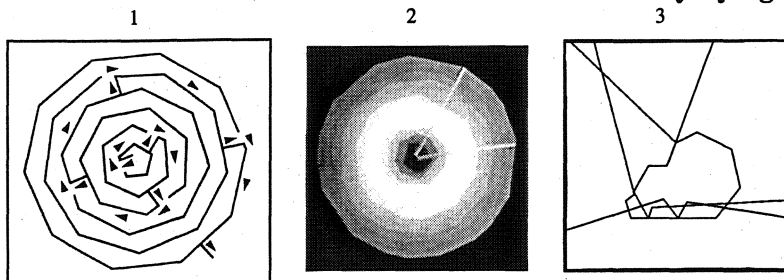


My Use of Number Sequence and Geometry in Art

Kathleen Hyndman:
15 Norwood Avenue,
Kingston Bagpuize, Oxfordshire, England, OX13 5AD
Email: kmhy@construct35.fsnet.co.uk

My paintings are often sparked off by something that strikes me visually. Without a visual stimulus, the result seems arid. I think some mathematicians believe maths needs a link with reality. I use arithmetical sequences and geometry to distribute motifs, shapes, colours; e.g. Golden Section, prime and Fibonacci numbers and eccentric constructions. I make subjective decisions about which sequences and constructions to use. One idea can produce a series of works. Interrelations within the work and to the whole are aimed at a calm unity. Some examples follow of how work is developed.

From a sketch of birds suddenly flying from tree:



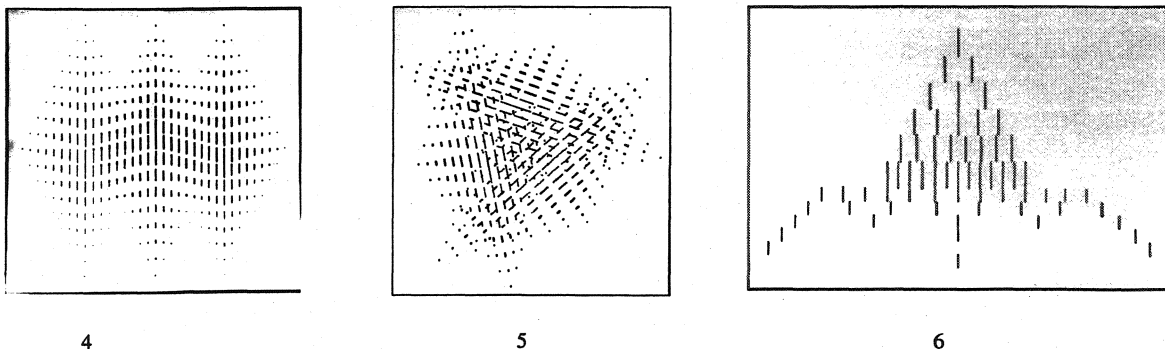
“Escape” (1) Five – ten sided regular polygons are drawn concentrically. A Golden Section point on each polygon links it to the next. A space next to this allows the “bird” to escape outwards. Process

repeated till “bird” outside the design. Base of “birds” starts at Golden Section point of the side where it lies.

“Exit” (2) Five - seventeen sided polygons are drawn concentrically. Each starts with one radius. Succeeding radii are drawn at the G.S. angle. Outer ends of radii are joined giving irregular polygons. Succeeding polygons start at the G.S. point on a side of previous polygon. Birds process between polygons to exit – marked by two radii across all polygons. The colour processes from green to pale green to pale blue to blue gradually. The bird colours and the exit demarcation lines are the reverse of this.

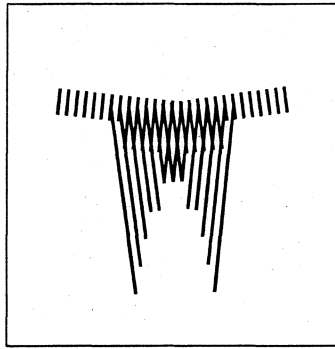
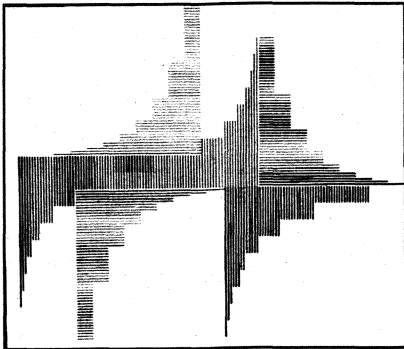
22 variations (3). Each work has a regular pentagon, hexagon and heptagon. One side of each is missing; adjacent sides to this are shortened by G.S. proportion. Lines are drawn at a G.S. angle from shortened points to edge. The polygons relate differently in each work. This one is ‘Moon Buggy’.

Another impetus was from blocks of white chalk lining unfinished Newbury bypass.



Verticals and horizontal evolved into a rhombus; 3 or 4 were overlapped variously and in colour (4, 5) I returned to verticals and horizontals; “Fibonacci Monument and Fibonacci Visitors” (6) is one example.

This idea evolved further. I made Fibonacci units: 9 strips of Fibonacci numbers (1-55); no.1 line is tallest, succeeding strips (2-55) each include and adjoin the previous strip but are reduced in height by one ninth. Height of no. 1 line is equal to width of 55 strip. Thus units can interlock when reversed, transposed, rotated to make big pictures. The two colours in each separate line use Fibonacci sequences contrapuntally. An example is "New York" (7).

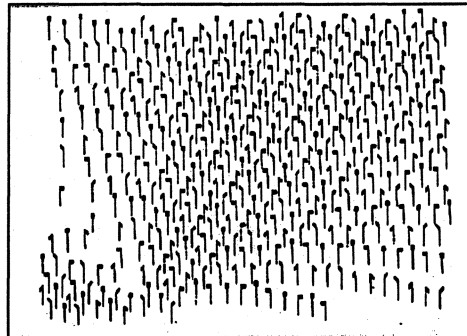
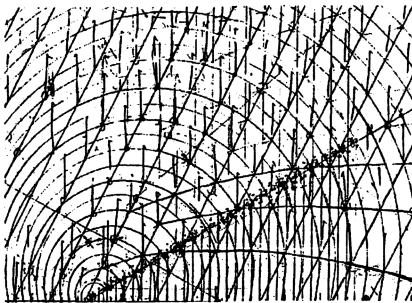


This led to a series of 18 works: each with Fibonacci units 1 – 21. (7 units), no.1 being the length of the 21 strip. Just these two units are overlapped variously. (8)

7 8

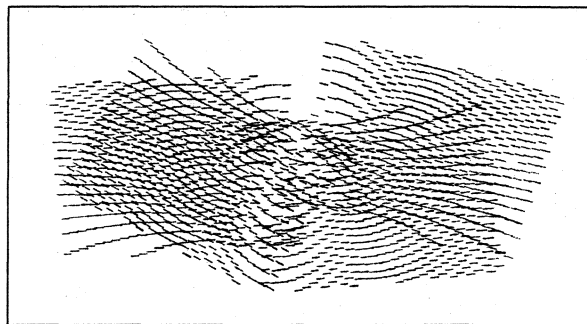
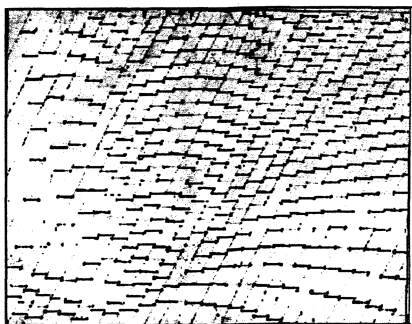
Third evolution: saw verge grasses blowing after passing traffic.

This turned into "Talking Afforested Hill" (10); slightly more than half circles are circumscribed. Succeeding circle centres shift up and to the right so distance between edges of circles is twice as wide on the right as on the left. So slanting parallel lines crossing them have sufficient contact points on the left (9). A vertical line is drawn from contact points with rotating "flag" on top (10). The rotation of the flags



9 10

11 12



is counted up and across to the adjacent line. The different number of strikes made gives an unsuspected (by me) flow (10). In a coloured variation of this, because of disparate strike distribution, colours *seem* random. With 'Sidereal Time', four black-background works, I use limited groups of strikes (as spots). 2 layers of groups are superimposed. The double coloured layer is shifted differently over the white layer in each work to show sidereal time. Variation; contact point lines laid horizontally (11). I saw huge flocks of starlings wheeling before roosting. Four horizontal units approximate their various dances (12).