Up close and personal: some effects of technology on portraiture

Blake Hurt

PO Box 7885 Charlottesville, VA 22906, USA
E-mail: blake@blakehurt.com

Abstract: Computer technology has created new opportunities for the methods used in making portraits. These opportunities include adding elements from the hand of the sitter, as well as detailed physical measurements that are now available from technology, such as fingerprints. Using these new methods, the paper identifies two new perspectives, reflective and objective, in addition to the traditional point of view, subjective, as being the result. Illustrations from the author's own work provide visual examples. A short review of other work in the field is also provided.

Keywords: art technology; digital portraits; ink collage; portraits; portraiture.

Reference to this paper should be made as follows: Hurt, B. (2009) 'Up close and personal: some effects of technology on portraiture', *Int. J. Arts and Technology*, Vol. 2, Nos. 1/2, pp.51–61.

Biographical note: Blake Hurt is an independent artist who has participated in numerous national juried shows in the USA. He has recently published: *More Than A Pencil: Using the Computer to Make Two-Dimensional Art*, *Fifth International Conference on Computing, Creating, Connecting and Collaborating through Computing, Kyoto, Japan, 2007*.

1 Introduction

The recent creation of inexpensive computer technology and laser printers has produced many opportunities for innovation in portraiture. Technology has delivered script-based performance and quick execution, along with phenomenal control of both drawn line and colour. Each of these innovations represents a significant addition to the tools of the digital artist. I have grouped these new possibilities in portraits into three categories: subjective (the view of the artist), reflective (also includes work of the sitter directly), and objective (includes biometry and independent information).

Several examples of portraits that are possible with this new information and the new techniques are illustrated from my own work.

2 Recent technology

Accurate control of the drawn line was once indicative of both manual practice and skill. The computer has changed this. Consider the task of duplicating by hand one of the small portraits of Figure 1.[1] A skilled artist could approximate this with ease. To do it precisely

would be difficult. With a computer, however, the resolution of such a problem is straightforward. Furthermore, making a thousand such portraits in varying tones is almost as easy, as in Figure 2. Such a mosaic for an artist using traditional pen or pencil would be both time-consuming and tedious.

This example illustrates two aspects of digital technology: one is its scale, and the other, its speed. With reference to scale, in traditional tools the size of a drawing makes a difference in its execution. A 22 x 30-in. picture can be conveniently handled; one that is 2 x 3 in. is cramped, and 36 x 48 in. is unwieldy. As a quality laser printer can print 1,440 dots per inch on 36 x 60-in. paper with ease, any of these can be produced by such a printer at a level of detail difficult to imitate by hand.

The second aspect, related to the scale, is the speed with which the image can be produced. Consider again the boy in Figure 2. His exact images from Figure 1 are repeated in slightly differing tones over the 36 x 48-in. picture that makes the photo mosaic. Even allowing for an abundant amount of time for the development of the program that created the picture, the computer generation of the picture took a fraction of the time such a hand drawn image would take. It is an essential aspect of the new digital art that a tedious or repetitive task can be collapsed in time (Hurt, 2007) exposing new possibilities. All digital images are not necessarily improved by a higher speed of execution, but there are many that are impossible without it.

Figure 1   Details from 'Ben in Morse Code'

1a   1b   1c
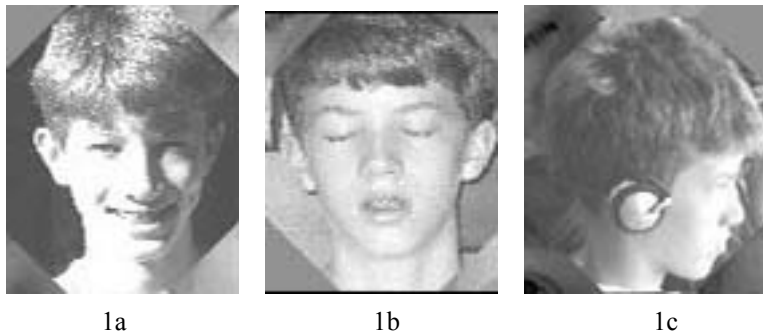
Figure 2   'Ben in Morse Code', 36 x 48 in., 2004
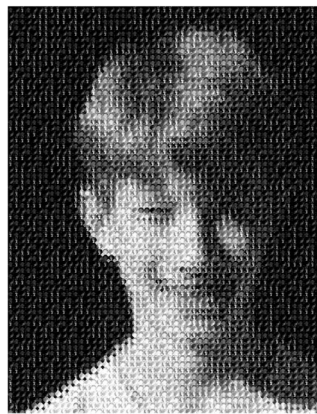
In addition to the new technology for expression that the visual artist has, there are more inputs available for making a description, such as audio, visual, and biometric information that can be incorporated in a portrait. As a result, the nature of portraiture is changing to include new methods of identification and expression.

In the following pages, several examples will be provided, all of which required computers and software to be created,[2] and most of which revolve around the idea of including additional information about the sitter into the portrait. Each example approaches the idea of portraiture differently and relies increasingly on technology for their content. Of the pictures included, most were produced by a technique I call 'ink collage',[3] which combines a variety of line drawings with a colour photograph to make a mosaic in which the image coalesces at a distance, but dissolves into individual line drawings as one draws physically nearer.

3 The subjective portrait

The subjective category includes traditional portraiture: the artist gazes upon the sitter and creates a visual representation of his or her face. The choice of lighting, colour, and features belong exclusively to the artist, and the resulting portrait is dependent on the artist's judgement and skill.

For example, in Figure 3, 'Bill Stevenson', we see a subjective representation of the sitter, where the portrait is comprised of a series of drawings that I either collected or drew based on my knowledge of him. There is a map of Berlin, Figure 3b, of Vietnam, a drawing of his family, his father, and his friends. This view reflects the choice that I have made of items that describe him. Their selection, placement, and prominence provide one view of the man that might vary from one person to the next. This follows in the tradition of portrait painting where the artist included references to the life and activities of the sitter as, e.g. in his 1812 magnificent oil painting of 'Napoleon in His Study', Jacques-Louis David included in the background a picture of a draft of the Napoleonic Code on the desk and a Marshall's baton as indications of Napoleon's accomplishments.

Figure 3   'Bill Stevenson', 24 x 32 in., 2007 (see online version for colours)
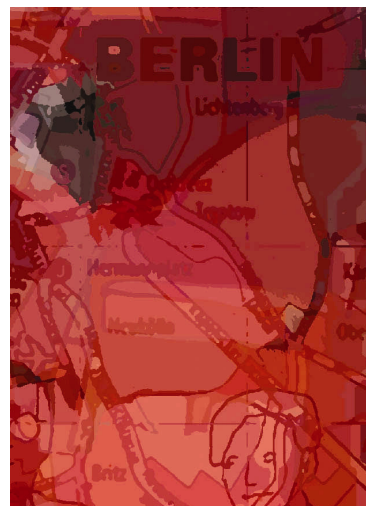
3a   3b

Figure 4   'Mahmut', 24 x 32 in., 2007 (see online version for colours)

4a   4b

In Figure 4, 'Mahmut', the sitter, a Turk, is rendered through the interlocking drawings of the maps and archaeological site drawings of his home near Antalya. The portrait describes him through his focus and his travels.

Like 'Stevenson', the subjective nature of the included references simultaneously elaborate on the sitter's experience, and reveal to the viewer a selection of them. The experiences are unique, but nevertheless the choice among these is dependent on the artist's knowledge of the subject as well as his own message or story.

4   Including the reflective

In the reflective category of portraits, we include the work of the sitter that he might have used to exemplify himself. In one sense, this is naturally done by the expression on his face, how he cuts his hair, and how he holds his head. In this group, however, I am including those items that are directly produced by the sitter's hand. As an example, in Figure 2, 'Ben in Morse Code', I have included an essay written by the sitter, which describes himself. The essay, originally written in English, was then translated into Morse code where the dot, dash, and space of Morse code are denoted by the three elements of the photo mosaic shown in Figures 1a, b, and c, respectively. The Morse code for the essay was then presented in sequence from the upper left of the picture to the lower right. The picture thus has three different layers: the sitter's essay about himself, the smaller portraits that symbolise the dots and dashes, and the composite of the photo mosaic itself.

An alternative use of the sitter's self-description is shown in Figure 5, 'Dr Deaver', where the portrait includes the entire text of the physicist's most well-known paper, Figure 6a, which is a reflection on his thinking and work of the time. It also includes drawings and details of his current laboratory, Figure 6b, which would be analogous to the possessions that populate a Renaissance portrait of a Dutch burgher, representing the materials under his control, and direction and his standing as a scientist.

Figure 5 'Dr Deaver', 24 x 32 in., 2007 (see online version for colours)
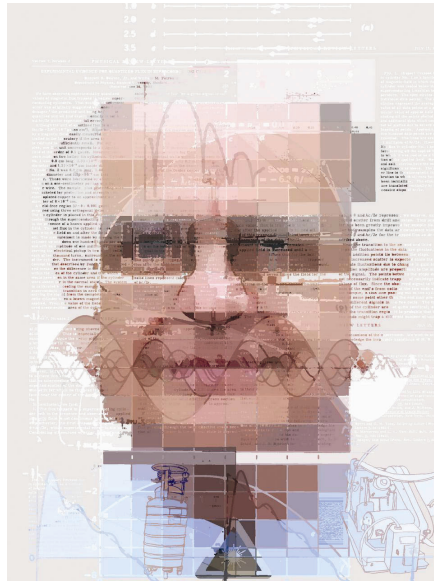

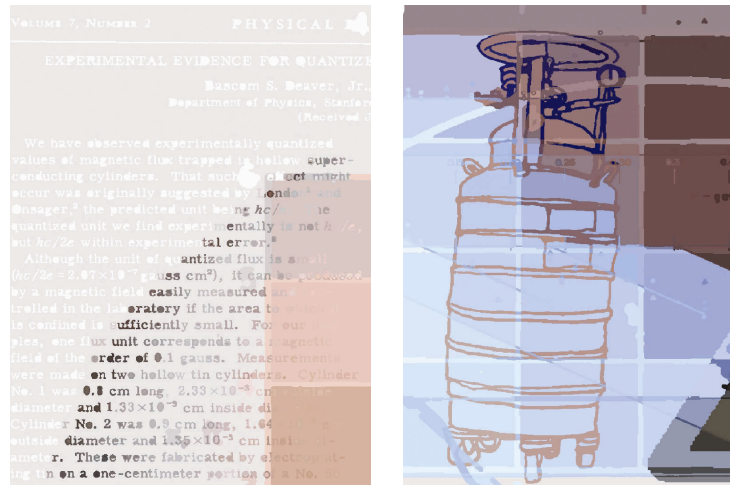**Figure 6** From 'Dr Deaver' (see online version for colours)

Figure 7, 'John Mathews, Architect', is a third example in which I have used a variety of the drawings made by the sitter himself. This work includes his own visual description of his thinking. The portrait thus becomes a collage of the sitter's architectural designs that act as a prism for his face, rendering him through his own aesthetics.

Figure 7   'John Mathews, Architect', 24 x 32 in., 2007 (see online version for colours)

In the reflective group, the sitter's will and style are included directly into his portrait by the use of his work product as an element of his appearance. This is a step removed from the artist's subjective interpretation as the technology allows inclusion of the sitter's drawings or writings directly. There is a merger of the point of view of the sitter and that of the artist in creating the portrait. Having now included the artist's view and the sitter's, we can also include information about the sitter from the society's perspective.

5   Including the objective

In the USA, the nature of identification has migrated from a face and name to descriptions that are considered more durably unique. These measures may well be the most commonplace portraits in use. To be created, these descriptions require computer technology, and their inclusion in visual representations also requires such technology.

Consider Figure 8, 'Carol's Fingerprint', which is a rendering of her through a filter of one of her own fingerprints. As fingerprints are commonly considered unique, this representation might be more reflective of her appearance to our world of technological measurement and identification, than her facial features alone. Software can recognise fingerprints much easier than it can recognise faces.

In Figure 9, 'Sign of the Times', the image of the sitter is rendered in the voiceprint of the sitter modulated by a sine wave, Figure 9b. The recording of the voice of the sitter is now incorporated into the portrait, and provides another layer of description and identification. Unlike the artist's subjective view of the sitter, or the sitter's own thoughts of himself, a voiceprint is less easily modified, and thus more likely to be considered objectively distinctive of the sitter.

Figure 8 'Carol's Fingerprint', 24 x 32 in., 2008 (see online version for colours)

Figure 9 'Sign of the Times', 36 x 48 in., 2004
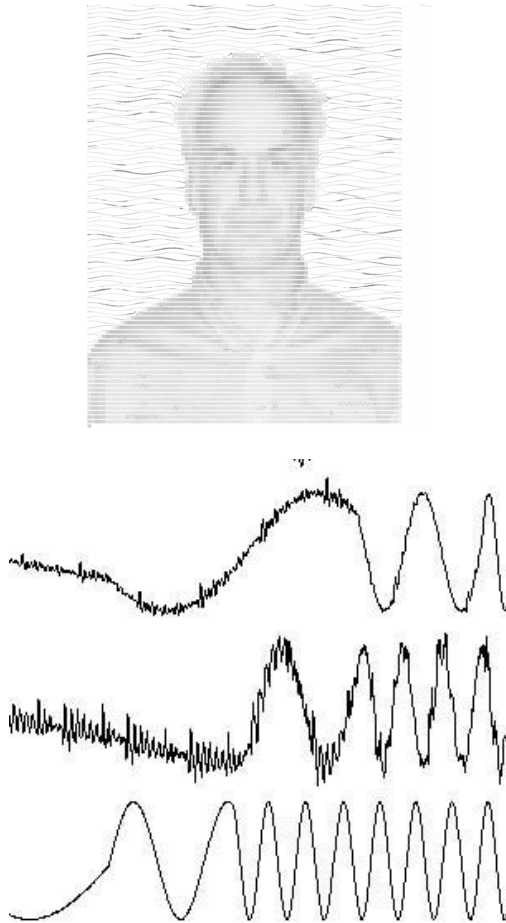
Figure 10   'Carol with MRI', 24 x 32 in., 2008 (see online version for colours)

In Figure 10, 'Carol with MRI,' the sitter is rendered in the outline of images from a magnetic resonance imaging (MRI) system, a medical device that allows the creation of pictures of the inside of people without requiring invasive surgery. The scans included are of her spine, which provide a two-dimensional representation of her physical presence at a specific time.

In this case, there is a representation of both the physical inside and outside presented for public view. Whereas the identity of the sitter could be made with visual identification of a fingerprint, and with analogue equipment for a voiceprint, the requirements of medical imaging technology would only be possible with the advanced computer technology of the last 20 years. With such technology, the physical description of the person can be created with a specificity that was never before possible, although it is an identity that concerns itself completely with our measurable physical characteristics.

As technology has progressed, it has become possible to more accurately measure an individual and identify him uniquely. Ironically, this process requires information that is increasingly distant from our intuitive understanding of a person and their identity. On the one hand, we might recognise the touch of a loved one, but we would not be able to identify their fingerprint. Where we could easily distinguish a person by their voice, most would be baffled by the shape of their voiceprint. And even a skilled doctor has difficulty in matching the identity of the person to a particular MRI image, although he could easily distinguish between two images that come from different people. As a result, some might object to the use of such emotionally vacant information, such as iris scans and fingerprints in their portrait on the grounds that these are not reflective of their humanity, will, humour, or outlook. Although such physical measurements in the future may be no more emotionally descriptive than nineteenth century phrenology, I would argue that a person's physical presence is part and parcel of who they are, or what they have done. Furthermore, it is because of our intuitive unfamiliarity with such new technology and its results, that the use of such information could provide an element of ambiguity that

makes a portrait more interesting. The current viewer is faced with the experience of knowing rationally that the sitter is being very specifically and uniquely described, but not knowing the value or implication of that information. Like a modern day hieroglyphic, one is tantalised by the presence of a message expressed in an unknown language.

6   Related work in portraiture

The incorporation of smaller related objects into human portrait is most famously done by Guiseppe Arcimboldo (Italian painter, 1527–1593; Arcimboldo, 2008), who made a variety of portraits using vegetation to denote the personification of air, water, and the seasons among others. By combining vegetables and fruits of the season, the result was a colourfully articulated face.

A different technique of combining small images into a large image is the well-known technique found in photo mosaics. This method generally relies on a library of small photographs that have been assembled, which provide a range of colours. Often included in such works are photographs that do relate to the subject itself, e.g. a picture of an actress might use photos of her in various roles. Because the smaller pictures act as tiles for the entire picture, it requires a large set of such pictures in order to fully convey the larger image. Certainly this technique could be used to explore both the reflective as well as the objective categories I have described. One example is 'Myra' by Marcus Harvey (2000) who, controversially, rendered a British child killer using small pictures of children's handprints.

In portrait painting, the New York artist, Chuck Close, has created a large body of work on modern portraits (Friedman, 2005), many of which involve the deconstruction of the sitter's face into smaller objects, like circles, dots, etc. His works are generally large and hand painted and these, combined with his skill in capturing the face, gives his work a visual presence that is often lacking from a photograph or a print.

Mike Lyons (2008) is using custom-, computer-controlled, milling machines to make portraits where the drawing size is very large, approximately 1 x 2 m. The execution of the work reflects modifications of the photographic image through the idiosyncrasies of his constructed machine and software. Unlike software processing where all transformations are repeatable, the vagaries of mechanical transcription make his images unique.

With respect to the software manipulation of photographs, Pascal Dangin (Collins, 2008) appears to have created a variety of specialty filters and adaptations to Adobe's Photoshop (2008), which are used to manipulate digital images to subtly modify the face according to his tastes. The results are meant to appear as photographs but more attractive. Such enhancements are similar to the complimentary improvements that were made by the most popular portrait painters of the nineteenth century who would paint their clients as slimmer and more noble than they would appear in person.

The inclusion of non-pictorial information into a digital picture is found in the science of steganography where digital text is subtly woven into the picture pixilation. Both the encoding and decoding of this information from the picture requires the computer and this could be a part of the objective category that I have described. Although the techniques were developed to hide information in a digital picture, it certainly could also be used to convey information openly in a portrait.

In the area of reflective work, one could also consider a 'connect-the-dots' picture as a work of art where the portrait maker, who puts down the dots, and the viewer, who connects them, are collaborating on a portrait that involves them both. A 'paint-by-numbers' portrait would also fit into this category.

7   Recent technologies

Although the computer is commonly used to generate graphics for commercial art, it is not nearly as common in making fine art, especially original works as opposed to editing digital photography. Nevertheless, because of the significant commercial demand, there are many software suites that could be used for original work, not the least of which are Adobe's Photoshop, Illustrator, and Flash, as well as the open-source graphics editor, Gimp (2008). Much of the most technically demanding work-creating pictures is being performed in the area of animation for both web presentations and video, but in the area of print media, there are several interesting projects that deserve mentioning.

The computer language, Processing[4] (Fry and Reas, 2008), based on the language Java, has been used to make a variety of artworks by Jared Tarbell (2004) and others. Nodebox (De Bleser, De Smedt, and Nijs, 2008) is another language, based on Python, which is also oriented towards graphic output. Coyne, Lentczner, and Hurigan (2008) have made Context Free, which is a software environment for using context-free design grammars to produce images.[5] Many of these software packages have far wider application than portraiture. Currently, most are used for abstract design, but their use in portraits would be possible and provocative.

8   Conclusion

The recent arrival of computer technology has enhanced the field of portraiture. For the bulk of its development, the portrait relied on the subjective depiction of the artist to convey the image of the sitter and, often, the accoutrements of his life and accomplishments. This subjective phase has recently been extended in two ways: the reflective approach where the artist and the sitter collaborate in making the artwork and where the actual work product of the sitter is included in his description, and the objective approach, which is the incorporation of exterior information that describes the sitter uniquely, and which is derived from modern technologies and measurements. These descriptions require computer technology for their existence, and require it for their expression. The result is the expansion of traditional portrait making which offers interesting new artistic opportunities that are distinctive of our time and exciting for the artist and the viewer.

References

Adobe Systems Incorporated (2008) Available at: www.adobe.com; accessed August 4, 2008.

Arcimboldo, G. (2008) Available at: www.artcyclopedia/artists/arcimboldo_guiseppe.html; accessed August 1, 2008.

Collins, L. (2008) 'Pixel perfect: Pascal Dangin's virtual reality', *The New Yorker*, 12 May.

Coyne, C., Lentczner, M. and Hurigan, J. (2008) Available at: www.contextfreeart.org; accessed August 2, 2008.

De Bleser, F., De Smedt, T. and Nijs, L. (2008) Available at: http://nodebox.net; Experimental Media Group, St. Lucas School of Arts, Sint-Jozefstraat 35, B-2018 Antwerp, Belgium.

Friedman, M. (2005) *Close Reading: Chuck Close and the Artist Portrait*. New York, NY: Harry N. Abrams, Inc.

Fry, B. and Reas, C. (2008) 'Processing', Available at: www.processing.org; accessed August 2, 2008.

Gimp Development Team (2008) Available at: www.gimp.org; accessed August 4, 2008.

Harvey, M. (2000) 'Myra', in *Sensation: Young British Artists from the Saatchi Collection*. New York: Brooklyn Museum of Art, October 2, 1999–January 9, 2000.

Hurt, B. (2007) 'More than a pencil: using the computer to make two-dimensional art', Paper presented in the Proceedings of the *Fifth International Conference on Creating, Connecting and Collaborating through Computing* (C^5 2007), January 24–26, 2007, Kyoto University, Kyoto, Japan.

Lyons, M. (2008) 'Mike Lyon & Lyon Art, Ltd.', Available at: http://mlyon.com; accessed August 1, 2008.

Tarbell, J. (2004) 'Gallery of computation', Available at: www.complexification.net; accessed August 2, 2008.

Notes

[1] All the figures included are the works of Blake Hurt.

[2] The art works presented are all ink on paper printed by a laser printer of one form or another. I wrote the software that produced the works in the language Common Lisp, with supporting graphics and computational libraries in the language C. Most of the software was open source and was run under Linux operating system.

[3] Ink collage: although all taking place in software, an ink collage is a combination of a photograph with a series of intersecting line drawings. The line drawings divide the space into small mosaics that take their colouring from the photograph. The result can then provide a portrait at a distance along with a combination of drawings when the picture is near. For more examples, see www.blakehurt.com

[4] The processing language description: 'processing is an open source programming language and environment for people who want to program images, animation, and interactions. It is used by students, artists, designers, researchers, and hobbyists for learning, prototyping, and production'.

[5] Context Free is a 'full graphical environment for editing, rendering, and exploring CFDG design grammars'.