Can art be logical?

Logic is concerned with the relation between reasons and beliefs. Artists too are concerned with reasons and beliefs but not specifically with the **relation** between reasons and beliefs. When trying to deal with the relation between evidence and conclusion visual artists argue but their arguments are peripheral to their central concern which is making things. Questions like: ' *is this shade of red pushing that blue too much towards green'?* , are problems of taste not logic. But it is a problem of logic to determine if the **argument** *'Complementary colours when mixed produce grey. Red and green are complementary colours, therefore if I mix red and green I should get grey'* . is correct. Whether the statement is *true* or not is a matter of colour theory. The logician is not concerned with the truth of a statement only whether it is a valid argument or not.

An argument requires a premise and a conclusion. It is therefore difficult to see how logic, which deals with argument, can be applied to art works since there are literally no arguments in a painting or a sculpture. Discounting, patterns of applied art and *'the painter's secret geometry'*, the idea that logic could be linked to the practice of fine art was foreign to European painting until sixty years ago.

I hope however to show that logic can be applied to compostion without suggesting that this a way of doing logic with paint and canvas.

Apart from the romance of 'scientism', there are practical and ethical reasons why some abstract artists turned to logic. Abstract art was itself attributable to reasoning but stripped of iconic signs, it became an area of self-expression and obscurity. A few abstract artists felt uncomfortable with this and sought to re-introduce some kind of objectivity. At first they turned to mathematics and eventually to logic.

From 1924 until his death in 1931 Theo van Doesburg proposed Art Concret as a radical alternative to lyrical abstract art. His objections to the latter are summed up in a letter he wrote to Anton Kok. *'I can scarcely see any differencei n the ways in which a milliner , a flowerseller or a pastry-cook make arrangements according to feeling, and the ways in which an artist composes according to feeling.'* (Theo van Doesburg, 1930)

Art Concret was defined by Max Bill as: *'..the building up of significant patterns from the ever changing relations of rhythms and proportions of abstract forms, each one having its own causality, is tantamount to a law unto itself.''* (Max Bill, Switzerland 1936-49)

In 1949 Bill published an essay entitled 'The Mathematical Approach to Art'. He later modified his position and placed emphasis on logic not mathematics. He wrote:*'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.*(Max Bill, 1974).

All art art depends on an ability to interpret signs. Iconic signs resemble things in the real world. Figurative painting makes use of iconic signs and systems like perspective to to convey information..

Iconic signs are deliberately excluded from Art Concret which relies instead upon the relation of sign to sign to communicate meaning. In the closed worlds of Art Concret, signs tend to be self-sufficient and are governed by syntax implicit in their combination. This is why the components of such art tend to be chosen for their combinatorial rather than their pictorial attributes. This makes for a different category of meaning to that encountered in figurative art. The simplicity of the forms of Art Concret is influenced by combination and also perception. The numerically more complex of the two spirals shown at the beginning of my talk, is readily perceived as a texture. The principle of economy of effort resolves complexity into 'chunks' and groupings of more easilly assimillated information. It is the interdependency of relationships that makes contemplation of concrete art rewarding , not its complexity.
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Apart from examplel like the Bayeux Tapestry, Trajan's Column or Hogarth's painting: 'Marriage a la Mode,' which illustrates events in chronological order, most narrative art does not lend itself to descriptions which could be formulated as arguments. But it is possible to construct sentences in logic about the things observed in a painting without necessarilly being able to link those sentences into an argument. of any kind least of all one that tells us more about the work than can be observed directly.

Art Concret is more amenable to descriptions which can be formulated as arguments because it deals with syntactic not semantic rules. It is possible to make mistakes with regard to rules of perspective. In Art Concret mistakes occur through inconsistent application of an implicit rule. Whether inconsistency is an error depends on an interpretation of the context. There may be more than one correct interpretation due to the nature of perception. Its ambiguity, limitations and imperfections add to the complexity and enjoyment of visual art. Unlike the use of logic in science, law, etc., the application of logic to art has to take into account the nature of artefacts and how they are perceived.

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(...)   There
are paintings described as 'logical' when they are apparently 'ordered' or 'geometrical'
or 'consistent'. Consistent behaviour however is not equivalent to logical behaviour and
although consistency is a necessary condition for something to be logical, it is not a
sufficient one. In deductive logic the premises necessarily entail the conclusion. I have
failed to find art which exhibits such entailment. On the other hand there does seem to be
art that provides evidence in the form of implied progressions of colour that supports or
warrants certain conclusions about artistic intentions. This principle is known as 'informal'
or 'inductive ' logic as distinct from formal or deductive logic and it is a form of reasoning
in which it is inferred that what is true of a number of observed facts is true of all such
facts.   (...)

The cubist painter Juan Gris (1887-1927), described
the methods of the old masters as 'mostly inductive' and his own methods as
'deductive'. He said: 'I work with the elements of the intellect....I try to make concrete
what is abstract I proceed from the general to the particular.' and ' Mine is an art of
synthesis , of deduction.'   (...)

Leon Chwistek   (1884-1944) was a futurist painter but he published several works
on logic. He invented a pictorial theory known as 'Strefizm' but never applied it strictly to
his own painting. From 1923 onwards he became involved with the Marxist Left, and in
1944 was made a member of the government of Poland that was formed in Moscow. (...)

There comes a point where logic and extreme abstraction lose their reference to particular
things. For logicians this was a deliberate and necessary objective. For
Mondrian   it became a goal in itself but for van Doesburg the loss of semantic
information in abstract art was an intolerable problem.   He
poured scorn on art based on feeling and in place of abstract art he proposed 'concrete art'.
Van Doesburg, argued vigorously for 'logical construction instead of lyrical imagination'. (...)

Max Bill   (1908-1994) developed van Doesburg's seminal ideas
concerning art concret. In 1949 Bill published : The Mathematical Approach in
Contemporary Art' which influenced Post War Modernism. In 1974 he wrote: *I prefer
today to describe this approach 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** operation
and scrutiny.' (...)

I doubt the wisdom of trying to transpose a language of formal logic directly into a concrete
visual art form because the abstract concepts of logic have no concrete equivalents.   (...)

Visual art is subject to laws of perception which are
of a different order to the cannons of logic . The human perceptual system does not always
enable us to see things exactly as our intellect knows them to be. We experience optical
illusions for example and it is these illusions that present us with dilemmas and
alternatives which enrich our visual experience.   (...)