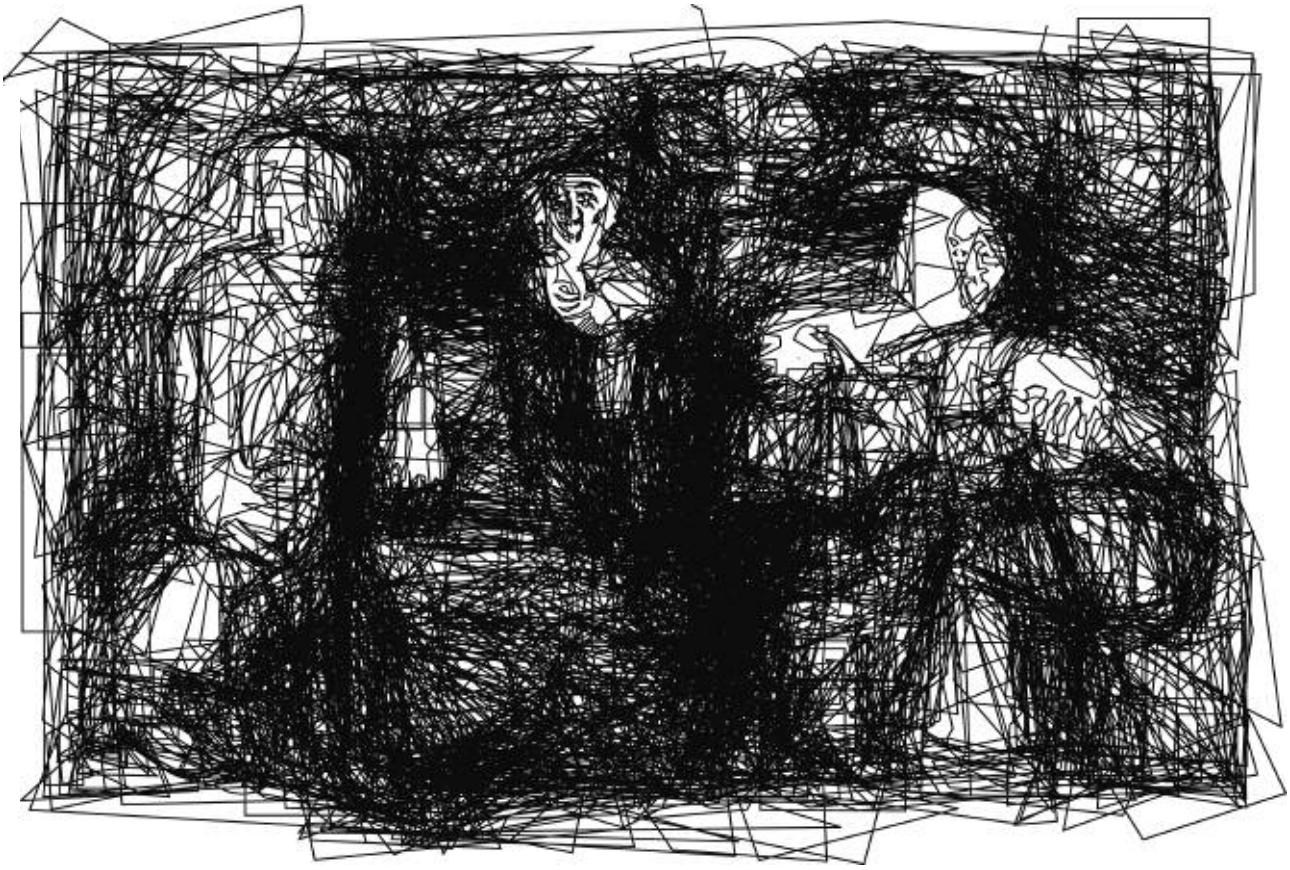

Img. 2 »L 103 **Artists**« (view mode: outline "path")
©Stefan Skiba 2015

The monitor acts as my canvas – the use of vector graphics in contemporary art.

Stefan Skiba 01.08.2015 / Translated by Gerald Parker

Img. 1 »L 103 **Artists**« (view mode: pixel "preview")
©Stefan Skiba 2015

Introduction

The aim of this paper is firstly to introduce the reader to the type of contemporary artistic image development that I have been using since 1992. Secondly, I will provide the reader with a paradigmatic, precise and detailed description of an experimental setup to determine form volumes in relationship to surrounding surfaces (volume stencils©). Both higher education teaching personnel and students will find this of use. As a consequence of the foregoing, the third and final part is dedicated to providing the reader with details of the eight separate steps involved from the screen display to the original graphic print.

1.1 Image development / tool box

The contemporary image development / tool box comprises two distinct parts: A priori physical: Computer, display(s), the manual input equipment, e.g. keyboard, mouse and drawing tablet together with pen. A posteriori virtual: Software that provides the artist with tools for the development, modification and grouping together of primitive objects (lines and polygons) within a freely defined surface on the basis of Bezier curves.

1.2 Virtual tools

The software provides two types of tools. The first functions in an analogous manner to its physical counterparts (“palette”, “scissors”, “knife”, “brush”, “eraser”, etc), however it is used together with either the mouse or a plastic pen (together with a pressure-sensitive drawing tablet).
The second type includes tools devoid of a physical equivalent. Instead, their functions have been programmed exclusively for the special requirements demanded by virtual operations and for new image development.
They
- simplify processes (“scaling tools”, “mirroring tools”, “eyedropper tool”, etc),
- improve their precision – (“transparency tool”, “zoom tool”, etc)

and
- provide greater scope for creative freedom and thought (“blend tool”, etc).

1.3 Deviations from traditional techniques

Apart from some analogies with artistic methods using traditional graphic techniques, – in particular silhouette, woodblock and screen printing – vector-based original graphic creation processes are highlighted by significantly different characteristics.

- Cursor keys enable the artist, by means of changing the position between coloured surfaces and lines and by using very small defined dimensions, to establish a precise relationship between these surfaces and lines.
- The monitor is independent of time and space and, as a projection surface for artistic imagination, provides constant uniform lighting conditions without any shading influences.
- Magnification and reduction functions (400%) enable the user, at any time, to change from detailed assessment and processing to viewing complex large-format creations from a greater distance.
- Reconstruction of creative processes by means of
  a) screen logs,
  b) the reverse of creative steps,
  c) the use of layers or
  d) the storage of different creative phases in separate files facilitates the development of systematic procedures and methods in order to achieve compositional and semantic goals.

1.4 Image development / technique

The use of virtual vector-based software tools permits systematic composition-related research work, experiments and studies (volumes, light/dark, colour, surface and line relationship methods). The results obtained, and the procedures discovered, enable the *"only relevant implementation of an artistic conception based on applied technology" (Karl Graak, Wikipedia, search term "Grafik" 07.07.2015)*. The result is original graphics. In particular, *"(in the case of vector graphics) the maximum approach succeeds in overcoming the inherent contradiction between form and content. Almost perfect and reduced to the simplest form" (Peter Overbeck, on vector graphics in a letter to the gallery owner Renate Harting-Schuler / Frankfurt a. M. on 19th April 2010)*.

Fig. 3

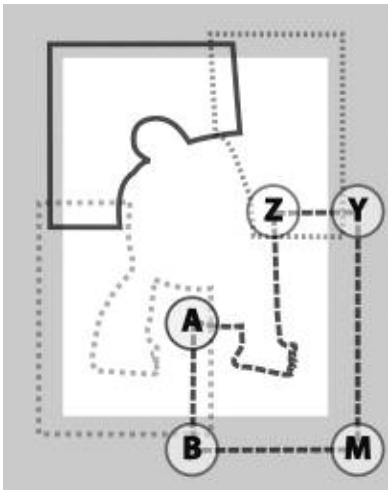

Fig. 4

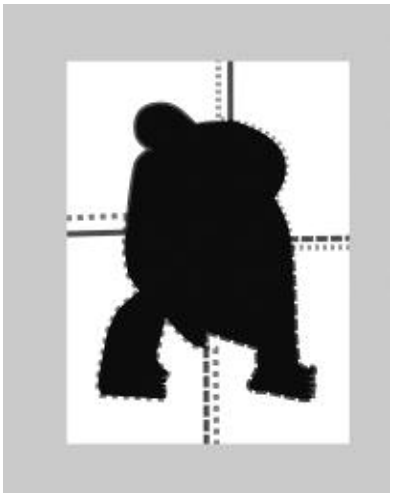

Fig. 5

2. Test setup: Volume stencils©

2.1 Development of a highly iconic silhouette

Learning objectives

- *Motoric experience: Coordination of activities between hand, mouse and screen display.*
- *Cognitive experience: Practice of use of the main functions of digital tools.*
- *Emotional experience: Patience (drawing with path tools instead of crayons or brushes enables the user to experience the whole process in slow motion.*

a) Using vector software, we set up a DIN A4 sized document of horizontal format with three layers – background layer, form layer, mask layer - enter a file name and then save it.

b) In the upper layer (mask) we define an approx. 5cm wide light-grey passé-partout. The inner part is arranged in a horizontal format – for instance A5 – and remains empty. Finally, the “mask” layer is locked, i.e. it can no longer be further processed with tools.

c) On lowest layer (background), we set up a surface with the colour attribute “white” whose volumes extend approximately 1 cm over the inner edges of the passé-partout. This layer is now also locked.

d) The middle layer (forms) is that layer used for drawing. Using the “path tool” (Attribute: black, approx 1 pt thick line, no surface), we draw a highly iconic silhouette of either an animal or human object to which we have an intensive emotional connection.

2.2 Transcription from complex to reduced forms

Learning objective:

- *Cognitive experience: Abstraction by transcribing a complex highly iconic form to its minimum significant features*

e) The complex polygon comprises a large number of “anchor points”. In order to process further, all templates, photographs etc have to disappear from sight. The file is saved on the data medium under a new name in the same folder.

f) In order to transcribe the signification (the screen display) from its special, individual form into a timeless, universal form, the “anchor points” are gradually reduced to a small number of more manageable points. Furthermore, the forms of partial sections of the figure (“path segments”) can be adapted to the new reference, our memory, our own imagination and our way of seeing things. If the outline corresponds to our requirements, then we can start with both making the stencils and the experimental setup.

2.3 Stencils for determining the volume

Learning objectives:

- *Emotional experience: Development of individual feeling for volumes (large-small / loud-quiet / light-heavy).*
- *Cognitive experience: Distinguishing between “inner” and “outer”, “positive” and “negative”.*

g) In order to make a stencil from the available outline, the closed “path” is cut at four appropriate points (vertical cuts at the top and bottom, and horizontal cuts at the left and right) by means of the “scissors” tool (Figure 3). Each of the four resulting incomplete parts contains starting nodes (“anchor point” A) and end nodes (“anchor point” Z)

h) “Anchor point A” and “anchor point Z” of the respective quarters are both connected with new “anchor points” at the shortest horizontal, or vertical, distance overlapping the inside edge of the passe-partout by approximately 1 cm. The right-angle formed between the new “anchor points” (B and Y) results in “anchor point M”. The open “path” is closed from both sides at “anchor point M”.

i) Each inner horizontal and vertical straight “path segments” of the four resulting stencil parts are now to be drawn out beyond the middle of the figure in such a manner that they overlap each other (Figure 4). Finally, the attribute “line 1 pt black / no surface” of each of the stencil parts is replaced by the attribute “no line / surface white”. The stencil parts are now invisible in view mode (pixel) “preview”, since their attributes match those of the background surface (layer “background”).

j) In order to see and work with the stencil parts, we assign black to the white surface in the lowest layer (“background”) after unlocking the surface colour attribute “black” and then locking it again (Figure 5).

k) Now, additional details with the surface attribute “white” can be added in the unlocked middle layer (forms) of the uncovered black area.
The setup phase is now completed.
The first experiment is started by shifting all elements of the middle layer (“forms”). This is done in order to determine, by means of interplay between stencil details and the uncovered area, not only the ideal relationship between them, but also the ideal volumes of our animalistic or human object in relation to the surrounding surfaces (Figure 6).

l) Additional experiments can be carried out to determine the effect of volume expansion for the case of inverted colours (stencil surface attribute “black” / background surface attribute “white”) or the use of colour.

Fig. 6
»**Musician**«
(View mode: pixel “preview”)
Light-resistant digital print, scalable.
© Stefan Skiba 2013

3 Printing of original graphic art

3.1 Method

Upon completion of a vector graphic on the monitor, the colours can be separated using software parameters in order to expose the templates for screen printing or photoxylography.
Traditional work using a printing block or screen is, with respect to the factors space and time, inflexible and fails to offer a rich variety of the edition sheets.
Digital printing with lightfast colours is more appropriate for the generation of original display graphics. The attribute “print on demand” provides the artist with additional possibilities:

- Completion of the print run over an unlimited period of time,
- Adjustment of the format of each individual graphic of a particular edition depending on the individual demand,
- Minimisation of expense involved in not only storage, but also storage systems,
- Unlimited correction possibilities after trial printing.

The optimised printing procedure comprises eight steps:

3.1.1 The artist can choose to either carry out the printing him/herself, or outsource it.

3.1.2 The artist calibrates the colours between the monitor and the trial printing.

3.1.3 The edition is limited (in the sense of a scarce commodity).

3.1.4 Each sheet of a particular edition may be varied formally over an indefinite period of time. Furthermore the colours may also be varied.

3.1.5 Each copy is numbered and documented in a catalogue (Excel file). It contains details concerning:
- Individual sheet number,
- Publication date (first trial printing),
- Date of printing of each individual sheet,
- Format
- Price, …

3.1.6 Each individual original graphic work is signed by the person responsible for its creation.

3.1.7 Each graphic print is provided with a manually applied clear varnish to provide not only physical protection, but also to prevent plagiarism.

3.1.8 Similar to destroying a printing plate or printing block, the artist deletes the source file as soon as the edition is complete.

Conclusion

Vector graphics is a modern-day drawing technique. Tools and equipment enable the creation of computer generated art. Depending on the particular aim of the artist, vector graphics can *"be produced as original graphics, i.e. they are autonomous, independent of picture copies and can deploy printmaking techniques to reflect artistic expression."* (Wikipedia, search term "Grafik" 07.07.2015).

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