and from its assumption of artistic intuition as a basis of composition to a Platonic notion of the pure intelligibility of forms, shorn of all naturalistic traces or associations. However it is not possible to describe a simple diachronic progression from Neo-Plasticism to Concrete Art in terms of a tendency towards the systematic, for, whereas Mondrian's principle of composition becomes logically regulated, the use of colour is de-regulated with Bills' work. The irrational aspect of colour which gave Mondrian so much trouble with respect to the realization of "harmony" and which appeared to "boil over" in his American works is now intentionally developed as the primary concern of his work to the point of ironizing, if not, paradoxically, undoing system.

Chapter 6

VASARELY'S PLASTIC KINETICISM: "A NEW ILLUSION"

The notion of a language of abstract painting has been a strongly implied assumption in the work of the artists considered so far, underpinning their claims of expressive meaning, but not being developed at a theoretical level. Victor Vasarely's practice is distinctly different in this respect, the predication of a "plastic alphabet" being fundamental to his explanation of his works as messages emitted by an artist and received by a spectator.[1] The linguistic analogy on which this is based only schematically dealt with in its structural aspects, however, as we shall see, in a broad sense, Vasarely's model of the way in which his works function linguistically is compatible with our own semiotic model.

Vasarely's practice in many ways acted out the De Stijl vision of a physically expanded field of activity, tackled with new technologies and materials. Plexiglass, glass, plastics, aluminium, ceramics and textiles were amongst the materials used in the works intended for public exposure which included relief constructions, tapestries, mosaics and architectural installations, a variety which, at least ideally, would have included the entire urban environment, Vasarely's so-called "polychrome city".

Yet despite rejecting easel painting as both an inadequate expressive form and a commodified original authorized by the artist's hand, Vasarely did not cease making and selling original paintings - a contradiction which he justified as funding his research in

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[1] See for example the 1956 essay " From Invention to Re-Creation, Ferrier 1969, pp.149-160.

more collectivist endeavours.[2] More importantly to us, he considered his work as a three-dimensional extension of the "plastic field" of painting.[3] This is literally the case insofar as all his works were derived from his *prototypes départs*, small but complete two-dimensional studies, usually in gouache, from which suitable versions varying in scale and material according to their purpose could be made by his assistants, often from pre-fabricated elements.[4] More generally, in whatever form they were realized, all Vasarely's works are intended to be engaged with optically by a viewer directly facing the work from a privileged viewpoint. In the case of those works such as the *oeuvres profondes* and the relief constructions, which require the viewer to move in order to realize their effects, this movement nevertheless has a maximum range of 90^0 to either side of a centralized viewing point. The visual games by which the viewer is thus engaged depend ultimately upon recognition of this viewing point.

Although we have looked briefly at the relief constructions of Neo-Plasticians such as Gorin, until now this study has excluded work such as Van Doesburg's applied designs or Bill's sculptures. However, because of the pictorialism which is common to Vasarely's greatly varied range of work, we can legitimately consider it as an extension of the model of abstract painting established by Neo-Plasticism. As this variety of work is divided by Vasarely into a complicated morphology of overlapping "periods" and as this chapter is largely concerned with stylistic interpretation rather than formal analysis, it will be useful to sketch out a brief descriptive overview of Vasarely's works.

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[2] See Ferrier, 1969, pp.122-123.

[3] Vasarely 1965, p.140

[4] Vasarely describes this process in Vasarely 1969, pp.29-32 and Vasarely 1979, pp.194-5.

Vasarely's work 1927-c.1976

Vasarely began his art studies in Budapest in 1927. During 1928 and 1929 he attended a school of graphic art whose curriculum was along the lines of the Weimar Bauhaus that its director, Alexander Bortnyk had attended between 1922 and 1924 (Ills.45a-d). In 1930 Vasarely moved to Paris and (undoubtedly at least in part inspired by the Bauhaus functionalist aesthetic) began a full time career in advertising which he continued until 1956, beginning to exhibit as a "fine" artist in 1944. The works prior to 1944, which form an important element of Vasarely's own account of his art, demonstrate an astonishing mimetic technique with a strong decorative sensibility and a fondness for visual conundrums. (Ills.46-47)

In his own analysis of his development towards abstraction Vasarely accords particular importance to the Belle-Isle period beginning around 1947 and continuing until 1954 (Ill.48) and which, merging with the Denfert period of 1947/8 (Ill.49), leads to the Crystal period (a name which refers to chemical and mineral structures) which lasted until around 1958.(Ill.50) It is during this period, from 1952 onwards, that Vasarely progressed to the use of fully abstract forms. This is emblematically stated in the Homage to Malevich paintings of 1952-58, which led to the Black and White period lasting until 1963 and which includes his kinetic *oeuvres profondes*. (Ills.51-53)

Taking up the principle of binary opposition from the Homage to Malevich paintings, Vasarely re-introduced colour and formally instituted his "plastic alphabet" of vari-coloured geometric figures with the Planetary Folklore works from around 1964, adding the macro-universe of astronomy to the earlier micro-universe of cellular structures.(Ills.54-56). It is with these works of the mid 1960s and the "illusionistic" works which follow them, (Ills.57-59) (works for which Vasarely is best known) that I am

primarily concerned here.

Vasarely's Relation to his Predecessors

It is in the Modernist tradition from Cézanne onwards that Vasarely places his work, specifically relating it to the work of Mondrian and Malevich: "We have then assimilated the work of our masters, we have read their writings...We have also acquired the right to discuss and even contradict their truths".[5] However, unlike Bill and Lohse who considered themselves as continuing the De Stijl project, developing the existing elements of its language and the methods of combining them, Vasarely relates his own work to his predecessors contrastively.[6] Thus he writes that:

> Malevich and Mondrian believed that in their works they had attained the limit of the plane. From this metaphysical 'wall' is born the 'wall in colour', in other words the spatial universe of polychromy. Our generation has succeeded in considering the plane in a different way to that of the neo-plasticians. From this is born the 'pure composition', which finds a striking prolongation in kinetic plasticism.[7]

Whereas the artists we have looked at so far considered their compositions as divisions of the two-dimensional planar surface, Vasarely took a strikingly different turn, investigating the possibilities for maximalizing the apparent depth of that surface. Hence

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[5] Vasarely 1965, p16.

[6] Although Vasarely mentions De Stijl he does not refer to either Van Doesburg or to Vantongerloo, nor does he make any mention of Bill or Lohse. However it is unlikely that he was unaware of Van Doesburg for an exhibition of his work, entitled *L'Art Concret* had been held at the Galerie Drouin in Paris in 1945. Diehl 1979, p.18.

[7] Vasarely 1965, p.38. For the most part Vasarely refers to his work as "plastic kineticism" and I have kept to this usage.

he argued that: "The drama and the triumph of painting, has always been precisely that of realizing the impossible - of giving more with less, of giving on the plane, something more than the plane".[8] The "pure composition", a term he took from Kandinsky[9], remains a planar surface differentiated by a limited number of forms and colours but now in a relationship of "eternal duality", a spatialized positive/negative relation from which Vasarely reads an ever-widening halo of oppositions: affirmation/negation, measurable/non-measurable, physical/ psychical and so on.

Although, as we have seen, spatial ambiguity is a constant feature of Mondrian's Neo-Plasticism, to which he finally surrenders with the re-introduction of superimposition in his American works, it is with particular reference to Malevich's clearly spatial metaphorics that Vasarely most directly relates his work, the figure/ground opposition of Malevich's painting being taken as the initial formative point of his own work and the "new illusionism" of his "plastic kinetic" style of painting.

Representing the Epoch

Vasarely's artistic career is chronologically parallel to that of both Bill and Lohse but whereas the work of those artists remained on the periphery of, if not entirely outside, popular consciousness, during the 1960'and 1970s Vasarely's work and name attained a status which approached the "mythological" in Barthes' sense of the word, leading to a self-apotheosis with the establishment in the 1970s of the Vasarely Museum at Gordes and the Vasarely Foundation at Aix-en-Provence, both dedicated to the "didactic" presentation of his art, the latter also intended to provide a place of work for the "next generation" of

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[8] Vasarely 1965, p.32.

[9] Vasarely 1965, p.31.

artistic researchers.[10]

Undoubtedly the phenomenal success of Vasarely's work was due to the fact that his works came of age in the 1950s and early 1960s, an era of synthetic polymers, cybernetics and sputniks, when cultural sophistication was synonymous with novelty of experience. Its values were echoed in Vasarely's 1959 claim that: "All authentic works of art must be new and original. Original with respect to the information it brings and new with respect to its construction in order to be able to confront the passage of time".[11] Vasarely himself, in 1965, summed up the era in one word, "speed", thus crystallizing both its accomplishments and its ephemerality. Under such accelerated conditions, he argued in explaining the appearance of his own works, there had developed a need for an art of "large forms, flat striking colours" in other words, the "global style" of plastic kineticism.[12]

Like all the artists at whom we have looked so far, Vasarely considered his work (and that of those artists working in a comparable style such as Soto, Molnar, Morellet, Yvaral and other members of the Groupe de Recherche d'Art Visuel with which he was associated), as an expression of its time, the symbol and embodiment of an irreversible social progress. "Our epoch" he wrote, "with its all-penetrating technique, with its speed, with its new sciences, with its theories, its discoveries, its unforseen materials, imposes its laws upon us".[13] At his most apocalyptic he would assert that: "We are at the dawn of

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[10] See Ferrier 1969, pp.112-118.

[11] Ferrier 1969, p.161

[12] Vasarely 1965, pp.33 & 156.

[13] Vasarely 1965, p.14.

a new style, this time on a world scale".[14]

The untrammelled optimism which characterized this period, just entering the space age, is evident throughout Vasarely's writings, which manifest the kind of utopic ideas with which we are now only too familiar. For example, in 1960, in his *Notes Brutes* he wrote that:

> The global machine civilization is before all a programme of education, followed by economic expansion and the establishment of social justice. Departing from this point, the continuing abolition of local causes of friction and the search for factors of rapprochement between nations and races will bring us to the golden age, not of a privileged ethnic group but of the entire world. [15]

The referent of a global social reality to which the practice of abstract painting is directed is common to all the artists at whom we have looked. However Vasarely's relationship to society is of a quite different order to that of his predecessors. Although a call for the "democratization" of art is in itself already a feature of contemporary avant-garde rhetoric, in both its theoretical and practical aspects, Vasarely's work is to an unprecedented degree less embedded in the specialized, self-reflexive world of painting than in the wider social context. As Vasarely himself puts it: "I am addressing myself not to the people of 'high culture' but to the so called 'uncultivated' mass, the ideal universal audience".[16] His large edition prints, which he envisaged selling in department stores and supermarkets, along with his projectable "transparencies" and "do-it-yourself" picture

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[14] Vasarely 1979, p.225.

[15] Vasarely 1965, p139.

[16] Vasarely 1974, p.213, fn.7.

making kits, are indicative of his populist tendencies, and this is nowhere so clearly symbolized than with his portrait of Georges Pompidou which is suspended in the foyer of the Pompidou Centre in Paris.[17]

Advertising played a major role in the transformation of European society into a mass culture of consumption in the post-war years. Vasarely's art was gestated in this "non-reflexive" realm, working, as he did extensively, in the areas of graphic design and advertising from 1930 to 1956, only exhibiting his work as a painter from 1944 at the Denise René gallery. Unlike Bill and Lohse, who also worked in the field of graphic design, Vasarely preserved its essentially psychological principles of visual communication used in graphic design in his career as an abstract artist and, it might also be suggested, supported these by skilful product marketing strategies.[18] It is for these reason that, notwithstanding his repeated criticism of the commodification of the work of art, the "new illusionism" which Vasarely, in the flush of modernist enthusiasm for the "new" in whatever form, heralded as the progressive aspect of his work, was in fact continuous with the "fetishized" material surface of the capitalist commodity itself.[19] On the one hand this meant that his work was susceptible to the vagaries of the consumer market. (This was ironic given Vasarely's frequent explanations of the longevity of "style" over "fashion"[20]). More importantly it also meant that it was susceptible to the growing impetus of an

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[17] Vasarely discusses the social aspect of his work in Ferrier 1969, pp.120-135.

[18] That he was instrumental in the founding and early years of operation of the D.René gallery which became the major European forum for his work and that of artists working in a similar style is yet another indicator of the way in which Vasarely promoted his work and mediated its reception.

[19] On Vasarely's "new illusionism" see Ferrier 1969, pp.47-87.

[20] According to Gaston Diehl, writing in 1979: "Vasarely ...is assured of dominating, as a recognized master, that future on which he has always wagered, by interpreting it in the colours of hope". Diehl, 1979, p.90. In fact Vasarely as an artistic entity seems to have disappeared no sooner than this prediction was uttered. Art Index lists only one article on him after 1978 and I am not aware of any work later than this date.

ideological critique of the visual culture generated by the Western market economy and enabled by the new information technologies [21] Vasarely's star was occluded by both the late 1970s critical and market rejection of a "high tech" approach to art practice of which it was representative and the shift to American-dominated Minimalist and Conceptualist art practice.

From this, our contemporary, perspective, the striking optical features of Vasarely's "plastic-kinetic" style, (which Vasarely described as "aggressing the retina"[22] and which at a popular level is probably best known under the rubric of Op Art) appear, not as Gaston Diehl put it in 1979, to give rise to "a feeling of the infinite"[23], but rather to mount an assault on the viewer in order to produce an effect which is on the behavioural level of stimulus response. Whilst arguably this was, at least in part, the legacy of the "message"-oriented principles of pictorial composition inherited from his work in advertising, at a more fundamental level it was grounded in Vasarely's materialist philosophy.

According to Vasarely: "For me, kineticism is what occurs in the mind of the spectator when his eye is obliged to organize a perceptual field which is necessarily unstable".[24] Undoubtedly Vasarely believed that this involved the positive contribution of the spectator and that it offered a "new vision of the world".[25] However, no matter how much Vasarely's images equivocate between the flat plane and an illusion of depth

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[21] The "opticality" of Western capitalist economy as the "society of the spectacle" is a complex subject on which there is a wealth of material and which I do not have the space to expand upon in relation to Vasarely's art. In the present context see esp.Debord, 1983, & Baudrillard, 1981

[22] Vasarely 1974, p.145

[23] Diehl 1979, p.55.

[24] Vasarely 1979, p.189.

[25] Vasarely 1979, p.185.

it is an ambiguity which disempowers the viewer, as Vasarely's innocent use of "obliged" indicates. (I am referring here to Vasarely's work of the late 1960s and 1970s, the *oeuvres profondes* are different in this respect).

Although not espousing a behaviourist position, belief in an unbroken continuity between matter and consciousness is the basis for a fundamental claim by Vasarely concerning the way in which art transforms consciousness: "The phenomenon of art does not have a divine explanation, but one which is well and truly materialist".[26] Rejecting the inner/outer dichotomy of transcendental metaphysics, Vasarely posited a continuum connecting retinal stimulation to apperception to interpretation:

> ...the spatial-material-energic-living-feeling-thinking universe forms an indivisible whole. It is from a unique teeming environment that things and beings differentiate themselves, even men, with sometimes a material aspect, sometimes a wave aspect, or, if you prefer, with an aspect sometimes physical, sometimes psychical. The languages of the spirit are only the super-vibrations of the great physical whole".[27]

However Vasarely may have understood his work, it needs to be asked whether the transformation that his art supposedly produced was wrought by, or on, the subject, whether it was, in other words, free or controlled. Although this is undeniably an issue of interpretation, we can in this respect, compare Vasarely's works to those of Mondrian, whose philosophical assumptions were diametrically opposed to those of Vasarely and whose works for Vasarely represented a limiting "wall" to be overcome.

Mondrian's works, we have seen, depend upon the "excentric" relationality of free

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[26] Vasarely 1965, p 140.

[27] Vasarely 1979, p.165.

elements that allow a number of different structurations of each work. On the other hand, all of the elements, the "plastic unities", of Vasarely's works tend in the Plastic Folklore series to constitute a hypnotic patchwork or mosaic of juxtaposed motifs (Ills.54-56) or in the later works to be subservient to the establishment of a centralized image, functioning descriptively to create illusory three-dimensional forms.(Ills.57-59). Arguably, much as Van Doesburg failed to appreciate the functional dynamics of Neo-Plasticism's structure and produced an alternative which was essentially symbolic, Vasarely (particularly with his illusionistic works), by reducing visual dynamics to a simple binary alternation, reduced the factor of "rhythm", which was so important to Mondrian in engaging with the viewer. The consequence of this was that his works are less liberating to "vision", that is to a way of seeing the world, than the form of painting which he was claiming to go beyond.

The philosophical differences between Vasarely and Mondrian resulted in different approaches to image-making in other respects as well. In a Platonic spirit, Mondrian had rejected illusionism in painting, whether of a naturalistic or an allegorically symbolic kind, believing that rendering objective reality in a perceptual and hence "superficial" way, actually made it less visible or conceptually graspable in an essential sense. Like all the other artists we have discussed, Vasarely also argued that his work was concerned with "making the invisible visible". However he meant it in terms of the micro- and macro-structures of nature as revealed by empirical science, not in terms of the pure being of transcendentalist philosophy.

Although Vasarely wrote in his 1955 "Note for a Manifesto" that the "plastic kinetic" work is "...the mathematical comprehension of the material structure of the Universe",[28] his ideas are not concerned with the mathematical *per se*. For him

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[28] Ferrier 1969, p.146.

mathematics is instrumental to scientific knowledge about the physical world, and the self-exemplifying criterion of "exactitude", so important to De Stijl and Concrete Art, does not have as important a place in his ideas. This is undoubtedly bound up with the primacy of ideas of ambiguity and "indeterminacy" in his aesthetic philosophy.

Vasarely's "new illusionism", as a return to Nature, fundamentally undermines and reverses one of the central themes of the project of abstract painting initiated by Mondrian and continued in Concrete Art - the belief that it was the thought world of numbers and geometric forms, formulae and equations which rendered true reality - not the reproduction of visual appearance. Where that kind of work is addressed primarily to the mind, Vasarely's work is addressed primarily to the eye. Knowledge of both of Vasarely's empirical referents, the micro- and the macro-universes, depend precisely upon the faculty of sight, at the microscopic and telescopic levels, so valorized in the "spectacular" cultural order which I have argued Vasarely's art ideologically affirms.

Representing Nature

The relation of Vasarely's work to the natural world and to mimetic representation is complex. It is on the one hand an evident rejection of natural appearances, yet at the same time it is the most mimetic and most naturalistic of any of the work so far considered.

Vasarely's own chronological analysis of his progression to abstraction identifies two groups of work as fundamental - the Belle Isle and the Denfert periods. To the first he attributes his understanding of the communality of form underlying natural appearances - of shells, pebbles, clouds and so on, which he experienced on the beaches of Brittany. The Denfert paintings are based on his Leonardesque vision of universal structure seen in

the *craquelure* of the ceramic tiles of the Metro stop Denfert-Rochereau in the south of Paris. Both of these experiences are used by him to explain a series of highly abstracted transitional paintings featuring "biomorphic" forms (the Belle Isle series) or irregular networks of fine lines (the Denfert series). As he put it himself, discussing Belle Isle, 1947, (Ill.48) : "I consider, moreover, that the plastic alphabet that I created some years later had its source, or at least one of its sources in this canvas".[29]

These two sources recall Mondrian's paintings of the beach at Domburg and his studies of facades from around 1913/14. However there is a considerable difference between Vasarely's experience and Mondrian's patient reduction of natural appearances which had occurred 25 years earlier, with only the work of Cézanne and the Cubists before him. That is, it would have been impossible for Vasarely, a former student of the Budapest Bauhaus, naïvely to repeat that process. When Vasarely claims that: "at the end of innumerable trials, of hesitations, of false paths, of speculations, I have succeeded in progressively distilling certain plastic constants founded on the geometric plane, constants comparable to those which exist in other systems such as the decimal system, the musical scale or the alphabet", he is inventing a genealogy by which to understand his paintings.[30] Although in explaining the unfolding of this genealogy Vasarely claimed that the passage from figuration to abstraction must be gradual "...one cannot take a short cut, one cannot plunge directly into abstraction",[31] we know that as a student at the Budapest Bauhaus he had practised just the kinds of rigorous abstractions to which Bill and Lohse devoted

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[29] Vasarely, 1979, p165. Thus the ellipsoid form which typifies his Belle Isle paintings signifies, according to Vasarely, an "oceanic feeling", remained a characteristic feature of his "plastic kinetic" style. Vasarely 1965, p.19

[30] Ferrier 1969, p.11

[31] Ferrier 1969, p.21.

their careers.(Ills.44-48) If the teaching there under Bortnyk was taken over from the earlier institution's curriculum, then Vasarely would have already been familiar with the process of abstracting from appearances to essential geometric forms and presumably the philosophy underlying that methodology.[32]

That Vasarely's grounding of his art in revelatory experiences such as those which form the basis for the Belle Isle and Denfert paintings constitutes a mythicizing construction of his passage to abstraction is confirmed by his writings and the publications on him which re-iterate a history of his pictorial production as a series of steps leading towards a project already realized within an artistic context that only awaits extension in a social context. Of course it could have been the case that Vasarely was "plunged" too directly into abstraction at the Bauhaus and that he felt the need to go through the process of re-inventing the passage from figuration to abstraction as a personal project. But this is not acknowledged as such, rather he presents his work as a genuine process of discovery whilst simultaneously acknowledging the importance of Bortnyk's teaching, a ploy which allows him to appear simultaneously both an innocent and a sophisticate in artistic matters.

Vasarely's pre-abstract work does not indicate the kind of rigorous reduction undertaken by Mondrian and the other pioneers of abstract painting, but rather a saccadic pathway over familiar terrain. In fact the planar element which is essential to his "plastic kineticism" came not from a patient distillation of the world of appearances but rather from without it, by hybridizing his stylized naturalistic forms with Malevich's famous black plane.(Ill.48)

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[32] According to Diehl 1979, p15 the Weimar courses of Itten, Albers and Moholy Nagy were all taught at Budapest. Diehl 1979, p.8 cites Vasarley on his Bauhaus period: "what we preferred was the purely abstract studies, which we regarded as the supreme art...When I left Hungary in 1930, I had already absorbed everything that the abstract culture had created at that time". Dahhan's 1979 study of Vasarely's "slow evolution" towards abstract art overlooks these studies.

Equally, whilst of course Mondrian did not abstract from nature but from a thoroughly conventionalized representation of it, and by the light of a number of mystic texts, Vasarely brought the idea of common structure to his art: "...my reading in the field of science has little by little convinced me that nature is an agglomeration of thousands of structures and of structures of structures, and that there is truth only in structure".[33] Vasarely is here also mediating his work in terms of a metaphysics but unlike Mondrian, in 1979 he is only reiterating a well-established view in artistic and socio-cultural and scientific theory and which was probably of a more significant part of the store of popular doxae than had been the case in Mondrian's day.[34]

Anachronism applies also to the most important naturalistic source for Vasarely's abstract work which occurs in the "Crystal" period of 1948-56. It was during this period, around 1950/52, that Vasarely places his passage to fully abstract work. To this period he attributes an experience which established the principle of dualistic ambiguity which is fundamental to his "plastic language". On Vasarely's own 1948 account, his "great discovery" occurred at Gordes, a medieval town in the rugged *garrigue* of the Lubéron in Southern France:

> The southern towns and villages devoured by an implacable sun have revealed to me a contradictory perspective. The eye is never successful in identifying what is a shadow and what is a section of wall: full and empty are confused, form and ground alternate. A triangle joins sometimes a lozenge on the left, sometimes a trapezoid on the right, a square jumps up

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[33] Vasarely 1979, p.164.

[34] Hence the innumerable publications of that era juxtaposing such natural forms as salt crystals and nautilis shells with geodesic domes. Cf Kepes 1968.

> or shifts downwards according to whether I couple it to a patch of dark green or a section of sky blue. Thus identifiable things are transformed into abstractions and...begin their own life.[35]

This particular version of the oft-repeated legend of the origin of Vasarely's "plastic-kinetic" style, published in a 1965 self-edited monograph, exemplifies the way in which Vasarely's abstract paintings are validated by him in relation to the natural world. Yet Vasarely goes on to admit that this "great discovery" was but "a striking confirmation of earlier finds" by which he means the axonometric perspective which he had learnt at the Budapest Bauhaus.

Vasarely was already quite familiar with "contradictory perspective", just as visual ambiguity had been a feature of his figurative work, as in his trompe l'oeil paintings and the Zebra, Martian and Harlequin works of the 1930's.(Ills.46 & 47) Equally, many of the principles of composition which he used as an abstract artist had earlier been applied to figurative subject matter - displacement of line (the Harlequin works), varying thickness and/or orientation of lines, and positive-negative substitution of colour or non- colour as in the Zebra and Tiger group of paintings for example.

Whether fictionalized or not, this briefly described trajectory from a highly schematized naturalism to a "new illusionism", if not being the same kind of naturalism that Mondrian abandoned, certainly aimed at producing a recognizable emulation of the natural world. Further it is "Nature" or the behaviour of the natural world (specifically the scientific understanding of it found in Gestalt psychology, quantum physics and so on) that is metalinguistically invoked to contradict the work of both Mondrian and Malevich as a kind of self-imposed and unjustified degree zero of painting and to ratify Vasarely's own

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[35] Vasarely 1965, p.29.

work as an advance on it. In a summary sense, from the point of view of the progression which we have followed from Mondrian to Lohse, this places Vasarely's work as it were "before" that of Mondrian and places it closer to that of Klee's semi-abstract work. Both Klee and Vasarely were concerned with formulating decipherable structural analyses of the natural world and not, despite their use of geometry and mathematics, in reducing painting to the kinds of formal "games" which Vasarely had played in his Black and White period and which were characteristic of Concrete Art.

Representing Science

In the 1952 essay "Ethics and the Artist", Vasarely wrote: "Let us finish with a romantic view of 'Nature', our Nature is that of Biochemistry, Astrophysics and Wave mechanics. Let us affirm that all man's creation is as formal and geometric as the secret structure of the Universe".[36] The idea that the abstract painting is an objective, and therefore universal, representation of the essential structure of reality was common to all the artists at which we have looked. It was an idea signified in a generalized way by the use of geometry and mathematical principles of composition. This self-evidently applies to Vasarely's work which can thus be inferred to share that assumption, and rightly so, although he attempted to give it a much more expanded and detailed horizon of meaning.

"Science" functioned as a highly generalized referent for the painting at which we have looked, standing primarily for "Reason". Yet a pronounced positivist strain is evident in the theoretical writings of Vantongerloo and Van Doesburg. Vasarely considerably develops this tendency. Thus he apportions colour to the field of chemistry, the division of the light spectrum to physics explaining that: "Cadmium is a metal which always gives

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[36] Ferrier 1969, p.143.

the same intensity of red, ultramarine a silicate which always produces a seductive dark blue, ...and so on".[37]

Although Vasarely regularly refers to a need for a "science of art" and a major theme of his explanation of his work is that art is moving towards scientific objectivity, his appeal to science is strongly metaphorical.[38] Despite the impressive range of theoretical ideas and the different disciplines he invokes, these supply less a methodology for the making of works of art (this may perhaps rather be found in non-Euclidean and topological geometry, of which, however, Vasarely makes no issue) than a generalized referent for interpreting them. It is in this metaphorical sense that he could write, for example: "my unities are comparable to hydrogen atoms, composed of a positive kernel and a negative electron, which create together a tension which gives birth to a magnetic field".[39] In fact Vasarely's practice primarily offers a self-confirming poetics of science based in the assumption that as the forms of scientific knowledge reveal structures which constitute the language of the universe, the work of art which employs these forms constitute a universal language mirroring or embodying that reality. Abstract painting becomes a matter of representation:

> Because he is aware of the two infinities of nature, the infinitely large and the infinitely small, which characterize our time and that it is necessary to take into consideration if one wishes to create works which express our modern outlook, it is probable that he (the artist) will say of such and such of his works that to him it suggests an expanding universe,

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[37] Ferrier 1969, pp.10-11 & pp.145-7.

[38] See for example Ferrier 1969, p.167.

[39] Vasarely 1979, p.194.

> the reverberating flight of galaxies towards unknown and immeasurable distances or the evolving movement of the human mass. He sees nothing other than what he has felt and which was the secret motif of the creation of his picture.[40]

It is certainly the case that when the artists we have looked at invoked scientific ideas such as Einsteinian relativity they had only a lay understanding of the theories to which they alluded and this is probably not any less the case with Vasarely:

> I can note also an analogy between the LIMITED THEORY OF RELATIVITY and the COMBINED POLYCHROMY. In effect according to its ambient position in the unity (direct figure-ground relation), and also according to it position between unities (direct ground-ground relation), the same colour can be light or dark, lively or sombre, pure or mixed, positive or negative, A rich, field in which, after the plastician the psychologist has a considerable role to play.[41]

This passage, as well as the citation which opens this section (p.194 above), is typical of Vasarely's eclectic use of the sciences, both as a source of ideas for, and an authorization of, his work.

To assess to what extent each of the varied branches of science he invokes to explain his work is adequately represented would be the subject of an independent study. Heisenberg's account of sub-atomic wave/particle uncertainty is regularly marshalled by Vasarely in order to demonstrate that ambiguity is a fundamental law of the universe, operative throughout the physical world from the sub-atomic to the astronomical:

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[40] Ferrier 1969, p13.

[41] Vasarely 1979, p.202. "Combined polychromy" is another way that Vasarely had of describing his paintings.

"Logically, everything is part of a space-time-movement-wave-particle continuum, regulated by laws operative throughout the Universe".[42] If we take this phenomenon as a test case it would seem undeniable that the way in which in Vasarely's painting a flat surface appears to be a three-dimensional volume exemplifies indeterminacy in a general sense. But Vasarely's curved lines really do curve and each of his plastic unities remains a separately identifiable "atom". This is, as I understand it, not compatible with the way in which sub-atomic indeterminacy actually works, which is precisely to alter identity.

The use of planar geometry in itself only allows a limited degree of adequacy to phenomena as elusive as sub-atomic physics or relativity (it was this same sort of limitation that led Vantongerloo to abandon geometry altogether and Bill to find other alternatives in his three-dimensional topological sculptures). However Vasarely's use of non-Euclidean and topological geometry in his late works does enable iconic representation of the micro- and macro-universes revealed by advanced scientific research which were the intended subject-matter of his work and his images appear to have a good degree of adequacy to his general tendency towards a dynamic, functional scientific theory.

If we compare Vasarely's paintings and writings to those of Lohse for instance, there is a visually demonstrable shift from the structural to the functional, from the inorganic to the organic, although it is questionable whether the kind of relativistic theories he invokes are ultimately compatible with his positivist allegiances ("cadmium is a metal which always etc..."). Of course, if iconicity is a matter of interpretation, then the poly-relationality of Mondrian's painting could with good reason also be read as exemplifying indeterminacy.[43]

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[42] Ferrier 1969, p.10.

[43] This issue recalls our discussion of Van Doesburg's critique of Mondrian's work and in turn, Moholy Nagy's and Kemeny's critique of Van Doesburg within the framework of the debate over dynamism.

There is a connection between Vasarely's work and that of Van Doesburg's at least on the level of a history of ideas, since both artists were particularly preoccupied with theories of "fourth dimensional" time-space relativity and so with the problem of creating movement within the self-imposed limitation of the two-dimensional plane. As with Van Doesburg, for Vasarely this meant realization of the "superior dimensions" of the plane".[44] Initially he incorporated movement via spectator interactionism with his *oeuvres profondes* then illusionistically in the apparently oscillating forms of the late 1960s works. He argued that the individual geometric figures themselves can be seen as transformations of each other and that this involved the element of movement -the oval is a transformation of the circle, the lozenge a transformation of the square - and presumably this could be extended to the hexagon, octagon and so on. This transformation he formulated in equations: "lozenge = square + space + movement + time (durée); ellipse = circle + space + movement + time", and represented his painting in general as "square + space + movement + time".[45]

This argument might seem to be of a similar order to Van Doesburg's claim of the fourth dimensional significance of his Elementarist works in terms of an overloading of interpretive weight. However, once again taking a comparative view point, it would seem reasonable to suggest that given that both artists had very similar intentions, that in this respect Vasarely realized them to a measurable extent in a motivated, iconic sense, whereas with Van Doesburg they remained largely "arbitrary" projections.[46]

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[44] Ferrier 1969, p.145.

[45] Vasarely 1965, p.32.

[46] Both artist looked particularly to film to replace the easel painting. However as these ideas remained largely speculative and I know of no work in which they were actually realized I will leave this area aside. Cf. Van Doesburg 1966 and Vasarely 1965, p.64-66. Vasarely had no idea of the not-too-distant developments in laser technology and the field of virtual reality which would probably have displaced his interest in film as a working

Vasarely's appeal to science conjoins with his enthusiasm for mechanical means of execution and reproduction. The Bauhaus, both in its educational programme and as site of theoretical debate, provided the seed-bed of Vasarely's view of art as intended to provide functional solutions for global social needs. However from the point of view of his career as an artist, the espousal of a "mechanical" aesthetic involved him in the same dilemma as it had the Russian Constructivists, for how could the artistic function be preserved if artistic creation is reassessed as *techné*? Hence whilst Vasarely promotes the idea of the artist-engineer, as he put it, the "bourgeois sorcerer apprentice gives way to the technocrat"[47], he is equally careful to preserve and promote his identity as an artist in a quite traditional, "bourgeois" sense. Despite macro-coding his work to the quantitative practices of collectively determined disciplines such a science and engineering Vasarely regularly defends his identity as author of the *prototype départs* and as a participant throughout the process of fabrication of his works by his "more or less *teleguided*" assistants for, he maintains, during this process "there are indispensable changes which it is impossible to foresee".[48]

Elsewhere he maintains that: "Cadmium, cobalt, ultramarine or the Mars range of colours are measurable chemical constants. Straight lines, curves and angles are the measurable geometric constants. The format, the harmony, the distance, the scale are the measurable mathematical constants. Luminosity is a measurable physical constant". But he also adds that:" The measure of the artist engenders quality and confers genius on

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material.

[47] Vasarely 1965, pp.12-14. C.f also his autobiographical reflections, 1979, p.25.

[48] Vasarely 1969, p.32.

common measurement and matter".[49] In other words, it is the measure of the artist, that "innate and non-transmissible capacity"[50], that transforms quantity into quality. Indeed Vasarely would go so far as to claim that this is because artists "...are the first in the secret of gods".[51] Vasarely is willing to attribute this metaphysical value to the works themselves. Thus, he argues, whilst the means of composition (forms and colours) are objective, once formed they begin to take on "their own life": "They exercise an effect which ceases to address itself directly to the brain. Certainly the eyes register it, the perceptual flux initially stimulates the brain, but immediately there are consequences of a vague and mysterious kind: the emotive level. At this point we no longer belong on the level of the measurable".[52]

Yet generally, Vasarely showed increasing willingness to adopt the mantle of "scientificity" for his work. Thus, in 1965 he could write that: "I am never inspired consciously by the exact sciences" and in 1969 state that the artist "functions impressively without exact knowledge", but in 1974, he recalled that "I made acquaintance during the wars years, with the works of de Broglie on wave mechanics, and I have not ceased since to be passionate about the exact sciences".[53]

The new information technologies of the 1960's and what were then called "cybernetics", as may be expected, were amongst the panoply of referents invoked by Vasarely, although their function is symbolic rather than practical. At this time the

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[49] Vasarely 1965, p.64.

[50] Vasarely 1969, p.12.

[51] Ferrier 1969, p.167.

[52] Ferrier 1969, p.12.

[53] Vasarely 1965, p.158 & 1969, p.147.

capacity and usefulness of computers in relation to visual imaging were limited and, as Vasarely explained in 1969, prohibitively expensive and he did not make much use of them, although he was enthusiastic about their potential.[54] Thus he relates his form/ground alternations to binary logic, refers to his drawings on graph paper as programs (*programmations*) and his compositions as permutations. Of course his central metaphor of the artist as an emitter of messages and the viewer as their receiver is easily implicated with information theory, as is his already noted insistence on the novelty and originality of the work of art and his reliance on Gestalt theory.[55] If Vasarely's works were not in fact generated by computer, their flawless metallicized surfaces certainly suggest some kind of "high-tech" origin as did his frequent use of alphabetical and numerical titles such as Quasar Dia-2 and Vonal KSZ.

The following passage from a 1969 series of interviews clearly demonstrates Vasarely's intertextualizing his work with information theory:

> In my CTA 102, I transmit a certain amount of information that one can measure in a precise way and that one can codify. Discs detach themselves from a gold or silver ground, there is one bit of information. That the discs have the same diameter - 11 centimetres, that they are grey or yellow, are aligned with each other, that is another bit of information. One sees also that they play on a range of 12 tones which create shadows and lights and give a feeling of infinity at the centre of the canvas: still another bit of information. The canvases of this series are, in general, very

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[54] Ferrier 1969, pp.33-34.

[55] See Moles 1971 for a contemporary account of the relationship between information theory and artistic practice.

> large, this permits a vibration "emitted" by the surface itself, the eye gets lost in this and takes from the plastic screen a kind of perceptual 'dream'. One has in each instance, at least 20 bits of information and without doubt more in the works which at first sight appear to be of a nearly impoverished simplicity.[56]

Although Vasarely is clearly implying the interpretive frame of information theory here, he misuses it, whether intentionally or not, regarding "information" in the ordinary sense of knowledge rather than the correct sense of uncertainty. Unlike Bill, for Vasarely it is only part of the general interpretive frame of scientific theory, not only coded to "scientificity", "objectivity " and so on, but together with cybernetics, connotative of "space age" sophistication.

The subject of information theory raises the issue of the means by which Vasarely communicated his meaning and this brings us finally to the notion of language which, from around 1955, he made central to his explanation of his work.

Vasarely and Language

In 1956 Vasarely wrote that: "The new fact resides in the discovery of a pure plastic language, rendering superfluous in the work any extraplastic elements. This language commences from zero, owes nothing to the past, creates by its own force its humanism and its poetry. Universal as a smile, a song or colour, it is able to express all and signify the world". [57] The idea of language stated here is obviously highly "poetic", however Vasarely also looked to some kind of objective structural form for it. Thus he

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[56] Ferrier 1969, p.55.

[57] Ferrier 1969, p.155.

wrote: "It is necessary that we translate our conquests into a common language...the alphabet of natural things is the particle or the crystal, that of organic beings the cell, that of music, sound, that of the word, phonemes, why should not plasticity have its alphabet, its grammar and its syntax?"[58] This "plastic alphabet", and Vasarely's most characteristic style of work, was established around 1964 with the Planetary Folklore series of works.(Ills.54-56)

As Vasarely himself describes his "plastic language", it is based on the fundamental binary unit, "the plastic unity", composed of two geometric forms, one usually, but not necessarily, a square, which acted as a ground, and another which acted as a figure set within that ground. This figure may be one of a number of regular or irregular shapes - squares, circles, ovals or truncated ovals, triangles, diamonds, hexagons, octagons, rhomboids and so on. Each plastic unity constitutes a kind of form-type whose proportions, like those of the total composition itself, could be reduced or expanded and which could be embodied in a variety of materials.

For Vasarely a key point was that each plastic unity was composed of four constitutive elements. Thus, symmetrical with the opposition between forms just mentioned, was an opposition on the basis of black/white, black/colour, white/colour or colour/colour. According to Vasarely each plastic unity was an indivisible whole, however colour and form are in fact clearly separable. Vasarely seems to have initially settled on 5 colours plus black and white and this subsequently expanded to 11 colours, although the structure of the paradigm was not a programmatic issue and there were no theoretical or practical reasons why it could not have been further expanded.[59] Each colour used was

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[58] Vasarley 1965, p.140.

[59] Vasarely 1979, pp.194 & 216.

in turn tonally graduated between black to white, over time the number of tonal gradations increasing from 14 to 20. Despite comparing this arrangement with the decimal system, the musical scale and the alphabet, this combinatory, although pre-determined, was of a very much greater complexity than any of these sign systems. This distinguishes Vasarely's work from the kind of systematic painting we have seen with Bill and Lohse, where even though in the latter's case the complexity was great, it was based on relatively fewer elements and most importantly the self-reflexive use of a limited number of compositional principles. With Vasarely's work however, particularly from the late 1960s, the system was determined by its descriptive purpose, hence the openness of his form and colour paradigms.

We have seen that with Lohse's work a certain curvature or undulation was a consequence of the system of graduated division he employed. This was presumably unintended, however with Vasarely this is precisely the effect being sought. I have already mentioned that Vasarely's pre-abstract work is characterized by the use of principles of graphic design and a fascination with the way in which purely formal means could be used to derive readable figures - zebras from the deformation and alternation of black and white lines for instance, or harlequins from the distortion of the checkerboard (Ills.46 & 47) - and that these kind of techniques were carried through to his abstract work. Thus in the Black and White period Vasarely creates his compositions, which are predominantly linear structures, by varying the width and length of lines, by displacing them or altering their orientation or that of the support, from the conventional square or rectangle to the diamond, and by "positive/negative" alternations of black and white.

All this we have already encountered, with the exception of the positive/negative alternation, which is only a special case of substitution in the category of non-colour.

Vasarely demonstrates a marked adherence to the centralized vertical and horizontal axes, dividing the composition into two halves which are a-symmetrically balanced an organization sometimes varied by an orientation towards the diagonal axes. (The principle is most evidently stated in his Homage to Malevich paintings, which involve a number of oppositions on the levels of both form and colour between two clearly demarcated, but slightly transgressed, halves of the painting.(Ill.52) This is, as we have seen, a recurring feature in both Mondrian's and Bill's work. Even the binary relation manifested in the figure/ground relation of Vasarely's plastic unities and the "split-screen" of his *oeuvres profondes* is consistent with the figure/ground opposition we have seen in Mondrian's work.

Vasarely's Photographisms and Refractions (Ill.51) of the 1950s take up a compositional principle which we have already seen in Vantongerloo's work and which, although in one sense can be regarded as a variant of the principle of displacement, I have given separate recognition as "deformation". Echoing Vantongerloo's own progession in Vasarely's work it is largely responsible for the re-introduction of naturalistic appearances in the Gonflages works of the later 1960s.

There are works in the Black and White series of which it is meaningful to use the term "systematic". Eridan, 1956 (Ill.53) uses the principles of alternation, inversion, reversal and graduated displacement in an evidently systematic way. A more complex example is from the Planetary Folklore series, OUR-Mc (Ill.55) which divides the orthogonally-gridded canvas, slightly taller than wider (20x21 divisions), into four quadrants (with a remainder of two squares at the centre), two quadrants being vertically-oriented, two horizontally oriented. Each quadrant contains a 6x6 square, which is composed of a different type of plastic unity from the area of the quadrant lying outside

it. These eight areas establish a light/dark alternation, both orthogonally and diagonally, the two right-hand quadrants alternating both the light and dark relation and both types of plastic unity, the two on the left alternating the light and dark relation but differing in only one of the two types of plastic unity.

But Vasarely's combinatories tend generally to overwhelm any reading of them as systematic, either because of their sheer complexity (eg Orion-Or, Ill.54) (perhaps here with the intention of increasing "information") or because they reject systematicality (eg Sikra, Ill.56), or because the system is subsumed to an imagistic function as in the Gonflages and Vonal and later axonometric projections. (Even in the case of the "purely formal" compositions such as Orion-Or there is a suggestion of light and shade). Systematicality such as we have seen with Concrete Art requires not simply the use of a limited number of elements, to which Vasarely's work do adhere, even if these are open-ended, but the self-reflexive, relatively "closed" use of compositional principles, does not typify Vasarely's work. Yet Vasarely was highly systematic in his approach towards composition and he himself uses the language of systematics - "permutation" "programming" and so on to describe his work. We have already used the term "method" to distinguish Mondrian's intuitive approach to composition from that of the Concrete artists and a third term is needed. Although not a completely satisfactory solution I will describe Vasarely's work as combinatory imagism.

Vasarely maintains that his "plastic alphabet" is founded on the binary opposition of Malevich's Black Square. However the fundamental opposition of that painting, a black square within a white square, is not between two diametrically, or digitally-opposed linear elements, since one form is simply a smaller, analog variant of the other, but rather the opposition between black and white. Vasarely recognized this in calling his group of

works inspired by that work the Black-White period. Yet this is prior to the Planetary Folklore period which establishes the "plastic alphabet", and which uses not only tonally-graduated colour but a variety of geometric forms which are not strictly opposable. Vasarely's own theory of morphological transformation, already mentioned, emphasizes the fact that the so-called digital logic of his alphabet merges with an analog one.

The naturalistic or "organic" reading which this encourages is taken much further in the Vonal and Gonflages periods from around 1969 in which the orthogonal grid of the Planetary Folklore works tilts and bends, distorting the geometric forms, and thus breaking free, optically and metaphorically, of both the two-dimensional surface and the constraints of the rectangular support, producing illusions of an infinite regression into deep space, of forms swelling up out of some kind of macro- or microcosmic plasma or honeycombed cellular structures and so on, in other words the exact reverse of what Mondrian put into place with his "tensing" of forms.

Particularly from the early 1970s, in those paintings which involve axonometrically projected cubes in a hexagonal "ground" form, such as the Deuton, ION, MCA paintings (Ill.59), there is another difference from the kind of work we have been looking at, in that Vasarely, does not play surface composition against a deep structure determined by the support. Rather his art denies the support in a way comparable to traditional mimeticism. This is of course appropriate to his desire to represent reality as a flux of ambiguous forms and a consequence of his avowed objective of piercing the "wall" established by Malevich and Mondrian. However it does mean that Vasarely's images function primarily iconically as has already been argued (and in his late projects for the "polychrome city" he returns to naturalistic imagery).

At their most descriptive, Vasarley works are images of things or at least imaginary

things and they constitute in some ways a return to the Albertian window - which is both a determination of a two dimensional surface by its vertical and horizontal parallels and an illusory window onto a three dimensional space.

It can be clearly seen how Vasarely thought he was emulating the structure of language, digitalizing his form/colour units into re-iterable elements, but he did not take his explanation beyond the elementary stage of the constitution of an alphabet, even if this is very complex, to the levels of "grammar" and "syntax", nor did he, despite describing his plastic language as a "code", actually correlate his plastic unities to a lexicon, something for which Kandinsky had set a precedent, although, as we have seen, the works themselves and his style were quite clearly coded.[60]

If he did not formulate a satisfactory explanation of the structure of his plastic language, his explanation of the way in which it worked can be used to supply the deficiency. The following passage spells out Vasarely's theory in this respect:

> The first innocent-provocative question that is put to me and is still put to me with respect to my abstractions is "but what do you want to say with them...?". At first perplexed, after some years I have found not one answer but answers. Objectively speaking, it is a question of a two-dimensional composition of form-colours or a multi-dimensional structure, the result of intuition, science and technique, producing visual stimuli and destined for one of the multiple plastic functions of modern city life. Subjectively speaking it is a question of a poetic creation of sensible qualities, prone to release in others a possible imaginative process. In this

[60] See Poling 1986, pp.71-82 In fact Vasarely criticized Herbin for working with such a method, ascribing letters to certain shapes and then translating words into pictorial form on a purely intuitive basis. See Ferrier 1969, pp.64-5.

> respect, let it be understood, any interpretation or verbal equivalent becomes possible. A metaphysical halo, imagined, desired, invented by the spectator, constitutes itself around my work - which is rigorously dialectical. Over this I have no control.[61]

("Dialectical" here refers to the much-vaunted binary basis of Vasarely's system. However it also has a Hegelian, Marxist resonance which is important to his ethical philosophy. Thus, when Vasarely describes his plastic unities as a "dialectical synthesis",[62] the primary form-ground opposition as a positive-negative opposition bears a weighty burden of philosophical ideas and values).

Vasarely describes here a tri-partite functional model of visual communication which is obviously grounded in his materialist philosophy - the objective material stimulus is both a substance in itself and the expression plane of a sign for an interpreting audience. However when Vasarely claims to have no control over the process of interpretation he is stating both the truth and considerably less than the truth. His metalinguistic strategies, his self-mythologizing writings, interviews and self-edited monographs serve to direct interpretation.[63] Thus, for example, in his self-edited 1974 monograph Vasarely submits his work to a kind of association test:

> round - wheel, speed, communication, machine, progress.
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> square - sheet of paper, checkerboard, furniture, buildings, windows in the wall.

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[61] Vasarely 1965, p74

[62] Vasarley 1965, p.157.

[63] See Vasarely 1965 and 1974. Moles 1968, Dahhan 1979 and Diehl 1979 continue this at a secondary level, making of Vasarely an artist of "the sublime". Cf. Hill's criticism of Moles' "quasi-poetical, quasi-polemical" essay, Hill 1970.

the spectrum -colours, shades, scales, polychromy, visual joys.

the scale - songs, music, harmony, polyphony, auditive joys.

the alphabet - languages, poetry, literature, the press, all knowledge

figures - sciences from zero-to infinity [64]

Vasarely makes very clear use of the connotative codes of the formal features of his works. The materials used, their texture, the choice of colours and range of luminosity are all knowingly employed in order to direct reading of his work in terms of the themes we have discussed.[65] In fact in terms of their referentiality, as has been argued, his works were overdetermined in this respect, both mirroring and being mirrored in the graphic style of the period.

One of Vasarely's techniques for over-coding his work is his use of titles. These are often chosen from a geographic or sidereal atlas, often because their exoticism or poetic resonance, such as Sénanque, Kerrilahuen, Sauzan and Locmaria, the formal features of the work being correlated with the psychological association of sounds: "For a dry and hard work consonants predominated, such as in Karst for example. For a canvas with light colours, the high singing vowels, as in Nineveh, all in yellows, rose pinks and warm greys".[66] Alternatively he uses more general terms from the vocabulary of astrophysics such as Supernovae or microphysics, such as Proton, Neutron. In the case of works such as CTA 102 the name of a star from which, he had read in a newspaper, "signals" had

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[64] Vasarely 1974, p.213

[65] Vasarely's colours were often symbolic - the use of gold and silver to connote metallic surfaces, red as infra-red, blue as ultra violet and so on.

[66] Vasarely 1969, pp.20-21. This is a technique with precedents in Symbolist poetics, as for example in Rimbaud's well-known *Voyelles*.

been received.[67] In general, Vasarely argues that these works are: "the intuitive equivalent of what one is able to perceive in front of the celestial infinity by the light of modern science".[68]

Returning to the Sign

The field of meaning of Vasarely's work incorporates a wealth of sub-meanings, from Marxism to Gestalt psychology to astronomy. Although "science" itself is a subset of "reason" and this brings Vasarely 's work into conjunction with that of the other artists we have looked at, it is clearly separated from theirs by an unmistakable referentiality.

As much as this is considered a positive attribute by Vasarely, the referentiality of his work is also its limitation, precisely because it represents not just the phenomena themselves but a historical way of knowing and so representing them. "Science" and "technology" were amongst the "great signifying unities" of the dominant discourse of the period. Although this also appears to Vasarely as a positive feature, and he is happy to consider his works as communicating this message from the specialized context of scientific research to a general public, these themes are implicated with the particular ideological assumptions of the period and this places Vasarley's work, therefore, especially because of its design-orientation, outside the critically negative tradition of avant-garde modernism. Of course in general it has been the cross-disciplinary nature of the activities of the artists we have been looking at which has been important in introducing techniques

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[67] Vasarely 1969, p.53

[68] Ferrier 1969, p.55. There is in many ways a great similarity here between Mondrian's representation of a "starry night" in his checkerboard composition and Vasarely's own representation in that they are both quaintly idealistic visions of a harmonious cosmos, one which in Vasarely's case is available to unlimited human exploration.

and attitudes to abstract painting from other disciplines, developing its formal possibilities and fuelling arguments of its social relevance and hence, meaningfulness.

Vasarely's practice more so than that of any other artist we have looked at is riven with contradictions - an artist who rejected the bourgeois notion of the inspired artist and the work of art as a fetishized commodity but who was enormously successful both in marketing his own work and in mythologizing his artistic identity. These contradictions were no obstacle to the contemporary critical and public acceptance of his work and this more than anything else is indicative that his work was a "sign of the times".

Despite Vasarely's symbolic homage to Malevich, formally his work owes more to the orthogonally-organized planar surface of Mondrian's Neo-Plasticism and the systematic approach to composition which followed from it. As Neo-Plasticism sprang from Mondrian's study of the facades and scaffolding of Parisian buildings, Vasarely's work returns abstract painting to a referential function not simply through the re-introduction of an illusory three-dimensionality but through the greatly expanded colour and tonal ranges and his innovations with the kinds of material employed and the techniques by which they were used. However Vasarely's recourse to the physiological or behavioural level of pure stimulus response reduced the work of art to a (pre-symbolic) sign, which in historical terms was negatively over-determined by a relatively well-defined connotative nebula, "the space age". Arguably it is precisely because of this factor of automatic recognizability, of the involuntary nature of the progression from signifier to signified that as signifiers the constitutive elements of Vasarely's work were incapable of being transposed to a new signified. In other words, unlike Mondrian's orthogonal opposition, Vasarely's "plastic alphabet" has not proved able to function diachronically in the symbolic discourse which, according to our argument, constitutes abstract painting .

CONCLUSION

The language of abstract painting is not a natural, universal language, nor a language in the sense in which English or French are languages. It is an artistic language. The common factor which unites these different types of language is the fact that all languages are structures for the communication of meaning.

An artistic language unquestionably differs from ordinary verbal language. Its meanings are much broader, more open to a personal reading grasped holistically and immediately and without the benefit of clearly defined rules. However there is no simple opposition here. Artistic language, like verbal language, is a conventionally-structured discursive system and the addresser and addressee necessarily share a semiotic universe, without which their exchange would be meaningless.

All understanding is culturally-formed, that is governed by conventions, even if it is to be readily admitted that this does not necessarily mean that it is verbalized as such. Where verbal language has grammatical rules and a lexicon, more or less universally-agreed upon, I have argued that abstract painting has a systematic structure and an interpretively-determined macro-coded meaning motivated by its material and optical features.

As with verbal language, the twin poles of metaphor and metonomy, or the pictorial composition's external and internal relations, function to determine interpretation. Different styles of abstract painting give different weight to these operations. With the work at which we have looked we have seen a shift from the metaphoric to the metonymic and back to the metaphoric. Metaphor and metonomy, as Jakobson has pointed out, are able to be mapped

onto symbolist and realist trends in literature.[1] We have seen that there is a similar alignment in abstract painting, the more systematic a work is the more it is identified with the "concrete" meaning of the work as a real object. Whilst the metaphoric approach is much more suggestive of interpretive meaning, both metaphor and metonymy have semantic import, both functioning in the production of meaning. Even the completely systematic work of Lohse was metaphorically related to a socio-ethical meaning.

In the work at which we have looked the shift between metaphor and metonymy is, of course, relative. Abstract painting was, we have seen, historically rooted in an opposition to the metaphorics of the Symbolists and stimulated by the metonymic structures of Analytic Cubism and thus from the outset its tendency lay towards the metonymic .

The artistic use of verbal language challenges the norms of everyday use without completely abandoning them, exploring its possibilities at the levels of both expression and content. However, we have seen that, even from the point of view of properly linguistic analysis, there is a considerable factor of indeterminacy in ordinary language use, both semantically and syntactically, much more so than is commonly assumed. The flexibility of attitude that this implies for a notion of language in general I have attempted to carry over to abstract painting in order to substantiate the claim that there is a "language" of abstract painting as more than simply a loose analogy. To do this I have concentrated on the communicative function of abstract painting within a social context.

To a certain extent it is axiomatic that abstract painting functions semiologically. Altering Metz's dictum somewhat, we can say that abstract painting is a language because it has been used as a sign of a meaning for someone. It has not been used because it is a

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[1] Jakobson 1956, pp90-96.

language.[2] Given that abstract painting is created within the larger socially-defined tradition of painting, and in particular Modernist painting, it necessarily acquires a syntactic and semantic significance by virtue of such relationality. This connectivity is in fact a history of the transformation of both the formal characteristics of painting and their conceptual implications as different "speakers" respond to a precedent pictorial proposition at the levels of both theory and practice. These enunciations in turn generated other responses in an outwardly spiralling proliferation, as a language proliferates, through the splitting of the sign and transformation of the signifier and/or the signified in a sustained, but non-linear, and ultimately experientially-determined, discourse.

Returning to our model of the sign categories of abstract painting (p.53 above), which was derived from Mondrian's painting, and re-considering it from the point of view of the subsequent developments at which we have looked, we can see that although the structure of the model has remained stable, every category fixed by the Neo-Plastic style has been de-regulated as a source of signifying means. At the same time the compositional process has been subjected to an over-arching mathematization. This was both implied by Mondrian's rejection of the vagaries of Symbolist poetics and also an outstripping of his intentions.

Whilst Mondrian's practice established all the sign categories for these subsequent developments, there were a relatively limited number of alterations in terms of compositional principles, Van Doesburg introducing rotation of line and plane and Vantongerloo their deformation. Bill, Lohse, and Vasarely, as second-generation artists, all worked within these formal parameters despite the different appearances and intentions of their work.

When Van Doesburg writes in his Concrete Art manifesto that: "A pictorial element

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2 Cf. Metz 1974, p.47.

has no other meaning than what it represents, consequently the painting possesses no other meaning than what it is by itself", there is evidently a paradoxical and confusing conflation of ideas about meaning. In our terms, in formulating a "concrete" aesthetic theory Van Doesburg is rejecting the metaphoric function whilst affirming meyonomy, and simultaneously eliding the presence of the interpreting subject.[3] It is a confusion which recurs in Stella's claim, cited at the very outset of this study and indeed it is very common in general in writing about abstract painting. I would hope that my analysis and model of abstract painting has clarified the issues involved and resolved that confusion.

We have seen how Mondrian's move to abstraction (and this is arguably so for the two other seminal figures of abstraction, Kandinsky and Malevich) was fueled by a rejection of the Symbolist's penchant for allegorical representation. This was felt to be lacking in artistic integrity precisely because it fixed the imagination to specific denotata. Whilst rejecting allegory however, Mondrian and the abstract artists who followed on after him, did not eschew a symbolic function *per se*, although diachronically the appearance of the symbol and its interpretation mutated through both internal (intra-systemic) and external (extra-systemic) causes. Over and over again these artists discussed their painting in terms which clearly demonstrated that it was intended as a generally comprehensible analogy or metaphor for meanings which were conceptually distinct from them. The paintings were, in other words, vehicles of meaning at the same time as they were just what they were "in themselves"or a purely metonymic structures. It is interesting that when this semiotic function becomes most clearly codified, as in the case of Vasarely's work, we find ourselves most prone to questioning whether in fact we are dealing with a truly artistic language and not simply with a sign

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3 Baljeu 1978, p.181.

language.

With abstract painting attention shifted away from meaning as a transcendent signified to meaning as immanent to the signifier itself. In this sense, the abstract painting conveys information about itself, it is a self-referential signal rather than an other-referential sign, as is the case with figurative painting. It is this fact which eventually led to the kind of assertion made by Stella. Implicit in this claim is a single-level theory of artistic meaning. However we have demonstrated the duality or double-articulatedness which is central to the functioning of language operates in abstract painting as a semiotic phenomenon. This duality we have found in the dialectic between what I have called the levels of sense and meaning and in the relations between the levels of self-denotation and connotation which are in turn based on the fundamental duality of the type-token relation.

Meaning is a function of interpretation, in abstract painting as in verbal language. It is not immediately given with the material presentation but is dependent upon a host of motivating factors, whether reflective or pre-reflective. With abstract painting, just as in verbal language, with the word or sentence, it is the context of pictorial element in the individual painting and in turn the placement of the painting in a pre-constituted field of meaning, however open, which makes meaning. Any utterance requires a subject to interpret it meaningfully. The workings of this metalinguistic interpretive process I have called "downward causation". It applies to both the making and viewing of abstract paintings, systematically enabling and determining the meaning of those facts which the painting as a material object presents. It is impossible to exhaust the details that such inter-relationality and inter-textuality actually involves in any particular instance, however we have seen how it works in principle, largely with respect to the main themes put forward by the artists themselves.

As I suggested at the very outset of this study, although the kind of painting at which

we have looked has been self-consciously system-oriented, I believe that we could extend the form of analysis undertaken here to other kinds of abstraction.

Of course I have been testing abstract painting against a model of verbal language and this has meant a certain reduction of its phenomenological specificity. I have attempted to demonstrate not a homology but a substantial analogy between the "language" of abstract painting and a concept of "language" as it is ordinarily used, complex as are the distinctions, by placing both in the same semiological family of the sign adumbrated by Saussure. However clearly abstract painting has qualities which exceed the verbal. No words can substitute for the particularity of a form or colour or the felicity of their conjunction. Yet we have found that abstract painting is ultimately dependent upon language. Not simply a verbal language but rather the macro-discourse which all social phenomena depend. This is not in any way to devalue abstract painting by suggesting that its meaningfulness is "just words", but on the contrary, to demonstrate that meaning may be conveyed by means other than simply words.

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