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- [Hardware, software and games](#)
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- [Internet and communication](#)
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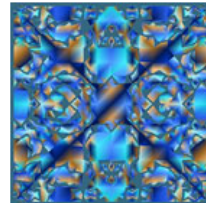
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- [Press Office](#)
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Kaleidoscopic Calculations

February 2013

Computer Art Image of the Month

This month, to compliment the previous two discussions of Manfred Mohr and Ernest Edmonds in this column, we feature new work by another of the great pioneers of algorithmic art - Herbert Franke. Franke has called his practice, 'an active challenge, to develop different methods for producing pictures.'



Click the image to enlarge

Credit: Herbert W Franke, *Intarsien7024Var1*, 2012.

Professor Franke can fairly be described as a polymath; a doctor of physics he also makes computer art and is a prolific writer including text and reference books, plays and science-fiction novels.

He was one of the early pioneers who called for artistic involvement in computer programming and for artists to actively engage with the development of this new technology - recognising from the outset the central role that it would have in our modern IT, communications-driven world.

His groundbreaking exhibition *Experimentelle Ästhetik* at the Museum of Applied Arts, Vienna, presented a compilation of electronically generated visual art in 1959 and was followed by participation in one of most important early group shows of computer art - *New Tendencies* in Zagreb 1969, as well as in the 1970 Venice Biennale.

Throughout an artistic career spanning over fifty-five years he has been involved with major artist-led activities including as a co-founder of the [Ars Electronica](#) festival, ACM SIGGRAPH and as an honorary life member of the Computer Arts Society.

Currently Senior Fellow at the Konrad-Zuse-Institut in Berlin, where he continues his research into the possibilities of machine-supported graphical creation, Prof. Franke thus truly negates any old-fashioned ideas that still plague certain sectors of the art world regarding a perceived division between arts and sciences.

In keeping with other algorists (that is, those interested in using systematic logical sequences to achieve a particular visual result), Prof. Franke uses generative processes to produce abstract images. In particular he uses algorithmic and programming process to make series of images or variations on a theme. Our image this month is a striking example which demonstrates his interest in complex patterns and seems to pulsate with kaleidoscopic qualities.

This image arises from a program written by the artist for a picture generator with the software 'Mathematica'. I am especially honored to be able to share with you the first sight of one of these new art works from the series *Intarsia* ahead of its publication in the journal *Grundlagenstudien aus Kybernetik und Geisteswissenschaften*; 'Stetigkeit - ein ästhetisches Ordnungsprinzip' (Continuity - an Aesthetic Principle of Order).

Franke says Mathematica 'is a special software tool for all types of mathematical calculations, research, and visualisation' and he tells me that it produced 252,806,400 variations of pictures on the basis of 12 configurations that he input.

In his ground-breaking and influential book *Computer Graphics - Computer Art* (first published 1971 and translated from German by Gustav Metzger) Herbert Franke described all aspects of creative use of computers including in music, choreography, poetry and animation, as well as design, graphics and art. He set out what he expected graphics to be based on: symmetrisation, transformations, mathematical functions, moiré patterns, permutations, interpolation and extrapolation, matrix calculus and random numbers.

He was one of the first to theorise about potential definitions of the subject, writing 'The term "computer art" refers neither to a specific style nor to a particular quality, it merely characterizes the instrumentarium.' (meaning the unique collection of equipment and instruments for practice.)

It is what the individual artist brings to it that makes this medium different from others. As the instrumentarium provides a common basis the various art forms need not be separated or taught in different institutions.

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He has also argued that under different circumstances the computer 'might equally well have been invented as an instrument of art, (rather than of data-processing) e.g. in the socio-political environment of ancient Greece, where art as well as science and technology was considered a noble pastime.' (From Franke: [The Expanding Medium: The Future of Computer Art, 1987](#))

Prof. Franke is well-placed to consider the crucial importance that digital technology will have on the future development of the human brain. He believes that the existence of image creating systems increases our means of expression and of imagination.

Because the brain's means of expression is closely related to our way of thinking we are better prepared to register linear relationships such as chronological and causal ones than two-or three-dimensional ones.

Here is where art can step in, as it is the latter ones which can be better described by pictures. Living with computing technology is resulting in changes in our way of thinking and these changes are most pronounced in those areas in which artistic and technical tasks overlap.

The computer is often perceived as being situated between contrary forces - human needs on the one hand and on the other a world that is becoming increasingly technical and thus opposed to human nature.

Herbert Franke reminds us that the example of computer art shows that such technology can also be used in a humane way - in the true sense of the word, emphasising the value and agency of human input. (From Franke: [The New Visual Age, 1985](#)). A dynamic cooperation between man and machine bringing to bear human qualities such as sympathy and compassion on artificial intelligence, virtual reality and cyberspace would be a valuable result.

[Catherine Mason](#) is the author of *A Computer in the Art Room: the origins of British computer arts 1950-80*, published in 2008.

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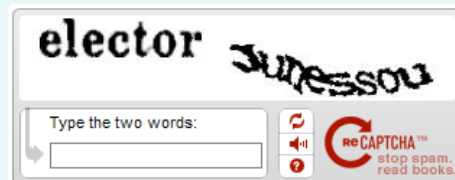
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