TATE

⌄ ch Publications → Tate Papers → Tate Papers no.31 → The Geometry of Syntactics, Sem...

The Geometry of Syntactics, Semantics and Pragmatics: Anthony Hill's Concrete Paintings

SAM GATHERCOLE

Between 1952 and 1956, the British artist Anthony Hill made a small number of abstract, concrete paintings before turning away from painting entirely. This article focuses on Hill's semiotic approach to his work, using this to explore the position of the 1952–6 paintings within the post-war cultural context and their hostile relation to art critical discourses at the time.

🐦   f   ✉

CONTENTS   ⌄

The abstract, concrete paintings made by Anthony Hill between 1952 and 1956 (fig.1) are simultaneously simple and perplexing; they are familiar works when set within the history of modernist painting – following, say, the bold, geometric compositions of Piet Mondrian (1872–1944) – and yet are at odds with their particular art critical context. As this essay

will show, Hill's work occupied its moment – and occupies art history – stubbornly and awkwardly. Rising to the challenge of the paintings, this discussion attempts to make sense of the ideas and concepts that the works simultaneously clarify and complicate.

Fig.1
Anthony Hill's studio in Greek Street, London, 1956, showing paintings in progress
© Anthony Hill
Courtesy of Anthony Hill, care of Mark Thomson
Photo © Adrian Flowers

This essay draws on terms associated with semiotics, and treats Hill's paintings as signs that carry meaning and have the capacity to communicate that meaning. This approach is not without its issues: as concrete works, Hill's paintings are generated out of their own logic, and thus lack the basic characteristic of a sign in which something external is pulled into the field of signification. Rather than abstracting from an observed subject, concrete art generates form from its own principles. As such, a concrete work refers only to itself; it does not signify – it does not stand for something else – as a conventional sign does.

The term 'concrete art' dates back at least as far as 1930, when Paris-based artists Otto Gustaf Carlsund, Theo van Doesburg, Jean Hélion, Leon Tutundjian and Marcel Wantz published 'The Basis of Concrete Painting'.[1] According to their text, concrete painting excludes 'lyricism, dramaticism, symbolism, etc.' in favour of a 'mechanical' technique and an 'effort for absolute clarity'.[2] For Hill, concrete art is 'pure plastic invention, where the work of art exists in its own right'.[3] However, one implication of his paintings from 1952–6 is that they can be read, although such reading is dependent upon the viewer being familiar with the language used within the work. With such matters of familiarity in mind – and given the muteness of the works and, in their local context, their unfamiliarity – Hill acknowledged a necessity to write about his art and ideas. In 1954 the artist said that he felt 'bound to express not solely in [my] work but also in words'.[4] As early as 1952, Hill was describing concrete art as 'a new language with new aims and attitudes', and insisting on a 'function, value and need for the exposition of ideas through writing'.[5] Hill's 'project' should therefore be understood on two levels: one practical, the other theoretical. These

two levels are distinct in the form they take, but they remain inseparable; they are to be taken as integral components of a coherent activity.

Semiotics breaks down linguistic structures, and names the stages through which signs assume or acquire meaning; how signs function within language. Engaging with, or reading, the structural principles and thematics apparent within Hill's paintings is one level on which a model derived from semiotics is useful. In addition – and this will emerge as a major theme of this essay – it is productive to consider the paintings as statements or counter-statements made strategically in relation to a commonly held language. In 1954 the critic Lawrence Alloway, who was supportive of Hill's work, noted something of the antagonism apparent his paintings. Alloway wrote of the artist 'dropping' his 'concrete art-works … in the muddy water of 20th-century aesthetics'.[6] Hill himself declared his 'new language' to be 'for the most in complete contradistinction to inherited ones'.[7]

For the semiotician Charles Morris, 'language is a social system of signs mediating the response of members of a community to one another and to their environment'.[8] To operate in this way, language needs to be used in a recognisable way: 'in short, to understand a language or to use it correctly is to follow the rules of usage (syntactical, semantical, and pragmatical) current in the given social community.'[9] However, this is not to say that language is fixed: it is open to change, but change comes through a creative engagement with its rules and usage. The paintings that Hill produced between 1952 and 1956, as well as the statements he published alongside these paintings, engage with commonly held meaning, but also challenge its terms. By the end of a short period of painting, Hill – the emergent 'constructionist' – felt that he had developed a visual and material language in a 'new realm' and was thus operating more autonomously, without being limited or bound by the commonly held language of art:

> [T]he constructionist sees himself as an innovator, developing a tradition and not merely creating a revolution. In this sense he can be represented as being both dogmatic and empirical – dogmatic in his rejections and deliberate position, empirical in his move

forward from these 'consequences' making constant testings and researches in the new realm in which he finds himself.[10]

This essay will identify Hill's paintings as aggressive signs – as representing a phase of antithesis – *and* as contributing to the forging of concrete signs – the development of a new form of synthesised practice. The works are antithetical in relation to the prevailing art discourse, but they are not simply to be received as negative statements. Instead, the paintings proceed towards a positive synthesis.

The discussion that follows is structured according to Morris's three-part 'syntactic-semantic-pragmatic' system of semiotic analysis. According to Morris, 'A language in the full semiotical sense of the term is any inter-subjective set of sign vehicles whose usage is determined by syntactical, semantical, and pragmatic rules.'[11] For Morris, syntactics relates to 'the logico-grammatical structure of language';[12] 'Semantics deals with the relation of signs to their designate and so to the objects which they may or do denote';[13] and, 'By "pragmatics" is designated the science of the relation of signs to their interpreters.'[14] Rather than getting enmeshed in Morris's model, however, the discussion here is concerned with Hill's particular appropriation of the syntactic-semantic-pragmatic framework. Hill engaged with Morris's work and it informed the artist's own elucidation of his practice. As such, Morris's model allows a degree of access to Hill's own thinking, intentions and priorities; it is the structuralist programme of which the ideas made concrete through the paintings are but one part. Exercising a degree of license between and beyond Morris's setting of terms and Hill's appropriation of them, this essay also uses the syntactic-semantic-pragmatic model as a means of exploring the broader issues that emerge when contextualising the paintings.

Hill references Morris on a number of occasions in his statements and articles, and through Morris he found the means to attempt 'a programmatic analysis' of his own work.[15] In 1954, Hill reported having commenced four years earlier his 'researches into the principal problems of pure plastic art as [I saw] them to be'.[16] The 'principal problems' were

threefold: 'syntactic', 'semantic' and 'pragmatic'. By syntactic, Hill meant 'the relations in the constituent structure, the internal plastic logic', or, put more simply, what happens within the paintings.[17] By semantic, Hill meant 'the relation of the internal structure to the structure of the external (reality)'.[18] The semantic thus concerns the relationship between the concrete image and the discourse in which it is held and through which meaning is possible. Finally, through the pragmatic Hill was introducing 'the relation of the syntactic and semantic thematic issues to the integral problem of the plastic-environment realm (the total visual domain)'.[19] As such, the pragmatic involves a broad view of physical objects in a physical environment, and describes the wider practical consequences of the syntactic and the semantic aspects of a work. The first part of this essay takes a prompt from the syntactic to consider the material form and structure of Hill's paintings; the second uses the semantic to consider Hill's paintings in connection with a range of related discourses; and the third looks to the pragmatic to consider the paintings as contingent entities that depend upon their context.

Syntactics

Of particular interest when analysing the syntactic dimension of Hill's paintings are the decisions he made regarding formal structure and materials, and what is achieved through their combination. This discussion will reflect on the works Hill made between a period of collage-based production in 1950 and 1951 and the construction-based work that he commenced in 1956. The analysis will be expanded further to consider mathematics in relation to the paintings. Throughout, it will register the play between pictorial space and objecthood that is significant in Hill's paintings and, indeed, his wider oeuvre.

The concrete paintings that Hill made between 1952 and 1956 present boldly delineated two-dimensional forms distributed across material surfaces. As well as having concrete materiality, the works operate as schematics: they play optically with figure/ground, form/counter-form relationships. The paintings' visual fields establish degrees of ambiguity, and the material fields are similarly variegated through the use of different

paints and their application. The paintings are both austere and playful in their operation. Hill sketches this development in his work as starting 'within the "open field" of Dadaist, Surrealist and free abstract painting around 1950', before moving 'via collage to "concrete painting", another "open field" that seemed to be as playful as it was serious about plastic problems'.[20]

In his writings, as in his paintings, Hill lurches from the dense complexity of a language derived from semiotic theory to statements of disarming simplicity and directness. As well as writing about his work through the concepts of syntactics, semantics and pragmatics, Hill has stated that a painting simply 'presents what it does'; 'there are these things and you can have them like this'.[21] Such remarks posit the non-allusive, material and pictorial facts of the paintings, and also imply a contingency to the work. Hill stresses the way that the work is configured, not how it might be, even if it might easily and justifiably be configured another way. What is important to Hill is that any verbal statement 'rigorously' refuses to claim 'a great deal of what an artist may hope to communicate (such as "metaphysical" aims like "I am trying to express infinity")'.[22] It is a pictorial fact that is asserted: 'The work is the sum of what is in it', Hill wrote in 1954.[23]

Fig.2
Anthony Hill
Painting, Red and White 1952
Oil paint on canvas
915 x 915 mm
Museu Calouste Gulbenkian, Lisbon
© Anthony Hill

Fig.3
Anthony Hill
Jeux 1951
Collage and enamel on cardboard
760 x 640 mm
Collection of the artist
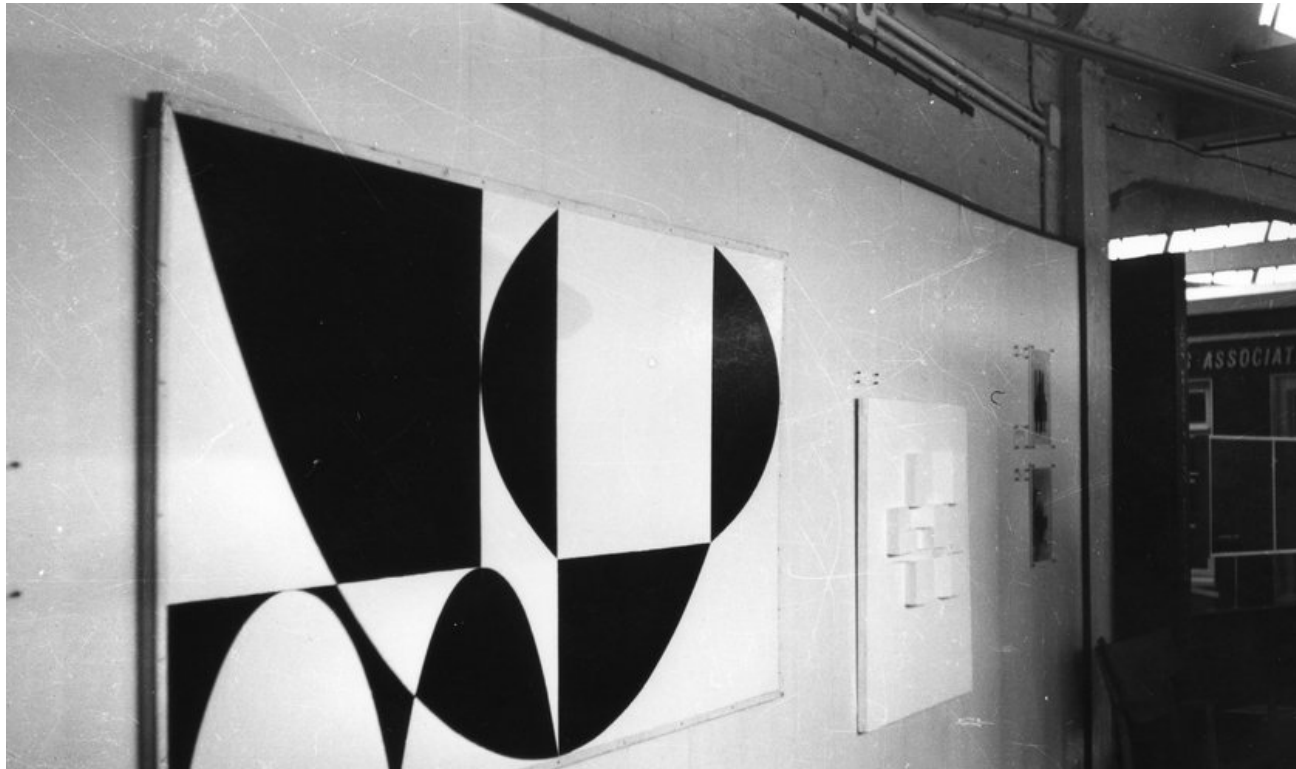© Anthony Hill
Courtesy of Anthony Hill, care of Mark
Thomson

Fig.4
Installation view of Anthony Hill's *Catenary Rhythms* 1953–4 in the exhibition *Artist versus Machine*, Building Centre, London, 1954
© Anthony Hill
Courtesy of Anthony Hill, care of Mark Thomson

Painting, Red and White 1952 (fig.2) can be regarded as Hill's first concrete painting that moves away from collage-based work such as *Jeux* 1951 (fig.3) and leads into works like the now lost *Catenary Rhythms* 1953–4 (fig.4), which was reproduced opposite *Painting, Red and White* in the 1954 book *Nine Abstract Artists*.[24] Collage utilises, responds to, and manipulates existing materials; *Painting, Red and White* signals a shift towards the artist originating the pictorial components of the work. What *Painting, Red and White* took from works such as *Jeux* – and, indeed, what is maintained in subsequent works including *Catenary Rhythms* – was a play with figure/ground or form/counter-form that had been a preoccupation of Hill's collages. In immediate response to the collages and collage-related paintings produced in 1950 and 1951, the critic Toni del Renzio wrote that Hill 'accentuates the rhythm of his structures by a sort of dissonant disposition of similar elements'.[25] Such words continue to apply in relation to *Painting, Red and White*, albeit with less 'dissonance' apparent in the 'disposition'. In this work there is a fundamental move away from reworking or recycling existing elements and found materials through collage, and towards the devising of elements and their distribution across the paintings. In other words, Hill has made all of the decisions, rather than feeling his way in response to collage materials. The expressive potential shifts from characterful elements assembled in collage to decisive concrete statements of economy and clarity.

Figs.5 and 6
Anthony Hill
Study for Catenary Rhythms 1953–4
Both collection of the artist
© Anthony Hill
Photos © Sam Gathercole

It is interesting, however, to observe the surviving preparatory works for *Catenary Rhythms* made in 1953–4: as well as drawings on graph paper that plot the composition precisely, there are rougher, collaged studies that combine smooth and corrugated cardboard, and raw materials with painted elements (figs.5 and 6). Collage clearly played an important role in Hill's working method at this stage, even if his ultimate objective was to approach the work in depersonalised, concrete terms.

The 'relations in the constituent structure' of *Painting, Red and White* suggest – on a syntactic level – something of an 'internal plastic logic'.[26] Rather than appearing to be the result of an arbitrary distribution of elements, the feeling is that structural principles have been employed; that a system has been devised and adhered to. In the work, an implied grid of verticals and diagonals hints at a framework or armature that guides the distribution of individual components across the painted surface. However, a consistent logic is elusive; ambiguity prevails. The grid appears misaligned in places (most notably on the diagonal axes), and this disrupts the suggestion of order and encourages a sense that we are seeing an image rather than a surface. The inclination is to read the image as a schematically rendered representation of geometrical forms in space (as seen, for instance, in an axonometric projection). There is also an alternative inclination to regard the image as one configuration of something like a tangram puzzle: there is a sense of a figure that has been cut or fragmented – a shattered red square, for instance.[27] All this said, however, *Painting, Red and White* achieves an unprecedented structural definition in comparison to Hill's previous works.

Fig.7
Anthony Hill
Composition, Light Blue, Dark Blue and Violet 1952
Collection of the artist
© Anthony Hill
Photo © Sam Gathercole

Hill's own catalogue of his works records that two were produced in 1952. One is *Painting, Red and White*; the other is *Composition, Light Blue, Dark Blue and Violet*, sometimes titled *Study for Composition (Homage to Frank Kupka)* (fig.7). *Painting, Red and White* is the more assured work: Hill himself concedes that *Composition, Light Blue, Dark Blue and Violet* 'was not completed with the care of' *Painting, Red and White*.[28] What is interesting about both works is that they are, Hill notes, 'somewhat influenced by Kupka'.[29] In July 1952, Hill received a copy of Kupka's visual book *Four Stories of White and Black* (1926) directly from the artist. The extreme economy of some of Kupka's work (such as the *Abstractions* gouaches produced around 1930) prefigures and even facilitates the restraint of Hill's paintings made between 1952 and 1956. Connections might be drawn between the final part of Kupka's *Four Stories of White and Black* and Hill's *Painting, Red and White*. In this fourth story, a visual narrative unfolds in which free-floating planar forms (parallelograms) slowly align with each other to articulate an architectonic structure. The vertical and diagonal axes that combine to supply a dynamic motif that runs through the story also combine to shape the dominant thematic of *Painting, Red and White* (albeit without Kupka's sequential formal narrative). Furthermore, as much as visual connections might be speculated upon, links can be made to Kupka's words. In the 'manifesto' that opens the *Four Stories of White and Black*, Kupka writes of his work's 'concrete meaning'. Kupka also distances his work from that of the 'mystery and magic' of artists who copy, interpret or abstract reality, as Hill would come to do; Kupka describes painters as 'our charming ancestors who belong to the same species as alchemists, astrologers and shamans'. Instead: 'The work of art, being in itself an abstract reality, must be made up of invented elements.'[30]

A particular, economised composition is presented in *Painting, Red and White*, and this is accentuated through a similarly economised surface. This is the first work by Hill in which what would emerge as a preoccupation with surface and the distinguishing of material properties can be clearly observed. Specifically, *Painting, Red and White* possesses two different qualities of surface. A single type of paint is used in the work: oil paint that is

occasionally catalogued, with industrial connotation, as 'sign painter's paint'.[31] The red areas have been applied more thinly so that the weave of the canvas is visible, and the white areas more thickly, with visible brushwork (albeit more workmanlike than expressive). One effect of this is to disrupt or counter the reading of figure/form (the red regions) and ground/counter-form (the white regions), in that the latter carries more material weight and substance. In combining different surface qualities, connections might be made with Hill's collage work up to and including 1951, but the artist differentiates between the collages and the paintings produced between 1952 and 1956. For Hill, *Painting, Red and White* marks the beginning of an interest in construction (superseding an interest in assemblage) in that any painting that features three colours or fewer and that is presented so as to articulate a clear geometry can be regarded as a two-dimensional construction.[32]
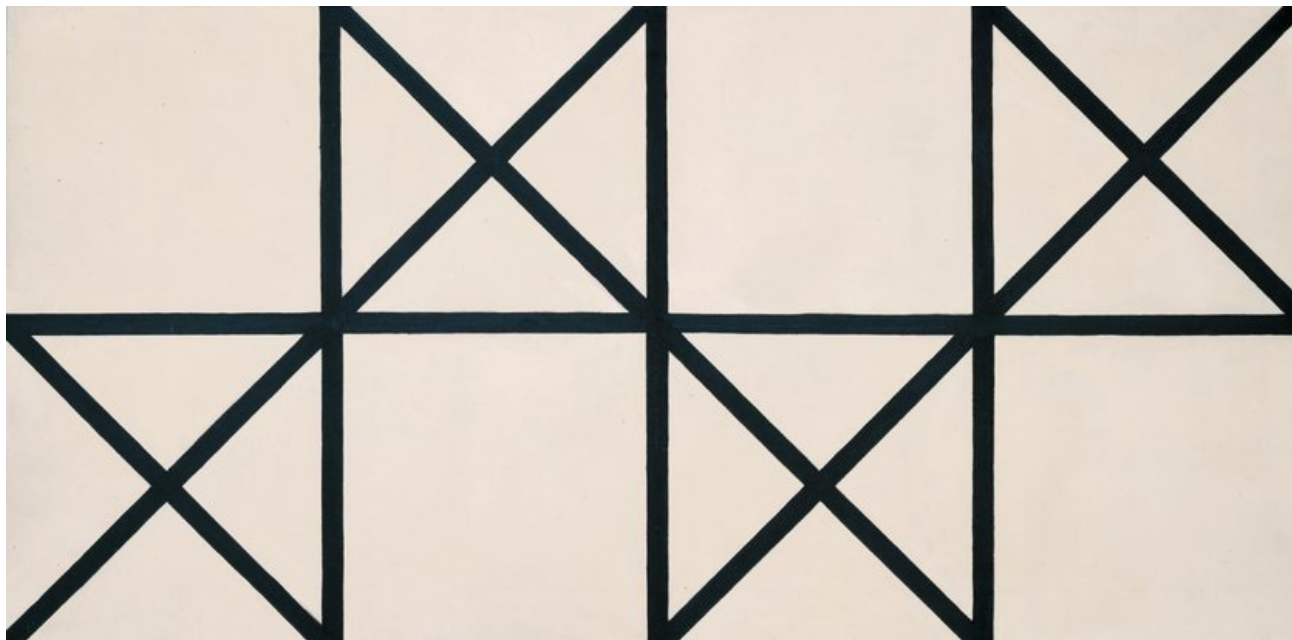
Fig.8
Anthony Hill
Orthogonal/Diagonal Composition 1954

Blackboard paint and enamel on canvas
606 x 1216 mm
Tate T01906
© Anthony Hill

Hill's 1954 painting *Orthogonal/Diagonal Composition* (fig.8) consolidates and further develops the idea of painting as construction. From the vantage point of 1956, when Hill had moved away from painting and into relief construction, he wrote that he had 'started making abstract paintings & collages in 1950', but that from 1954 he had been 'solely concerned with constructionism'.[33] In *Orthogonal/Diagonal Composition*, two different types of paint are employed: matt blackboard paint for the lines, and gloss Ripolin enamel paint for the white areas. The painting takes the form/counter-form experiments of works like *Painting, Red and White* in a new, linear direction. Instead of blocking in areas of the composition with paint, *Orthogonal/Diagonal Composition* signals the distinction between alternate regions through the introduction of diagonal crosses. These are the elements alluded to in the title: orthogonal lines are ones that are perpendicular at the point at which they intersect. In employing such orthogonal relationships, the work functions more as an articulation of a material field than an image. Any residual ambiguity (such as is apparent in *Painting, Red and White*) is fully obliterated through the presentation of linear incident across the surface. Here – again thinking of Hill's take on the syntactical – the 'relations in the constituent structure' of *Orthogonal/Diagonal Composition* clearly articulate an 'internal plastic logic' in a consistent and rudimentary form.

Orthogonal/Diagonal Composition was the first purely linear work produced by Hill. As such, it can be thought of as the first of Hill's last paintings, although the works made in 1955 and 1956 (to which the moniker 'last paintings' is applied in his case) were exclusively concerned with orthogonal relationships. The 'last paintings were', according to Hill, 'orthogonal but simple in structure and concerned … with optical and physical problems'.[34] One means by which *Orthogonal/Diagonal Composition* explores 'optical and physical problems' is in the employment of two different paints: the different surfaces

change optically depending on the light conditions and angle in which they are viewed. Another is in the 'deliberate' optical instability 'at the interior junctions', where the painting has the effect of a Hermann grid: the eye is deceived into seeing something like ill-defined white dots at the places where the lines intersect.[35]

It is tempting to read *Orthogonal/Diagonal Composition* as a geometrical or mathematical demonstration, as if the composition was a given, rather than being determined thus by the artist. The temptation to read the work in this way is encouraged by the work's facture as well as by the simplicity, if not obviousness, of the image. In terms of facture, *Orthogonal/Diagonal Composition* appears more functional than polished; more of a trial run than the final thing. One might say, however, that the avoidance of a too-pristine rendering asserts a material surface: the viewer is alerted to this particular surface and the immediate physicality of the work. Either way, it is apparent that no decisions have been made during the process of making the painting itself, thus conforming to the concrete principle that 'a work of art must be entirely conceived and formed by the mind before its execution'.[36] Concrete art restrains the mediating hand of the artist at the stage of a work's physical production. The mathematician John Myhill writes of Hill's purposeful avoidance of 'sensory appeal' and his works' avoidance of 'brush-stroke or grain' (or even the artist's 'breath').[37] Even when a work is evidently hand-painted, the hand of the artist is not privileged.

Orthogonal/Diagonal Composition has been referred to by Hill as a 'geometric readymade'.[38] He was interested in and engaged with mathematics – he was drawn to its precision and clarity – but it would be a mistake to reduce a work such as *Orthogonal/Diagonal Composition* to a mere geometrical scheme or mathematical figure: Hill's artworks are not mathematics, nor are they usefully approached as riddles to be solved with a mathematical key.[39] Hill writes that the 'mathematical thematic or the mathematical process can only be a component' and that the 'object of achievement … is clearly not "mathematics"'.[40]

Furthermore, Hill is insistent that his painted works produced between 1952 and 1956 were made using an empirical approach: that they were 'the result of creative invention arising from concerns within the sphere of art'.[41] Commenting on *Painting 55–56* 1955–6 (Tate T01907), which will be discussed towards the end of this essay, he stated, 'This painting has no calculated composition and is a study in texture and reductionism.'[42] He also acknowledged that the last paintings generated tensions between the empirical and the measured or calculated. The method through which the late painted works were produced, Hill writes, 'conflicted with my interest in mathematical concepts and resolving this situation became [a] factor in moving out of painting altogether in 1956'.[43] Mathematics subsequently supplied a structuring principle for Hill's constructions;[44] it also supplied the means by which to retrospectively analyse empirically produced works.[45]
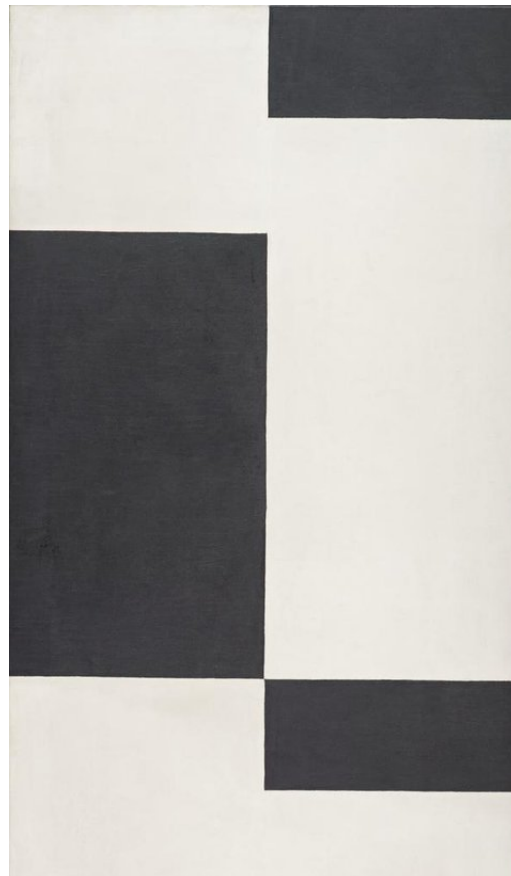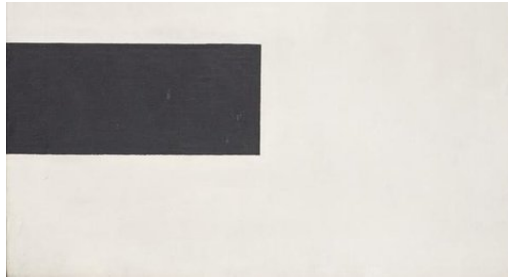
Fig.9
Anthony Hill
Orthogonal Composition 1953–4
Oil paint on canvas
1372 x 610 mm
National Galleries of Scotland, Edinburgh
© Anthony Hill

Fig.10
Anthony Hill's studio in Greek Street, London, 1956, with the relief version of *Orthogonal Composition* in the centre
© Anthony Hill
Courtesy of Anthony Hill, care of Mark Thomson
Photo © Adrian Flowers

It is apparent that a curiosity about the potential of utilising mathematical systems in the production of work began in the paintings Hill created before 1956. Following the empirical production of *Orthogonal Composition* 1953–4 (fig.9), Hill made a smaller (708 x 302 mm) relief version in December 1955 using root (√) rectangles (fig.10), which are shapes that follow consistent proportional rules.[46] Notes dated February 1957 indicate that the idea of producing the relief version 'came from the fact that the canvas measurements 24' x 54' are a very good approximation of a √5 rectangle', but stress that 'at the time of making the painting there was no interest in √ [root] rectangles whatsoever'.[47]

Hill was familiar with the published works of artist Jay Hambidge that detail models of geometrical composition and 'dynamic symmetry'.[48] He experimented with elements such as root rectangles that, according to Hambidge, ensured balance and harmony within an asymmetrical composition. But again, Hill stated that his work was not generated through the employment of, or blind faith in, formulaic principles. In 1961 he wrote that the 'constructionist artist … is not an adherent of mathematical concrete art and least of all is

an adherent of number magic (section d'or) of the scientistic cults'.[49] Hill drew a 'distinction between "the interest of a work" and its "thematic"', the thematic partly being the work's mathematical basis.[50] Hill goes on to acknowledge and distinguish 'the extent to which a theme imposes itself into the physical structure, and the extent to which its realisation is open to possibilities of transformation without losing its identity'.[51] Many of Hill's works were trialled or analysed in different materials and scales.[52] He writes, 'the satisfaction of the one chosen lies for me in the fact that it had to be worked on and did not involve chance or "aesthetic trial and error" at every level, nor did it carry with it some notion of finite ideal order'.[53]

The paintings created by Hill in the first half of the 1950s see a transition from collage and an 'interest in juxtaposition and in employing elements that are virtually *found objects* and the *ready-made* element' to the constructions that develop mathematical themes.[54] The paintings that mark this transition result from an intuitive, empirical method that plays with ideas of asymmetrical balance and modular structure. Writing in 1959, Hill was still stressing the empirical character of his method:

> I work empirically in what could be termed a sphere of restricted improvisations. I am interested in the possibilities of the simplest form of spatial determination in conjunction with a visually comprehensible thematic all within the particular limitation of threshold and dimension relevant to the production of a plastic experience for contemplation.[55]

As part of the aim to present 'plastic experience[s] for contemplation', Hill's paintings operate, playfully, through a combination of material surface and the pictorial. *Orthogonal/Diagonal Composition* is an exception in terms of its structural regularity. Hill's later paintings typically return to a less stable

structure, an example being another of the three works that have the title *Painting 55–56* (fig.11). Compositionally, this is a work of extreme economy. Three black lines (one vertical, two horizontal) frame four white regions. An implication of this composition is that it presents a section of a regularly spaced ladder of squares. However, the work plays games with the perception of these squares. The central white region to the right of the vertical line is, itself, a square. The white region above it is not a complete square, but becomes one with the addition of the width of the horizontal black line at its bottom edge. In this sense, a second, offset or displaced square is present in the composition. Put more simply, the painting presents itself for multiple, non-linear readings. One understanding of the configuration gives way to another before folding back on itself. Crucially, what is read is the relationships of elements within the painting, its syntactics; the painting does not refer to anything but itself. Hill is not producing representations of a subject. Object and subject are one in these paintings.
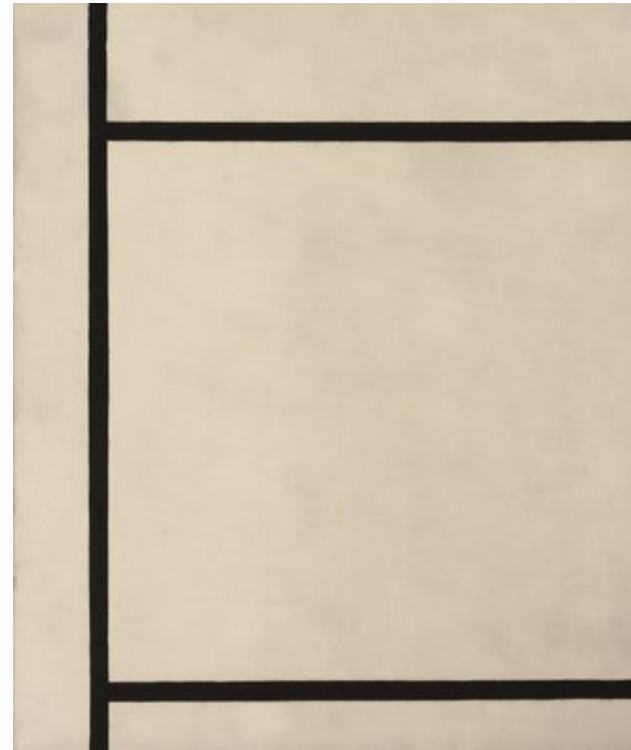
Fig.11
Anthony Hill
Painting 55–56 1956
Private collection
© Anthony Hill
Photo © Sam Gathercole

Semantics

The aim of this essay is to attend to Hill's paintings, not as autonomous, empirical artefacts, but as works produced within sometimes overlapping, sometimes competing contemporaneous discourses. In Hill's terms, via Morris, this is where the semantics of the works become apparent. In this section, the meanings or potential meanings of the paintings will be considered in relation to a set of wider discourses with which the works directly and indirectly engaged.

Writing with particular reference to literature, but in a way that can be extended to painting, the French theorist Michel Foucault stated that a work's 'internal configuration' – its 'autonomous form' (or its syntactics) – has to be understood on a semantic level as being 'a node within a network'.[56] No single statement can or should be separated from the context that made it necessary, or at least provided the occasion on which it was pronounced; it cannot be severed from the discourse that it joined. The idea of discourse is thus as much one of the relationships between things – the various frameworks that hold them – as it is of the things themselves.

Hill's employment of Morris's semiotic terms signals his own conscious participation in the wider discourses of his moment, and signals something of his intent in locating his paintings in relation to those discourses. As will be argued, on the one hand Hill was determinedly resisting, if not directly opposing, British art discourse in the 1950s; on the other hand, he was aligning his work with other discourses, such as that of architecture. Rather than joining the dominant art discourse, then, Hill's gesture should be seen as sitting to one side of – and aimed with hostility at – that discourse's emphasis on individualistic expression. As Foucault pointed out, the unity of any given discourse is not based on any secure, singular object, but on 'the interplay of the rules that make possible the appearance of objects during a given period of time'.[57] Foucault advises us to avoid thinking of principles of singularity, and to view discourse as not only being concerned with statements that endorse or agree. Rather, discourse is also capable of 'arousing opposed strategies, of giving way to irreconcilable interests, of making it possible, with a

particular set of concepts, to play different games'.[58] Competing statements can therefore be made within 'a field of strategic possibilities'.

Reflecting on his career, Hill noted that it took 'a few years to decide what *kind* of modern art to do'.[59] 'By 1954,' he continued, 'I held very strong views and these were for me then a kind of "assault kit" … doing battle against delusions which at the time were dogmatically rejected by only a minority'.[60] In 1954 Hill condemned 'the subjectivist limbo in which the greater part of art is today submerged'.[61] Seeking to locate and define his practice through a series of remarks on what it was not, he insisted that his works 'do not reflect the current trends in "modern art" – they do not resemble objects that have been dug up or the work of the insane or children or primitive art', and are not summoned from 'random activity, chance or the subconscious'.[62]

For Hill, the British artistic inclination towards subjectivity and its tendency to idealise nature, as well as the timelessness associated with this idealisation, were characteristics to be resisted and opposed. Even in relation to the local discourses that engaged with modernism and movements such as constructivism, Hill objected to what he perceived to be the assimilation of such subjects within the terms of a romanticist sensibility. For example, Hill described the English critic Herbert Read's 1952 account of the work of contemporary sculptors Naum Gabo and Antoine Pevsner as 'Romantic interpretation'.[63] Read wrote that the 'machine is the universal and coercive symbol of our age' – a statement with which Hill would not have taken issue.[64] But what Hill was determined to resist was the machine's abstraction to a symbolic form. Writing on the 'symbolism' of the 'Constructivist Realists', Gabo and Pevsner, Hill is clear that the 'symbolism derives from two sources, one, anthropomorphic, a sort of totemism, and secondly, a worship for machinery and scientific objects'.[65] Thus, when Read writes that art 'accepts the universal manifold which science investigates and reveals, but reduces it to the concreteness of a plastic symbol', Hill would have taken exception.[66] Instead of reducing from a 'universal manifold', Hill worked, from scratch, with concrete pictorial components, towards a universal statement. For him, art's main function was to conduct formal research of equal

status to any other seemingly more functional activity. Hill, like Read, stressed links between art and science and technology, but these links were on the level of exchange rather than the symbolic conversion of one language into another. 'Concrete art,' Hill wrote in 1952, 'will always draw on science since science is the only universal language of value and art to be of value should utilise universals.'[67] Furthermore, so as to distinguish one idea of art from another, Hill responded to Read's description of 'the creative construction' as being 'the poetry of space, the poetry of time, of universal harmony, of physical unity',[68] with a description of his own work as 'a kind of prose'.[69]

Not entirely removed from Read's position, but more in line with the bucolic 'nature-romanticism' that the critic Lawrence Alloway saw as prevailing in Britain in the 1950s, the St Ives-based abstract painter Patrick Heron questioned the validity of constructivism.[70] For Heron, constructivist art was merely 'a futile if noble attempt to suppress a whole universe of legitimate pictorial ingredients', from which one can only hope to learn 'that form, unpermeated by its opposite, which is poetry, is meaningless'.[71] In 1953 Heron demonstrated his own preference for his contemporary William Scott's paintings over those of Piet Mondrian (whose name could easily be replaced by Hill's in what follows):

> A painting in black and white by Mondrian is a sign which may be read: the excitement is in the meaning and the meaning is beyond the painting which remains neutral, as an object; the mere passive vehicle of an idea. A painting in black and white by William Scott (superficially, the rectilinear structure is not far removed from a Mondrian) is not a map or a graph or statement of any values beyond itself: it is not a means of communicating to us something other than itself; it is not, like a Mondrian, an essay on form or proportion. It is a living entity; utterly organic, and therefore unique. It is itself a concrete sensuous fact, involving paint.[72]

Although Heron foregrounded the concrete credentials of Scott's work (see, for instance, his *Figure into Landscape* 1954; fig.12), Hill's concrete was determinedly different (see *Painting 55–56* 1956; fig.13). Scott's paintings may have laid claim to a concrete particularity, but

Hill's paintings present what Alloway described as 'an aesthetic of the typical' that 'replaces the uniqueness of the work of art'.[73]

Fig.12
William Scott
Figure into Landscape 1954

There is a sense emerging of Hill self-consciously setting himself outside the limits of British post-war art discourse. To overcome these local limitations, Hill looked to develop international networks. In 1950 he started establishing contact with artists such as Kupka, Georges Vantongerloo and Sonia Delaunay; in 1951 he began corresponding with Marcel Duchamp and Max Bill, and in 1952 with Charles Biederman. Closer to home, Hill joined with Adrian Heath, Kenneth Martin, Mary Martin and Victor Pasmore as part of the informally constituted constructionist group.[74] Following Biederman's lead, the group used the term 'constructionist' rather than 'constructivist' so as to declare a connection with historical constructivism while also claiming a particular contemporary identity (which, for Biederman, combined Dutch De Stijl principles with those of the Eastern European constructivists). While Hill painted until 1956, others in the group – the Martins and Pasmore – moved more
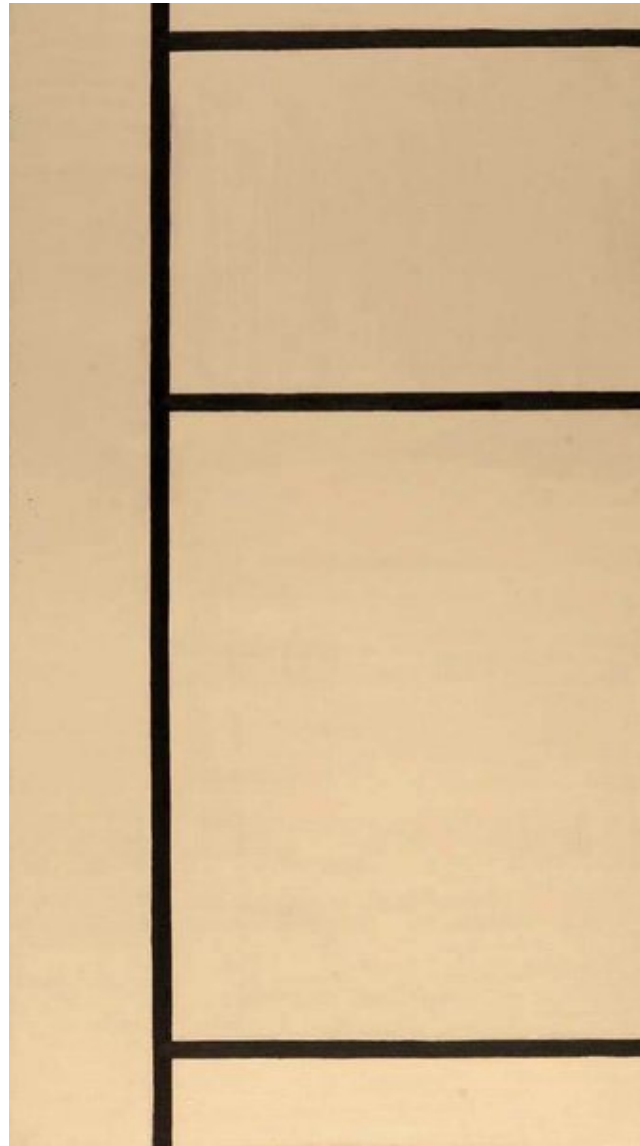
Fig.13
Anthony Hill

swiftly into construction, producing reliefs, sculptures and mobiles. For Alloway, the constructionists were 'motivated, at least in part, by a desire to revive and continue the principles of the international movement which had disappeared under the foliage and chiaroscuro of the romantics'.[75] For Kenneth Martin, writing in 1952:

Painting 55–56 1956
Southampton City Art Gallery, Southampton
© Anthony Hill
Photo © Southampton City Art Gallery

> The Constructionist does not express the old individualist humanism, which is now as distorted as the objects in modernist works. Concepts of the space around man, of the nature of man, of the relation of man to society, develop towards a new humanism. With this movement the new artist is associated.[76]

The depersonalised, 'typical' aesthetic of Hill's paintings chimes with such statements. The constructionists stood apart from the dominant discourses of British art, but in relation to architecture, an accord was sought.

If British art engaged in a discourse that privileged subjectivity and the individual, then British architecture of the period was, on some scale, beginning to engage in a discourse that spoke of objectivity and a depersonalised materiality. One 1959 survey of modern architecture in post-war Britain describes an urgent challenge and opportunity, occasioned by the new priorities of the Welfare State, 'to demonstrate architecture as a public service'.[77] Particular significance was not to be sought or found in the 'individual building designed by the individual architect so much as in the whole material environment – in the *types* of structure and equipment evolved and the incidence of those types; in the relationships of building to building, building to street, space to space'.[78] Hill recognised as early as 1953 that architecture and design were responding 'to the needs of mechanised civilisation', and as such were quickly moving into 'those positions of authority and importance previously occupied by the so-called "fine arts"'.[79] As it was, art was becoming

detached; its assumed function was now one of reminding and reassuring the public of its humanity within an increasingly functional environment. For Hill, this represented a sentimental misunderstanding of both art and architecture.

Hill's sense of the connection between his own work and architecture was simultaneously one of alignment and strategic distance. Coincident with his abandonment of paint in favour of construction in 1956, when the connections between constructionist art and architecture were being foregrounded (for example, in the exhibition *This is Tomorrow* at the Whitechapel Art Gallery, London), Hill chose to qualify the relationship in his own case. It was a subject on which he suggested 'there is less to be said than might be expected'.[80] In the period 1952–6, however, Hill was more inclined to positively articulate these connections, although it should be noted that there is no evidence of Hill directly collaborating with architects, or attempting to do so, unlike others in the constructionist group – Pasmore and the Martins in particular. In the book *Nine Abstract Artists*, for example, Hill stated that he was 'particularly interested in the issue of synthesis, plastic art and architecture'.[81] Indeed, such a pursuit demonstrated how plastic art was 'able to contribute positively towards the shaping of the spiritual and material outlook of our modern civilisation'.[82]

Architectural discourse in Britain in the early 1950s comprised a range of competing voices, each laying claim to the 'modern' and recommending theirs as a legitimate response to the unprecedented need for new building as part of post-war reconstruction. The Swiss concrete artist and designer Max Bill joined the debate in the November 1955 issue of *Architectural Design*. Bill's article 'The Beginning of a New Epoch in Architecture' notes that the avant-garde was now in a position to deliver the promise of the modern movement, but that this was being undermined – in architecture, just as it was in art – by a stubbornly persistent and seemingly irresistible 'drive for self-expression'.[83] Bill argued that the urgent challenge of post-war reconstruction should focus architects' attention, and that 'the present has seemingly little to do with architecture as an art'. Along similar lines, in 1956 Hill wrote that a utopian take on the synthesis of art and architecture that was

derived from a more theoretical than practical interwar model might 'satisfy a mind determined to be revolutionary but avoid the responsibility of creative thought when it is most needed'.[84]

In post-war Britain, the Hertfordshire schools – the first fully modular, prefabricated project on any scale in Britain – stood for a particular set of values, whether these were understood as architectural or not. Maxwell Fry, the architect and veteran of the interwar modern movement, suggested that the Hertfordshire schools project 'carried with it the seeds of wide development', but that this had been at the 'expense of architectural rhythm and solidity'.[85] In 1952 two young architects, Richard Llewelyn Davies and John Weeks, published the first evaluation of the Hertfordshire schools project as architecture. In their article, Llewelyn Davies and Weeks celebrate the 'simple and apparently obvious' buildings.[86] They acknowledge that the schools were such that 'proportions seem almost accidental, spaces and planes are divided in the most elementary manner', and that 'most of the normal elements of architecture are missing'.[87] Far from being a problem, however, these were seen as the very grounds for interest and potential, and there are parallels with what Hill was exploring through painting. A work such as *Orthogonal/Diagonal Composition* is an 'elementary' organisation in which the 'normal elements' of painting are absent, but just how interchangeable discussion of this art and the new architecture was does require some unpacking.

The connection between Hill and Llewelyn Davies and Weeks is not arbitrarily made: as well as being a pioneer of post-war hospital design, Weeks in particular was closely linked with the constructionist group of which Hill was a part.[88] An early manifestation of this group's ideas was a small publication, *Broadsheet No.1: Devoted to Abstract Art*, that includes texts by both Hill ('Mobiles and Alexander Calder') and Weeks ('Mondrian and Mies van der Rohe'). In his short article, Weeks considers Mondrian's approach as an example for modern architecture; an approach in which 'it is fundamental that the value of relationships between neutral forms is fully realised'.[89] Neutral, non-allusive forms were also important for Hill: 'The challenge of the world today,' he wrote in 1956, 'offers to both

art and architecture the choice between phantasy, and the reality of a more precise aesthetic'.[90] It was in relation to architectural discourse, then, that Hill's art resonated. It was also largely in relation to that discourse that Hill joined others in waging his 'battle against delusions', and where he found others were seeking a 'more precise aesthetic'.[91]

Two discourses emerged in post-war British architecture: there was the 'new humanism' that Kenneth Martin had aligned with constructionism, and the more ill-mannered 'new brutalism'. Hill did not directly participate in either discourse, but they set terms among which his work can be interestingly located, and out of which his distinct position becomes apparent. Hill was the youngest artist associated with the constructionist group (he was more than twenty years younger than the Martins and Pasmore), and he presented himself as more uncompromising and agitational than the other constructionists.

A defining voice of new brutalism was a young critic called Reyner Banham. In December 1955 Banham published an article in *Architectural Review* that registered a set of brutalist characteristics that were apparent across a range of cultural practices, particularly art and architecture. In the article, 'Formal legibility', 'clear exhibition of structure' and 'valuation of materials for their inherent qualities "as found"' are provisionally stated as the identifying qualities of the new work.[92] While these characteristics might easily have been sought and found in the Hertfordshire schools, Banham was more excited by a new school in Norfolk: Smithdon High School in Hunstanton, designed by Alison and Peter Smithson in 1951 and completed in 1954. 'In the last resort,' Banham wrote with particular reference to Smithdon High School, 'what characterises the New Brutalism in architecture as in painting is precisely its brutality, its *je-m'en-foutisme* ['I don't care' attitude], its bloody mindedness.'[93] In Banham's brutalism, there is little regard for function being a primary driver, as it was, say, in the Hertfordshire schools; attitude and posture are paramount, as is an engaging and expressive image. With this in mind, Banham returns to, and amends, his three characteristic qualities of brutalism, so as to replace 'formality as a basic quality' with 'Memorability as an Image'.[94]

Fig.14
Reyner Banham, 'The New Brutalism', *Architectural Review*, December 1955, p.359
© *Architectural Review*

Banham illustrated his article with images of artworks by Jackson Pollock, Alberto Burri, Magda Cordell, Nigel Henderson and Eduardo Paolozzi alongside the Smithsons'

architecture (fig.14). It is significant here that none of the artwork images nor their captions link to Hill's work, however much Banham's initial list of brutalist characteristics might apply to Hill's paintings. Indeed, Banham had little interest in the 'Simple-Simon geometrics' that he reported finding in the *Artist versus Machine* exhibition at the Building Centre in London in 1954, in which Hill had participated.[95] While raw materials 'as found', as well as elemental form, were central to the brutalists' method and aesthetics, as they were to Hill's, brutalism's privileging of expression and its tendency to find authenticity in the timeless sets it apart from Hill's concretism. Banham's brutalism lurches towards the picturesque in its exclusion of the formal, its visual memorability, its indulgence of distressed surface and in the persistence and prevalence of something like 'nature' over the technological.

The semantics of Hill's paintings have been discussed here as emerging from the works' relationship with surrounding discourses. There are aspects of Hill's practice in the early 1950s that locate him within that art historical moment and can be seen to associate his work with others around him. There is a formal commitment and elemental structure that is characteristic of constructionism. The same qualities link his paintings of the period with, for example, the architectural discourse around the Hertfordshire schools. There is, in addition, a bad-mannered, couldn't-give-a-damn attitude that links the same work by Hill with the brutalism of buildings like Smithdon High School. In his paintings there are, simultaneously, standardised, silent images that modestly take their place as neutral elements within their immediate environment, and a more aggressive refusal to compromise on the rigour of critique to fit the limits of acceptable (or even comprehensible) discourse.

Pragmatics

This section is concerned with the pragmatics of Anthony Hill's paintings: in his words, 'the relation of the syntactic and semantic thematic issues to the integral problem of the plastic-environment realm (the total visual domain)'.[96] It starts with a discussion of the

paintings' engagement of the viewer, and goes on to consider the paintings in the circumstances and spaces in which they were encountered, such as public exhibitions. As has been noted, Hill's paintings do not function as signs that draw something into the field of signification. Rather, it is appropriate to think of them as signs that point outwards in such a way as to actively engage, if not activate, their environment, and to intervene upon the cultural discourse that pervades that environment.

In 1968 Hill edited a collection of writings entitled *DATA: Directions in Art, Theory and Aesthetics.*[97] The book included material prepared by 'artists and other specialists' from the fields of 'philosophy, mathematics, physics, engineering, sociology and urbanism'.[98] As such, Hill was engaging a range of disciplines, each with its own set of individual and interrelated discourses. The project, coordinated by Hill, looked to galvanise a new, transdisciplinary discourse. Its implicit aim was to identify and locate particular perspectives in search of a wider, coherent whole. Hill's own contribution to *DATA* again directly discusses Charles Morris's 'terminology of semiotics',[99] but it is the contribution of theoretical physicist David Bohm on 'the relationships of science and art' that is of particular interest here in relation to Hill's work, in particular his concrete paintings.[100] Bohm's essay for *DATA* reiterates some of what has been discussed regarding the syntactics and semantics of Hill's paintings, and it also pushes us towards the paintings' pragmatics.

Bohm reflects on the relationship between art, science and religion. He writes of the harmonious totality that art, science and religion shaped in 'the earliest days'; a totality that productively assimilated external (physical) and internal (psychological) knowledge.[101] He also reflects on the subsequent divergence of these fields to the extent that, in 'modern times', 'the functions of science, art, and religion have become fragmented and confused'.[102] They each developed conflicting perspectives, rather than articulating a coherent understanding of reality. In addition, ways of thinking – rather than being expanded by art, science and religion – came, in time, to be narrowly and habitually fixed within each of these separate fields. Bohm argues that art and science lost touch with the confrontation of facts and, instead, were predominantly working towards presenting 'a

false air of reality and concreteness'.[103] In Bohm's analysis, the consequences of all of this were socially destabilising.

Bohm goes on to note evidence of a common and potentially unifying shift in some areas of art and science. This was a shift from imitative representation to paradigmatic production. What he meant by 'paradigmatic' in this instance was the development of internally generated processes that 'reveal their essential order and structure in a simplified but "typical" way'.[104] Bohm's claim was that in place of a dependence on observation from which art and science abstracts, new generative procedures were emerging. In relation to paradigmatic developments in mathematics, he discusses an 'axiomatic approach' in which mathematical elements are not 'to be regarded as *basically* symbolic of something else':

> Rather, they were *initially* given no meanings in themselves, all their meanings being in their relationships to other terms in a theory, these relationships having to be expressed as purely abstract *mathematical operations*. In this way they became elements of *structures of ideas*.[105]

This is linked with developments in science and with the development of constructionist art. According to Bohm, constructionist art starts 'from certain basic structural elements, which have in *themselves* no meaning, but which participate in forming a structure created by the artist, and which in this way take on all their meaning.'[106] In paradigmatic modes of disciplinary practice, Bohm finds subtle parallels between art and science that represent a modern convergence and point to productive ways forward:

> [A] great deal of the fragmentation of existence has always derived from attachment to habitual modes of thinking, perceiving, and action, which are no longer appropriate, and which tend to come into conflict with the structure of fact as it is. Anything which can teach man what it means to see this fact afresh, creatively, even in some restricted set of fields, such as the sciences, art, and mathematics, could also help in changing man's general approach to life in a corresponding way.[107]

To extend Bohm's argument, not only should the elements organised within Hill's paintings be considered as paradigmatic and contingent, but the works' contingency can be extended into the environments in which they were exhibited and the spaces in which they were published; into relationships with other artworks that they shared such spaces with; and into the interactions occasioned by spectators' encounters with the paintings.

In 1970 Bohm published an essay entitled 'On Communication' that usefully illuminates these levels of contingency, in particular how a (concrete) painting might initiate something of a dialogue with the spectator. Bohm distinguishes 'communication' and 'dialogue'. He frames communication as an act of 'making something common'; as the conveyance of 'information or knowledge from one person to another in as accurate a way as possible'.[108] By contrast, 'in a dialogue, each person does not attempt to *make common* certain ideas or items of information that are already known … Rather, it may be said that the two people are making something in common, i.e., creating something new together.'[109] Running through Bohm's thinking is an idea of synthesis, and in this idea can be seen an aspect of Hill's work that moves beyond the antithetical character of the paintings. Rather than being limited to an opposing position in relation to contemporaneous art discourse, Hill's paintings shape their own productive terms.

In the 1950s Hill demonstrated an unusual interest in context and spectatorship. In 1959 he summarised something approaching the dialogical character of his work:

> The work is something conceived, made and finally perceived.
> The perception of the work is the object of its existence.
> That which is perceived is *what the work does* which in turn becomes sensations for the beholder.[110]

The concrete paintings produced by Hill present material statements. To revisit some of Hill's words quoted earlier, 'there are these things and you can have them like this'.[111] In encountering one of Hill's paintings, the beholder is invited to regard the constructed image as itself complete, but also to realise the importance of that encounter in real time

and space. The beholder is not invited to reconfigure the work, but is invited to view it for what it is (and nothing more) and as an independent form: the independence here extending to the work's independence from its producer. To fully register the significance of such a concrete gesture, it is worth considering how alternative gestures might be understood or how they might be received. If an artist represents reality, then they might say, 'There are these things, I found them like this.' If an artist abstracts reality, then they might say, 'There are these things, I found them something like this.' In both cases, the viewer is invited to see how the artist has seen, and – as valuable as this can be – it is an invitation to receive the sensations of another. As such, the artist's gesture is limited to reporting their experience; to communicating in the restrictive sense outlined by Bohm. By contrast, concrete art does not privilege the originating individual, nor does it impose a past tense on what is presented. Instead, concrete art opens a dialogue in the present, and in the expansive sense outlined by Bohm.

It has already been noted that Hill's paintings utilise different paints and variegated surfaces that invite kinetic rather than static viewing; an active rather than passive reception. The constructions that Hill subsequently produced pursued this further. In his catalogue introduction to Hill's exhibition at London's Institute of Contemporary Arts in 1958, Alloway wrote that Hill's constructed reliefs were 'as responsive to visual change as a mirror'.[112] Thus, the works present objective statements that take their place within a contingent space, and stimulate a particular form of active viewing. John Ernest, a constructionist artist with whom Hill regularly collaborated, most notably for the *This is Tomorrow* exhibition, wrote that constructivism 'demands from the spectator that [they] discover new modes of conceptual activity to construct [their] experience; that [they] perform an act in itself creative.'[113] As well as relating to the physical encounter with the paintings, the pragmatics of the works relate to the dynamic of the exhibitions in which they were shown. That Hill's works required a new mode of attention, one through which they would stimulate something approaching the original unified role of art and science, points to a productive intervention performed by Hill through his paintings. Public

exhibition supplied a platform for the demonstration of the work's potential, and also provided sites that Hill occupied with increasing hostility.

Hill was quick to engage in the public space of exhibitions. In December 1950, while still a student at London's Central School, he participated in the *Aspects of British Art* exhibition that marked the opening of the Institute of Contemporary Arts's new premises in Dover Street. In August 1951, again in London, he followed this up by organising the survey exhibition *British Abstract Art* at Gimpel Fils gallery, which assembled the work of fifty-five painters and sculptors. The exhibition indicates something of the breadth and range of Hill's interests and contacts. In the context of some of the wider themes of this essay, however, the *British Abstract Art* exhibition might be seen as an early attempt to map a field that Hill's own work would come to occupy antagonistically. Due to an accident of the alphabet, the catalogue lists Hill's work *Intervals* 1951 (collection of the artist) between one by Barbara Hepworth, listed as *Recumbent Form with Red*, and another by Roger Hilton, listed as *Painting*.[114] The concrete art that Hill developed would emerge as distinct from the abstract art produced by these two artists.
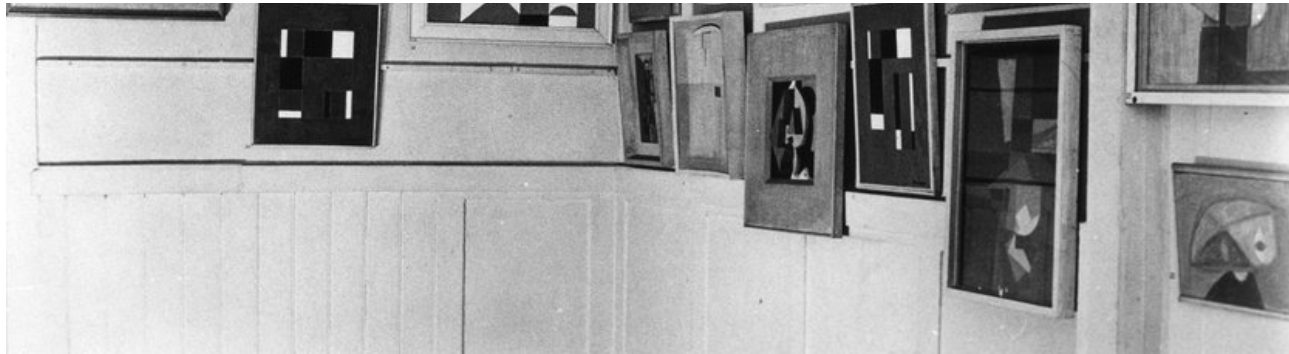
Fig.15
Installation view showing Anthony Hill's 1951 painted version of his collage *Jeux* (rightmost work on the back wall) in the exhibition *Abstract Paintings, Sculptures, Mobiles* at the Artists International Association Gallery, London, 22 May – 11 June 1951
© Estate of Kenneth and Mary Martin

Hill's development towards producing his radical, bold paintings can be sensed in early statements and works, but it is also apparent that he was, at least initially, making work that fitted in with the abstract art being produced in Britain at the time. Much of his activity – including organising the Gimpel Fils exhibition – was directed towards announcing himself and joining a British art scene. In the exhibition *Abstract Paintings, Sculptures, Mobiles*, staged at the Artists International Association Gallery, London in May and June 1951 (fig.15), Hill showed a painted version of the aforementioned *Jeux* collage, made the

same year (collection of the artist). It hung comfortably with a range of works including paintings by Pasmore, Heath, Hilton, Terry Frost and Ben Nicholson. Many of the works shared a common debt to cubist collage in the optical and material play of their surfaces. Hill's painting did not deviate from or challenge those of the artists with whom he shared wall space. In addition, the works all, already, demonstrated what Lawrence Alloway, writing in 1957 with

Fig.16
Anthony Hill's contribution to *Broadsheet No.1: Devoted to Abstract Art*, London 1951, unpaginated, illustrating (clockwise from top left): Hill's *Jeux* (here titled *Abstract*), Adrian Heath's *Blue Spiral* (here titled *Abstract*) and Terry Frost's *Walk Along the Quay*
© Lund Humphries

particular reference to the paintings of Heath and Frost, described as a tendency to 'soften geometry by personal handling or corrode it with atmospheric colour'.[115] Hill's work may have had a sharper, cleaner geometry than some in the exhibition, but nevertheless it did not assert a difference in any pronounced way. Indeed, in *Broadsheet No.1: Devoted to Abstract Art*, which was published in conjunction with the exhibition, Hill's text 'Mobiles and Alexander Calder' was illustrated with black and white photographs of the painted version of *Jeux* (then titled *Abstract*) along with Heath's *Blue Spiral* 1951 (then also titled *Abstract*; estate of Adrian Heath) and Frost's *Walk Along the Quay* 1950 (private collection), and without any apparent conflict between the works (fig.16).
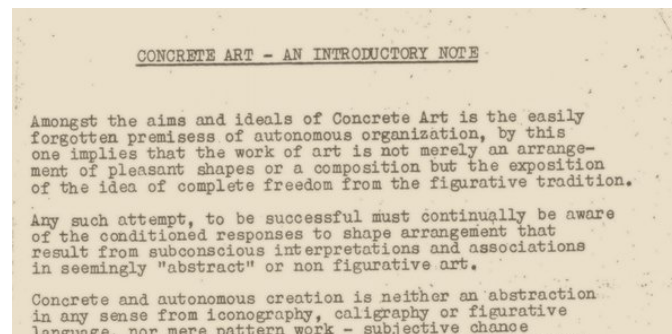
Fig.17

Installation view of Anthony Hill's *Painting, Red and White* (upper left), Kenneth Martin's *Reflector Mobile* (upper right), Ben Nicholson's *October* 1951 (right) and Barbara Hepworth's *Head* (lower right), in the second group exhibition at Adrian Heath's studio, 22 Fitzroy Street, London, 11–14 July 1952

© Estate of Adrian Heath

CONCRETE ART - AN INTRODUCTORY NOTE

Amongst the aims and ideals of Concrete Art is the easily forgotten premisess of autonomous organization, by this one implies that the work of art is not merely an arrangement of pleasant shapes or a composition but the exposition of the idea of complete freedom from the figurative tradition.

Any such attempt, to be successful must continually be aware of the conditioned responses to shape arrangement that result from subconscious interpretations and associations in seemingly "abstract" or non figurative art.

Concrete and autonomous creation is neither an abstraction in any sense from iconography, caligraphy or figurative language. nor mere pattern work - subjective chance

Fig.18
Anthony Hill's contribution to *Broadsheet No.2*, London 1952, unpaginated
© Anthony Hill
Courtesy of Anthony Hill, care of Mark Thomson

A year later such concord was less apparent, and Hill was producing a more distinct – and, within the manners of the moment, more aggressive – type of work, as seen in *Painting, Red and White*. In July 1952, *Painting, Red and White* was included in the second of three independent exhibitions staged at Heath's studio in Fitzroy Street in London. It hung on the same wall as the painting *October 1951* 1951 by Ben Nicholson. Nicholson's characteristically folksy Cornish abstraction and Hill's razor-sharp configuration spoke different languages. As can be seen in an image of the installation (fig.17), Hill's painting

and one of Kenneth Martin's many *Reflector Mobile* works appear above a horizontal line, while Nicholson's painting and Barbara Hepworth's *Head* sit below it.[116] Furthermore, as if to confirm this cultural separation, the unillustrated *Broadsheet No.2* – published on the occasion of this exhibition – made fewer efforts than the earlier edition to reconcile diverse practices. Hill's contributions to the two editions of *Broadsheet* signal his withdrawal from convivial conversation with dominant modes of British abstract art, and the taking of a more polemical position. In his text for *Broadsheet No.2*, entitled 'Concrete Art – An Introductory Note', Hill appears intent upon stating difference and defining his position by establishing what it is not (fig.18).[117]

What is becoming clear is that by 1952 Hill was interested in depersonalising and concretising art practice, and, in doing so, in embracing the contemporary on a social and a broader cultural level than much post-war British painting and sculpture, which seemed intent upon stressing the personal and claiming a more human expression of form and content. In 1951 Hill had written that only abstract art 'offers a means of expression completely in harmony with the techniques of our civilisation'.[118] In accordance with this, he was making work that demonstrated a potential for mass production in both the processes of its making and in its titling. In 1952 Hill may not have been producing much work that has survived, but he was, records indicate, rethinking existing works. In that year, for example, the painted version of *Jeux* was presented in one exhibition as *Study for a Work in Progress*, and in another as *Prototype for Commercial Reproduction*.[119] Between 1953 and 1956, Hill worked exclusively in mechanically reproducible black and white, and titled all works descriptively.[120] As noted earlier, Hill distinguished collage paintings from constructed paintings. In addition to the already discussed terms on which this distinction was drawn, Hill suggested that constructed paintings presented 'the possibility of making larger versions'.[121] Hill's notes indicate that he intended to oversee the production of a screenprinted enamel on metal version of *Painting, Red and White*, although this was not pursued.[122]
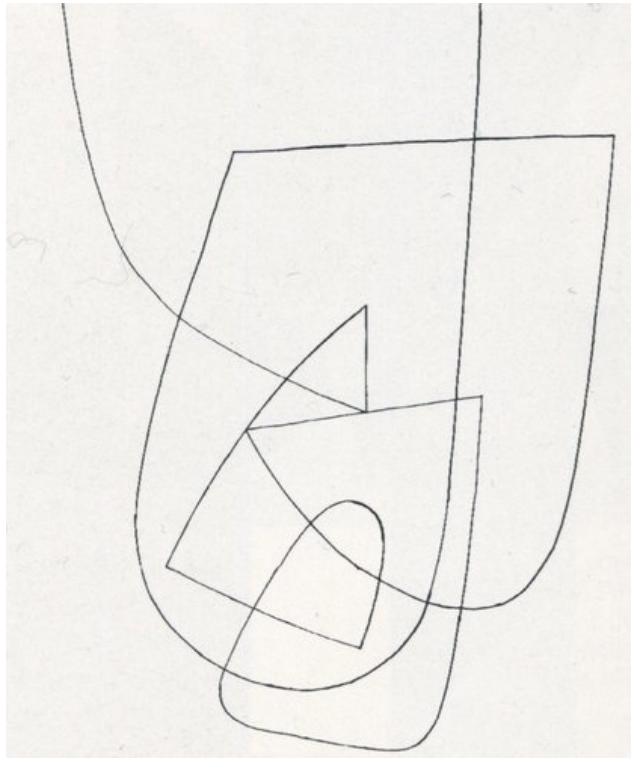
Fig.19
Anthony Hill
Loop-line 1953
Collection of the artist
© Anthony Hill
Courtesy of Anthony Hill, care of Mark
Thomson

Fig.20
Anthony Hill
Loop-line 1953
Collection of the artist
© Anthony Hill
Courtesy of Anthony Hill, care of Mark
Thomson

In 1953 Hill produced several versions of a work called *Loop-line*: one of these was a photographically reproduced line drawing (fig.19); in another, Hill inked in alternate areas in black (fig.20). The line-only version appears to owe something to the work of Paul Klee (1879–1940), with the apparently free course of a single line being traced. Klee's work excited much interest among British artists in the early 1950s,[123] with Theo Crosby, the

designer and editor of *Architectural Design* magazine, writing in 1953 that Klee's work pointed 'to a whole world of new forms and subtle meanings' that positively superseded 'the precision of Mondrian' and 'the imposed simplicity of the Modern Movement'.[124] Perhaps realising this, or perhaps agitated that something had been pointed out that he did not wish to endorse in his own practice, Hill quickly moved to re-impose simplicity. Later in the same year he worked on the more severe black and white, double-square composition *Catenary Rhythms* (fig.4). Like the second version of *Loop-line*, *Catenary Rhythms* played with a linear structure rendered positive and negative by alternate filling-in with black, but in *Catenary Rhythms* the linear framework obeyed mathematical and geometrical principles including root rectangles and catenary curves.[125] Perhaps looking more to the example of the Hungarian constructivist László Moholy-Nagy (1895–1946) than to that of Klee, Hill hoped to have *Catenary Rhythms* industrially manufactured in enamel on steel, but this had to be abandoned due to costs, and Hill produced the work himself in Ripolin gloss paint applied over a dye-line print from a drawing executed by structural engineer Frank Newby. Any residual nod to Klee was stilled, and as one redundancy was announced, a new function was asserted.

Catenary Rhythms formed Hill's contribution to *Artist versus Machine*, the exhibition at the Building Centre in London in May 1954. This was organised by the constructionists Pasmore, Kenneth Martin and Robert Adams, and the architect John Weeks. In spite of its title, the exhibition attempted to demonstrate connections, rather than oppositions, between the artist and the machine. A group statement written to accompany the exhibition outlines the aims and ambitions of the display, and outlines a clear choice that artists now needed to make in light of the centrality of the machine both socially and culturally. The choice was one of either reasserting 'the primitive qualities of handicraft' or embracing the 'particular qualities of machine craft'.[126] The latter was foregrounded in the exhibition in three ways: through the machine's potential as 'an actual creative factor' (as well as its use as 'a means of reproduction'); through its being 'the most effective medium of modern expression'; and through its place in 'the new architecture'.[127] Even among the artists gathered in this exhibition, each of whom embraced these themes, Hill can be

regarded as among the most advanced in his plan to utilise 'machine techniques'.[128] Indeed, as has been noted, Alloway identified Hill as being particularly 'aware of the challenge of 20th century serial production, which replaces the uniqueness of the work of art with an aesthetic of the typical'.[129]

With the publication in 1954 of *Nine Abstract Artists*, and the exhibition of the same name at the Redfern Gallery in London in January 1955 (in which Hill showed *Painting, Red and White*), a 'constructionist six' consisting of Hill, Adams, Heath, the Martins and Pasmore were joined by Frost, Hilton and William Scott, with whom they had already exhibited on a number of occasions in the early 1950s. Frost, Hilton and Scott represented a different type of abstract artist: their work appears to be the product of freely swinging brushes, whereas the constructionists' appears more machine cut or tool produced, especially in the case of Hill and the Martins. According to Alloway, who wrote the book's introduction, Frost, Hilton and Scott's work could be summed up as 'irrational expression by *malerisch* [painterly] means';[130] they were 'painterly abstractionists who melt, bury, or fracture platonic geometry', and represented a 'free style [in which] the majority of British non-figurative artists, who are not in this book, work'.[131] Alloway makes little effort to conceal his allegiance to constructionism, characterising Hilton (with pejorative implication) as 'an antiquated pilgrim',[132] while approving of Hill's 'dead-pan' surfaces and efforts 'against "nonchalance"'.[133] In Hilton's own statement for the book he supposes that 'few artists really know what they are doing; it is an instinctive, irrational, activity'.[134] Hill, in contrast, writes of 'an aesthetic of objective invention and sensation, distinctly rational and determinist'.[135]

The quality of the black and white reproductions in *Nine Abstract Artists* gives little sense of the worked and distressed surfaces of William Scott's paintings. Instead, if one were to flick casually through the pages, it is possible that his *Figure into Landscape* of 1954 (fig.12) and Hill's *Orthogonal Composition* of 1953–4 (fig.9) could appear to share more in common than not. For Hill, however, much more was at stake than the finer points of

abstract art or of the intuitive freedoms enjoyed by modern painters. Preferring the word 'concrete' to 'abstract', he had written two years earlier that,

> Concrete and autonomous creation is neither an abstraction in any sense from iconography, calligraphy or figurative language, nor mere pattern work – subjective chance organisation, neither is it the idea of extemporising and experimenting until the 'rapport' between the creator and his creation is harmonised and resolved.[136]

He states further that:

> Work resulting from these approaches may have plastic purity and a rationale in keeping with purely non-figurative creation but it will be undermined with latent associations and when the onlooker adds his own interpretations an abyss of subjectivity is encountered such that art is rendered to the level of a [R]orschach test, the work then becomes powerless to express.[137]

Nothing communicates or can communicate in 'an abyss of subjectivity'. Instead, there are only unconnected, disconnected and arbitrary exchanges. Hill rejects those that find cultural consequence or potential in the abyss, and is instead committed to an idea of the modern that has a social consequence and makes little room for individualism:

> I believe in an art of daylight, constructed to utilise our conscious faculties, an art modestly pointing ways towards regeneration and an end to the luxury lie of 'angst' exploitation. An art offering possibilities for deploying the inventive energies in close concord with the fertile potentialities of a rational approach.[138]

It was in December 1955 and January 1956 that Hill produced his four 'last paintings'. A major Mondrian exhibition at the Whitechapel Art Gallery had closed in September 1955, and Hill's works
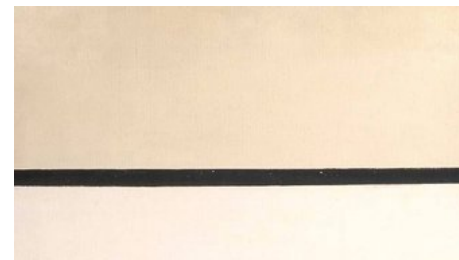
indicate a close affinity with the Dutch painter's neo-plasticism. Three of the last paintings – the ones that are titled *Painting 55–56* – feature three or four orthogonally related black lines organised on a ground that is white or combines a number of whites that fill the planes marked by the lines. One of these works, *Painting 55–56* (fig.21), is arguably the simplest of Hill's last paintings in terms of the organisation of elements. The composition of this work consists of three uniformly thick but unevenly spaced horizontal black lines, with two different off-whites evenly filling the spaces above, below and between them. The one top and two bottom planes are a single off-white, with the remaining (largest) area containing a brighter white. Hill's notes describe the white areas as 'coloured areas' that 'are supposed to suggest that the canvas is bound by bands – as if they continued round the back like a bandage round a limb'.[139] In fact, both the coloured areas and the bands do not

Fig.21
Anthony Hill
Painting 55–56 1955–6
Tate T01907
© Anthony Hill

continue beyond the frontal plane of the stretched canvas, but the language Hill uses here brings drama to a startlingly elemental image. The talk of bandages and binding arguably establishes a metaphor of wounds and 'execution': as Tate's 1974–6 catalogue of
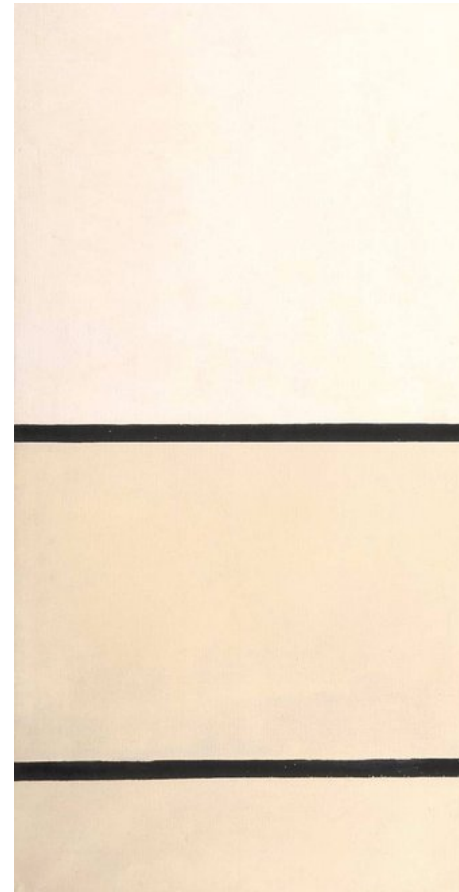
acquisitions described it, 'In December 1955 and January 1956, probably in his Greek Street Studio, Hill executed the last 4 works in which he used paint.'[140] From this point onwards, the executioner concentrated on working with materials in real, non-pictorial space in the form of relief constructions.

The last paintings had no immediate public life – with one exception. In December 1956 Hill participated in the exhibition *Recent Abstract Painting* at the Whitworth Art Gallery in Manchester. He showed three works: *Composition, Light Blue, Dark Blue and Violet* (fig.7; exhibited as *Study for Composition (Homage to Frank Kupka)*), *Orthogonal Composition* 1953–4 (fig.9), and one of the last paintings, *Painting, January* 1956 (fig.22). The work of thirty-eight artists was presented in *Recent Abstract Painting*, and the dominant mode was that of abstract expressionism. Hill showed alongside Europeans such as Alberto Burri, Hans Hartung and Pierre Soulages, and Americans including Sam Francis, Franz Kline, Jackson Pollock and Mark Rothko. In the catalogue introduction, curator Paul A. Chew supplied a broad overview of the history of abstract painting:

The post-war years found the non-figurative artists active and a younger generation eager for this new art form. Like a thing possessed the non-figurative artist literally flung himself into his work. Roughly speaking, the mathematical form and precision of Mondrian and Nicholson gave way to 'abstract expressionism'.[141]

Fig.22
Anthony Hill
Painting, January 1956 1956
Southampton City Art Gallery, Southampton
© Anthony Hill
Photo © Sam Gathercole

An informal, painterly abstraction is discussed at length. No specific mention is made of Hill, and there is no acknowledgment of a more precise, formal abstract art being produced after the Second World War. Significantly, the catalogue shows asterisks next to Hill's and Pasmore's names: both are identified as 'no longer painters', as both 'are now doing constructions'.[142] This qualification would, presumably, have been made at the request of the two artists, and can be read as a parting shot aimed at the discourse of painting.

Afterword: A structuralist art?

Structuralism attends to culturally determined meanings, and addresses conceptual frameworks as forms of mediation through which understanding is established and maintained. Hill engaged with structuralism (of which semiotics is a part) and claimed his work to be structuralist. However, such a claim is complex. In post-war Europe and North America, informal abstract art – summarised by Hill in 1970 as 'the radical anti-geometrical school of abstract painting: action painting, tachisme et al.'[143] – was predominant. For those such as Hill who sought a structuralist potential in abstract art, this gestural branch of abstraction presented a problem. For the anthropologist Claude Lévi-Strauss, for example, abstract art failed on a semantic level. Hill notes that for Lévi-Strauss, 'abstract art is not a language, but a pseudo-language, which cannot achieve

signification'.[144] Abstract art fails, in part, because it is created by the individual, and falls outside of languages and ideas that are held in common. In line with Lévi-Strauss, Hill dismissed the idea that gestural abstract art could carry meaning, but through his work was intent on demonstrating the structuralist potential of a depersonalised concrete art: the mistake, according to Hill, was to consider informal abstract art as the representative of abstract art's structuralist potential, or to conflate the different languages of abstract art. Hill's paintings organise components, and the works, in turn, deliberately occupy a wider structural system.

In Hill's 1970 essay 'A Structuralist Art?', in which, as ever, he pursued a trans-disciplinary theoretical method, the artist speculated on more productive ways of thinking about structuralism and the plastic arts. He quotes the mathematician Alfred North Whitehead, who said 'I suggest that symbolic logic, that is to say the examination of pattern by the use of real variables, will become the foundation of aesthetics'.[145] Hill goes on to quote the semiotician Charles Sanders Peirce: 'Aesthetics is the science of ideas, or that which is objectively admirable without ulterior reason.'[146] What Hill stresses through such references is the necessary presence of 'real variables' (of measurable components) and the 'objectively admirable' as essential elements of a structuralist art. He goes on, again through Peirce, to talk about 'self-control' and 'deliberate conduct',[147] and again he remarks upon Charles Morris's 'extension of Peirce's [structuralist] semiotics', connecting it with 'the general shift towards mathematical thinking in the behavioural sciences'.[148] Hill's assertion is that concrete art can and does achieve signification. For him, concrete art operates independently of – but in relation to – what is held in common, and instead instigates a dialogue mediated by an image.

The paintings discussed in this essay should be regarded as a series of strategic manoeuvres. They have, in no small part, been reflected upon as antithetical works, produced in hostile relation to the discourse of painting. As such, the paintings are negative works, defined primarily by what they are not. However, Charles Morris's syntactic-semantic-pragmatic model also illuminates a positive purpose in Hill's

intervention. As well as signifying opposition, the paintings initiate a synthesis that Hill pursued in his later constructed reliefs, and in this sense, the paintings are positive, propositional works.

Notes

1. Otto Gustaf Carlsund, Theo van Doesburg, Jean Hélion and others, 'The Basis of Concrete Painting' [1930], reproduced in Stephen Bann (ed.), *The Tradition of Constructivism*, London 1974, pp.191–3.

2. Ibid., p.193.

3. Anthony Hill, 'Max Bill: The Search for the Unity of the Plastic Arts in Contemporary Life', *Typographica*, no.7, 1953, pp.22–3.

4. Anthony Hill in Lawrence Alloway, *Nine Abstract Artists: Their Work and Theory*, London 1954, p.27.

5. Anthony Hill, 'Concrete Art – An Introductory Note', *Broadsheet No.2*, July 1952, unpaginated.

6. Alloway, *Nine Abstract Artists* 1954, p.15.

7. Hill 1952, unpaginated.

8. Charles Morris, 'Foundations of the Theory of Signs' [1938], reproduced in Charles Morris, *Writings on the General Theory of Signs*, The Hague 1971, p.48.

9. Ibid.

10. Anthony Hill in *Statements: A Review of British Abstract Art in 1956*, exhibition catalogue, Institute of Contemporary Arts, London 1957, unpaginated.

11. Morris 1971, p.48.

12. Ibid., p.29.

13. Ibid., p.35.

14. Ibid., p.43.

15. Anthony Hill, 'Programme. Paragram. Structure', in Anthony Hill (ed.), *DATA: Directions in Art, Theory and Aesthetics*, London 1968, p.251.

16. Hill in Alloway, *Nine Abstract Artists* 1954, p.27.

17. Ibid.

18. Ibid.

19. Ibid.

20. Anthony Hill, statement in *Anthony Hill / Gillian Wise,* exhibition catalogue, Institute of Contemporary Arts, London 1963, unpaginated.

21. Anthony Hill, 'Some Reflections on Modern Art', *Structure*, 4th series, no.2, 1962, p.48.

22. Ibid.

23. Hill in Alloway, *Nine Abstract Artists* 1954, p.28.

24. See ibid., figs.23 and 24. *Catenary Rhythms* was a work in enamel on dye-line print mounted on board, and measured 1040 x 2080 mm.

25. Toni del Renzio, 'First Principles and Last Hopes', *Typographica*, no.4, 1951, p.20.

26. Hill in Alloway, *Nine Abstract Artists* 1954, p.27.

27. It is in fact possible to reconfigure the red shapes as a square.

28. Anthony Hill, 'Paintings: Notes for a Concise "Specification Catalogue"', February 1957, in a file marked 'A. Hill's notebooks 1950–75', Tate Archive, cat. no.201615 GRIEVE, box 4½.

29. Anthony Hill, undated notes in the file 'A. Hill's notebooks 1950–75', Tate Archive.

30. Frank Kupka, *Four Stories of White and Black,* Paris 1926, reproduced in *Frank Kupka in White and Black*, Liverpool 1998, unpaginated.

31. See, for example, the cataloguing in *Anthony Hill: A Retrospective Exhibition*, exhibition catalogue, Hayward Gallery, London 1983, p.12.

32. Anthony Hill, conversation with the author, 21 August 2008.

33. Anthony Hill in *This is Tomorrow*, exhibition catalogue, Whitechapel Art Gallery, London 1956, unpaginated.

34. Hill 1963, unpaginated.

35. Anthony Hill, statement dated February 1975, in *The Tate Gallery 1974–6: Illustrated Catalogue of Acquisitions,* London 1978, p.109.

36. Carlsund, van Doesburg, Hélion and others 1930, p.193.

37. John Myhill in Hayward Gallery 1983, p.85.

38. Hill 1978, p.110.

39. It should be noted that although Hill published papers in the field of mathematics in the 1960s – specialising in combinatorics and graph theory – he also clearly distinguished this from a number of his different activities and pursuits. In the field of artistic practice, he differentiated the work of 'Anthony Hill' (the constructionist) from that of 'Redo' (his dadaist alter-ego who emerged in 1973). One might further distinguish these from the work of 'Anthony Hill' the mathematician.

40. Anthony Hill, 'Art and Mathematics: A Constructionist View', *Structure*, 3rd series, no.2: 'Art and Mathematics', 1961, p.62.

41. Anthony Hill, 'The Constructionist Idea and Architecture', *Ark: The Journal of the Royal College of Art*, no.18, November 1956, p.29.

42. Hill 1978, p.110.

43. Hill 1963, unpaginated.

44. See, for instance, Anthony Hill, 'The Structural Syndrome in Constructive Art', in Gyorgy Kepes (ed.), *Module, Symmetry, Proportion*, London 1966, pp.162–73.

45. See, for instance, Anthony Hill, 'Art and Mathesis: Mondrian's Structures', *Leonardo*, vol.1, no.3, 1968, pp.233–44, and Anthony Hill, 'A View of Non-Figurative Art and Mathematics and an Analysis of a Structural Relief', *Leonardo*, vol.10, no.1, 1977, pp.7–12.

46. A √2 rectangle is created by starting with a square, measuring the diagonal distance between two of its opposite corners, and then extending the square to form a rectangle whose longer side is the same length as that diagonal. This process is repeated with the diagonal of the √2 rectangle to arrive at a √3 rectangle, and so on. In mathematical terms, a root rectangle is defined as a rectangle in which the ratio of the longer side to the shorter is the square root of a whole number (such as 2 or 3).

47. Anthony Hill, 'Paintings: Notes for a Concise "Specification Catalogue"' 1957.

48. Jay Hambidge, *The Elements of Dynamic Symmetry*, New Haven 1919, and Jay Hambidge, *Dynamic Symmetry in Composition*, New Haven 1923.

49. Hill 1961, p.63. The 'section d'or', also known as the golden ratio or golden section, is a proportional relationship between forms that corresponds to a ratio of approximately 1:1.618. This relationship is found in numerous natural structures and is conventionally regarded as ensuring harmonious composition in art (in relation to which it is sometimes called 'divine proportion'). Hill, though, was dismissive of such formulaic guarantors of harmony, hence his reference to the section d'or as 'number magic'.

50. Hill, 'The Structural Syndrome in Constructive Art' 1966, p.168.

51. Ibid., p.170.

52. Hill produced two half-size studies that relate to *Orthogonal/Diagonal Composition*, with proportionally thicker lines: one painted uniformly with gloss paint, the other painted uniformly with matt paint.

53. Hill, 'The Structural Syndrome in Constructive Art' 1966, p.170.

54. Anthony Hill, 'Raw Matters', in Hayward Gallery 1983, p.81. Emphases in the original.

55. Anthony Hill, 'On Constructions, Nature and Structure', *Structure*, 2nd series, no.1: 'Art and Nature', 1959, p.7.

56. Michel Foucault, *The Archaeology of Knowledge* [1969], trans. by A.M. Sheridan Smith [1972], London 2002, p.25.

57. Ibid., p.36.

58. Ibid., p.40.

59. Anthony Hill, 'Desiderata (1971)', *Studio International*, May 1972, p.204. Emphasis in the original.

60. Ibid.

61. Hill in Alloway, *Nine Abstract Artists* 1954, p.28.

62. Hill, 'The Constructionist Idea and Architecture' 1956, p.29.

63. Anthony Hill, 'Constructivism – The European Phenomenon', *Studio International*, April 1966, p.144.

64. Herbert Read, 'Constructivism: The Art of Naum Gabo and Antoine Pevsner', in Read, *The Philosophy of Modern Art*, London 1952, p.228.

65. Hill, 'The Constructionist Idea and Architecture' 1956, p.28.

66. Read 1952, p.233.

67. Hill 1952, unpaginated.

68. Read 1952, p.233.

69. Hill, 'The Constructionist Idea and Architecture' 1956, p.29.

70. Alloway, *Nine Abstract Artists* 1954, p.16.

71. Patrick Heron, 'The Visual Arts' [January 1948], in Jane Drew and Trevor Dannatt (ed.), *Architects' Year Book 3*, London 1949, p.21.

72. Patrick Heron, 'Space in Painting and Architecture', in Trevor Dannatt (ed.), *Architects' Year Book 5*, London 1953, p.26.

73. Lawrence Alloway, 'Non-Figurative Art in England', *Arti Visive*, January 1954, unpaginated.

74. See Sam Gathercole, 'Art and Construction in Britain in the 1950s', *Art History*, vol.29, no.5, November 2006, pp.887–925.

75. Alloway, *Nine Abstract Artists* 1954, p.3.

76. Kenneth Martin, 'An Art of Environment', *Broadsheet No.2*, July 1952, unpaginated.

77. John Summerson, 'Introduction', in Trevor Dannatt, *Modern Architecture in Britain*, London 1959, p.19. Alongside the establishment of benefits such as a family allowance and health services, the Welfare State called for the building of new housing, hospitals and schools.

78. Ibid., p.27. Emphasis in the original.

79. Hill 1953, p.21.

80. Hill, 'The Constructionist Idea and Architecture' 1956, p.29.

81. Hill in Alloway, *Nine Abstract Artists* 1954, p.27.

82. Ibid., p.28.

83. Max Bill, 'The Beginning of a New Epoch in Architecture', *Architectural Design*, November 1955, pp.335–8.

84. Anthony Hill, letter to Joost Baljeu, February 1956, quoted in Jonneke Jobse, *De Stijl Continued: The Journal 'Structure' (1958–1964): An Artists' Debate*, Rotterdam 2005, p.55.

85. Maxwell Fry, 'Twenty-Five Years of Modern Architecture in England', *Architectural Design*, November 1955, p.340.

86. Richard Llewelyn Davies and John Weeks, 'The Hertfordshire Achievement', *Architectural Review*, June 1952, p.370.

87. Ibid., p.371.

88. See, again, Gathercole 2006.

89. John Weeks, 'Mondrian and Mies van der Rohe', *Broadsheet No.1: Devoted to Abstract Art*, London 1951, unpaginated.

90. Hill in Whitechapel Art Gallery 1956, unpaginated.

91. Hill 1972, p.204.

92. Reyner Banham, 'The New Brutalism', *Architectural Review*, December 1955, p.357.

93. Ibid.

94. Ibid., p.361.

95. Reyner Banham, 'Match Abandoned', *Art News and Review*, 29 May 1954, p.7.

96. Hill in Alloway, *Nine Abstract Artists* 1954, p.27.

97. Anthony Hill, 'Editor's Foreword', in Hill, *DATA* 1968, p.5.

98. Ibid.

99. Hill, 'Programme. Paragram. Structure' 1968, p.251.

100. David Bohm, 'On the Relationships of Science and Art', in Hill, *DATA* 1968, pp.164–74.

101. Ibid., p.164

102. Ibid., p.165.

103. Ibid.

104. Ibid., p.169.

105. Ibid., pp.169–70. Emphases in the original.

106. Ibid., p.170.

107. Ibid., p.171.

108. David Bohm, 'On Communication' [1970], in Bohm, *On Dialogue*, Oxford 2004, p.2.

109. Ibid., p.3. Emphases in the original.

110. Hill 1959, p.8. Emphases in the original.

111. Hill 1962, p.48.

112. Lawrence Alloway, *Anthony Hill: Recent Constructions*, exhibition catalogue, Institute of Contemporary Arts, London 1958, unpaginated.

113. John Ernest, 'Constructivism and Content', *Studio International*, April 1966, p.149.

114. It is not possible to identify which exact works by Hilton and Hepworth were exhibited in *British Abstract Art* from the scant information given in the catalogue.

115. Lawrence Alloway, 'Introductory Notes', in Institute of Contemporary Arts 1957, unpaginated.

116. The Martin and Hepworth works displayed in this Fitzroy Street exhibition have not been identified specifically, and as such their dates and current locations cannot be provided here. The location of Nicholson's *October 1951* is also unknown.

117. Hill 1952, unpaginated.

118. Anthony Hill, 'Introduction', in *Robert Adams: Exhibition of Sculpture*, exhibition catalogue, Gimpel Fils, London 1951, unpaginated.

119. According to Alastair Grieve, the work was exhibited as *Study for a Work in Progress* at the *Salons des Réalités Nouvelles* in Paris in July/August 1952, and as *Prototype for Commercial Reproduction* in *The Mirror and the Square* exhibition at the Artists International Association Gallery in London in December 1952. See Grieve in Hayward Gallery 1983, p.12.

120. Hill returns, enthusiastically, to the subject of reproducibility and mass production in Anthony Hill, 'Art and Society', *Structure*, 5th series, no.1: 'Plastic Expression in Life', 1962, p.22.

121. Anthony Hill, 'Paintings: Notes for a Concise "Specification Catalogue"' 1957.

122. Anthony Hill, '5 years 1950–55 Jan', in the file 'A. Hill's notebooks 1950–75', Tate Archive.

123. See, for example, Andrew Forge, 'Paul Klee's Influence on English Art', *Listener*, 7 April 1955, pp.607–9.

124. Theo Crosby, 'Parallel of Life and Art', *Architectural Design*, October 1953, p.297.

125. A catenary curve is the U-like curve that a string or cable, for example, forms under its own weight when supported at either end. In mathematical terms, the catenary curve is a graph of the hyperbolic cosine function.

126. Unsigned group statement, 'Abstract Art at the Building Centre', *Architectural Design*, April 1954, p.122.

127. Ibid.

128. Ibid.

129. Alloway, 'Non-Figurative Art in England' 1954, unpaginated.

130. Alloway, *Nine Abstract Artists* 1954, p.3.

131. Ibid., p.4.

132. Ibid., p.5.

133. Ibid., p.13.

134. Roger Hilton in ibid., p.29.

135. Hill in ibid., p.28.

136. Hill 1952, unpaginated.

137. Ibid.

138. Hill 1962, p.48.

139. Hill 1978, p.110.

140. *The Tate Gallery 1974–6: Illustrated Catalogue of Acquisitions* 1978, p.110.

141. Paul A. Chew, 'Introduction', in *Recent Abstract Painting*, exhibition catalogue, Whitworth Art Gallery, Manchester 1956, unpaginated.

142. Ibid.

143. Anthony Hill, 'A Structuralist Art?', *20th Century Studies*, no.3: 'Structuralism', May 1970, p.104.

144. Ibid., p.105.

145. Alfred North Whitehead quoted in ibid., p.108.

146. Charles Sanders Peirce, *Certain Topics of Logic* [1903], quoted in ibid.

147. Ibid., p.109.

148. Ibid.

Acknowledgements

Sam Gathercole is Lecturer in Contextual and Theoretical Studies at the School of Design, London College of Communication, University of the Arts London

Tate Papers, no.31, Spring 2019 © Sam Gathercole

How to cite

Sam Gathercole, 'The Geometry of Syntactics, Semantics and Pragmatics: Anthony Hill's Concrete Paintings', *Tate Papers*, no.31, Spring 2019, https://www.tate.org.uk/research/publications/tate-papers/31/anthony-hill-concrete-paintings, accessed 1 July 2019.

Tate Papers (ISSN 1753-9854) is a peer-reviewed research journal that publishes articles on British and modern international art, and on museum practice today.