

## Research on "The Digital Revolution and Origins of Computer Aided Graphic Design"

Source: Megg's History of Graphic Design

Electronic and computer technology advanced at an extraordinary pace, transforming many areas of human activity.

Graphic design was changed by digital computer hardware and software and the explosive growth of the Internet.

Industrial Revolution had begun fragmenting the process of creating and printing graphic communications into a series of specialised steps.

\*In 1960s (then):

Phototype (metal printing block) became prevalent during 1960s  
skilled specialist included:

- graphic designers: created page layouts
- typesetters: operated text and display typesetting equipment
- production artists: pasted all of the elements into position on boards
- camera operators: made photographic negatives of the pasteups, art and photographs
- strippers: assembled these negatives together
- platemakers: prepared the printing plates
- press operators: ran the printing presses

\*In 1990s (now):

Digital technology enabled one person operating a desktop computer to control most (or even all) of these functions.

- design (do everything on our laptop or computers)
- print (printing store)

Introduction to this technology in the past:

- strong initial resistance by many designers
- new technology improved rapidly
- inviting widespread acceptance

\*benefits:

- computers users empowered by greater control over the **design and production process**
- digital technology and advanced software expanded the **creative potential of graphic design** by **making possible unprecedented manipulation of colour, form, space and imagery.**

Origins of computer-aided graphic design:

Digital revolution came to the desktop of individual graphic designers as a result of affordable yet powerful hardware and software created primarily by three companies:  
1980s

- Apple Computer developed **Macintosh computer**
- Adobe Systems invented **PostScript programming language** (underlying page-layout software and electronically generated typography) - now: Illustrator (enabled printers to output text, images and graphic elements and determine their place on the page) (stored as graphical commands and data)
- Aldus created **PageMaker** (an early software application using PostScript to design pages on the computer screen - now: InDesign) (developed software enabling newspapers to produce advertisements more efficiently)

Functions of a PageMaker:

- alter type size, font and column dimensions
- integrate text type with other elements (scans of pictures, ruled lines, headlines and borders)

Desktop publishing:

- saved significant amounts of time and money in preparing pages for printing
- procedures; layout, typesetting, making position photostats and pasting elements into position were all combined in a seamless electronic process

Unprecedented expansion of design education and professional activity produced a larger field with vast numbers of trained practitioners.

Number of individual designers and firms producing fine work → rose exponentially

Digital technology → enabled untrained and marginally trained practitioners to enter the field.

### Pioneers of digital graphic design

Many designers rejected DIGITAL TECHNOLOGY during its INFANCY and derided those designers who chose to explore it.

Many embraced it as an INNOVATIVE TOOL of expanding the scope of the field of graphic design as well as the nature of the design process.

Computer as a design tool:

- enabled one to make and correct mistakes.
- colour, texture, images and typography could be stretched, bent, made transparent, layered and combined in unprecedented ways

Early pioneers:

- April Greiman LA (1948)

(explored capturing images from video and digitising them, layering images in space and integrating words and pictures into a single computer file)

new spatial elasticity became possible in typography and imagery

expressed obligation to "take on the challenge of continuing forward toward a new landscape of communications"

- Rudy VanderLans, Emigre magazine designer/editor (1955)

Emigre's approach: experimental editorial design and work that is too experimental for other design publications

- Zuzana Licko, typeface designer (1961)

Licko (educational background: computer-programming)

- dissatisfied with the limited fonts available for the early Macintosh

Michigan's Cranbrook Academy of Art

Katherine McCoy (graphic designer) and Michael McCoy (product designer)

- cochaired the design department - pushing the boundaries of design
- emphasise experimentation while rejecting a uniform philosophy or methodology
- faculty believes students should find their own directions while interacting with others engaged in similar searches
- "tribal community, intense and immersive"
- design problem solving approach instead of rational, systematic approach to design
- emphasised invention and encouraged students to develop their own design philosophies and methodologies.

Deward Fella (1939)

- roots in American vernacular design and early modernist typography
- experimental
- David Carson



24-11. David Carson (art director) and Pat Blashill (photographer), "Hanging at Carmine Street," *Beach Culture*, a magazine focusing on West Coast watersports, 1991. Responding to the title of an editorial feature on a public swimming pool, Carson was inspired to "hang some type." 34 x 27 cm



24-12. David Carson (art director) and John Ritter (photographer), "Is Techno Dead?," *Ray Gun*, 1994. Text type and spatial intervals join with computer-manipulated photographs in a rhythmic melody of white and dark shapes. 30.4 x 25.3 cm

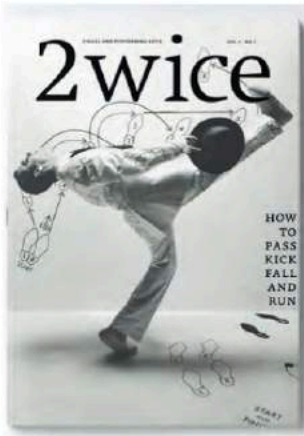
24-12



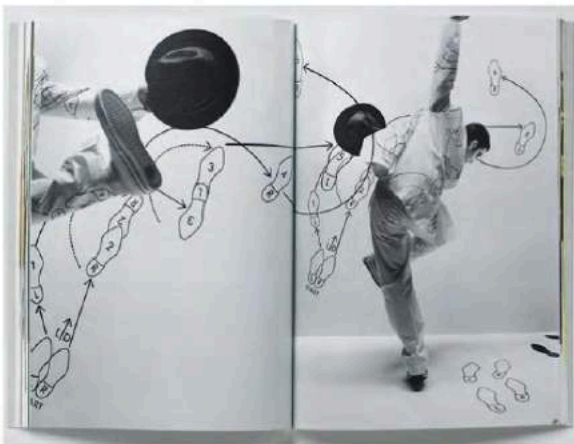
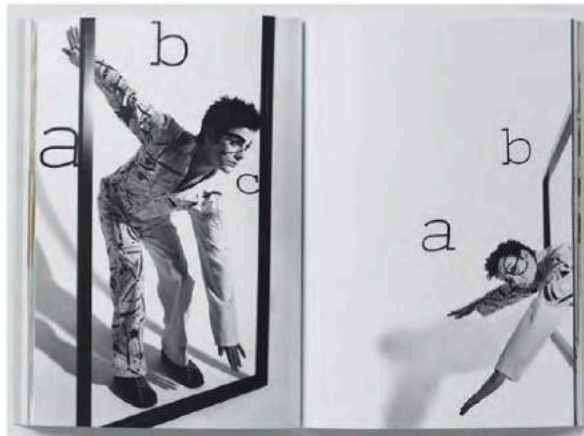
24-13. David Carson (art director) and Chris Cuffaro (photographer), "Morrissey: The Loneliest Monk," *Ray Gun*, 1994. The unusual photographic cropping and deconstructed headline convey the musician's romanticism and mystery. 30.4 x 25.3 cm

24-13

- Abbott Miller



24-20

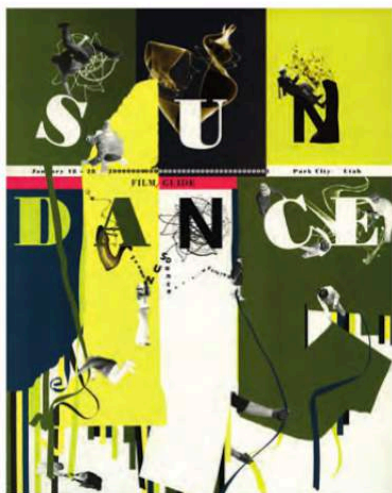


24-20. Abbott Miller, "How to Pass, Kick, Fall and Run," 2wice magazine, 2007. This issue was dedicated to Merce Cunningham's dance of the same name. Working closely with Cunningham, Miller transformed words and movements into a visual interpretation of the issue's content. The masthead was designed using the 1985 typeface Swift, created by the Dutch type designer Gerard Unger. 29 x 21 cm

24-21. Martin Venezky/Appetite Engineers, cover of the Sundance Film Festival Identity and Film Guide, 2001. 29 x 22 cm

24-22. Martin Venezky/Appetite Engineers, spread from the Sundance Film Festival program, 2001. 29 x 22 cm

Miller transformed words and movements into a visual interpretation of the issue's content. 2wice devoted to the visual and performing arts.



24-21



24-22

Martin Venezky (1957)

- intrigued by patterns, rhythm and structural qualities of letterforms
- style: collage material, digital images and altered or distorted type in his work
- skilfully combines handwork with technology

### Digital Type Foundry

Typesetting machinery manufacturers —> expensive

Font-design software for desktop computers became available

—> enabled designers to design and market original typefaces as electronic files on computer disks

Pros of this software: reduction in high cost of designing and distributing fonts

1990s:

Virtual explosion in the release of new typefaces

Due to Adobe Systems (prolific & influential digital type foundry)

Digital Imaging: creation of a digitally encoded representation of the visual characteristics of an object, such as a physical scene or the interior structure of an object

Early type family developed for its PostScript:

Stone

Designer: Sumner Stone (trained as a calligrapher and mathematician)  
(type director of Adobe Systems)

Stone family versions:

- serif
- sans-serif
- informal (share basic letterform proportions and structure)

By Carol Twombly:

Lithos typeface —> adopted for on-screen graphics by the MTV cable television channel

- became widely popular

Type foundries issue:

- designers who believed the TRADITIONAL VALUES should be maintained
- designers who advocated EXPERIMENTATION and even ECCENTRICITY.

**Dead History**  
**EX@CE+**  
**Keedy Sans**  
**Keedy**  
**Suburban**  
**Template Gothic**  
**Totally Gothic**

Filosofia  
Mrs Eaves  
24-27

Fonts above considered controversial in the past.

Licko designed two significant revivals for typeface:

- John Baskervilles's 18th century transitional fonts
- Filosofia - captures the spirit of modern-style fonts



1990s:

- Increased access to typography
- Experimental and novelty typefaces proliferated

Matthew Carter (1937) - important type designer of modern time

- learned to cut punches for metal type by hand
- designed scores of typefaces
- **\*typographic technology evolved from: METAL TYPE, PHOTOTYPE and DIGITAL TYPE.**
- ability to combine classic qualities with modern aesthetics and produces outstanding fonts that make profound references to earlier models

Frank Blokland (1959)

"Typography means more than bringing order to the passing on of information; it means elevating to the sublime the cold in which the process of passing on is cast"

### Digital Imaging

Photograph lost its status as an undisputed documentation of visual reality when electronic imaging software **allowed seamless and undetectable image manipulation.**

Boundaries between photography, illustration and fine arts began to disappear.

### Computer Communications

- took a major step forward with the development of Internet ( a vast network of linked computers)

origin: in the late 1960s by United States Department of Defense Advanced Research Projects Agency

function: could transfer data between sites working on similar projects

World Wide Web:

provides a means to easily organise and access the vast and ever-increasing content on the Internet

Examples: text, images, sound, animation and video

developed in 1990

by Tim Berners-Lee (physicist)

web started to take off in 1993!

### Digital Vanguard

Graphic design in the 1990s incorporated the digital process in complex visual combinations of information, architecture, media, technology and culture.

### Design for portable devices

Early 2000s

Beginning of a revolution in the way people connect with information and communicate with each other

Introduction of mobile devices:

phones that are connected to the Internet fuelled this change.

Over the decade - devices became sophisticated and their use commonplace

- linked to development of mobile technology and the devices themselves
- full capabilities are best taken advantage of by applications, or apps that are made specifically for them (design centered on user experience)
- Apple's iPhone (touch-based computing)

\*Printed publications have found a new lease on life through mobile web and applications.

\*Portable nature of devices makes them ideal platform for periodicals targeting an audience ON THE MOVE!

Examples of publications on social media (Digital content):

- include audio and video clips
- interactive graphics play to the strengths of touch interfaces
- responsive and interactive nature/platform

Applications of graphic design (Digital technology)

\*Motion graphics and film titles

Language of graphic design was transformed by the **integration of type and image** with the **time-based element of motion**.

—> \*created a new field: MOTION GRAPHICS

Description: extend the art of storytelling with ABSTRACT CINEMA & ANIMATION such as

- painting and scratching directly on film stock
- using stop-motion photography
- computers to animate graphic and typographic elements

Example:



Tusalava, 1929

Tusalava, LEN LYE 's first film, is a pioneer example of experimental animation. It is a unique combination of modern art and tribal art.

- Australian Len Lye's motion experiments - scratched images directly on film to create kinetic animation



Modern feature film titles - combining type and image in motion  
 Created by: Graphic designer Saul Bass  
 for director Otto Preminger's film Carmen Jones 1954

<https://www.youtube.com/watch?v=wD-YR-3KmyE>

Designer Maurice Binder (1925 - 1991)

Title sequence

- created classic openings for James Bond films beginning with Dr No. (1962)

Danny Young (1959)

- self-taught designer

- most influential TITLE DESIGNERS for FILM AND TELEVISION

examples:

opening sequences for many notable productions such as:

- HBO's Six Feet Under (won Emmy Award)

- Kiss Kiss Bang Bang (2005)

\*Typography & the Built Environment

Lisa Strausfeld (1964)

- explored and created new methods of presenting and interacting with complex data

- \*work involves the interaction of actual and virtual space

- focuses on digital information design projects (software prototypes, websites, interpretive displays and extensive media installations)

- \*training as architect —> incorporate the presentation of information into physical surrounds (the large-scale dynamic media display in the corporate headquarters of



**Bloomberg LP**) large-scale typographic treatments throughout the inter spaces —>  
Paula Scher & Lisa Strausfeld

- another example: In Newark, New Jersey  
Paula Scher —> painted the Lucent Technologies Center for Arts Education white and then placed words over the entire facade  
why?: communicating the energy and dynamism contained within

### \*New Typographic Expression

- \*Shuichi Nogami (1954)
- creates posters using expressionist typographic forms
- often takes surprising letters and photographic images and combines, overlaps, merges and stretches them into experimental letterforms that float as 3D objects on the page  
Example: for a poster promoting an architect working with wood in Japan  
Style - combined letterforms and stretched their shapes into a wooden sculpture floating in space

Leading figures in contemporary Swiss graphic design

- Ralph Schraivogel (1960)
- \*Melchior Imboden (1956)

Imboden style: arranges elements of simple, geometric compositions through minimal and decisive use of color to create bold, visually arresting and illusionistic typographical abstractions.

expressive work combines: penetrating and rhythmic use of space with abstraction, repetition, flat geometric planes of colour and experimental typography.

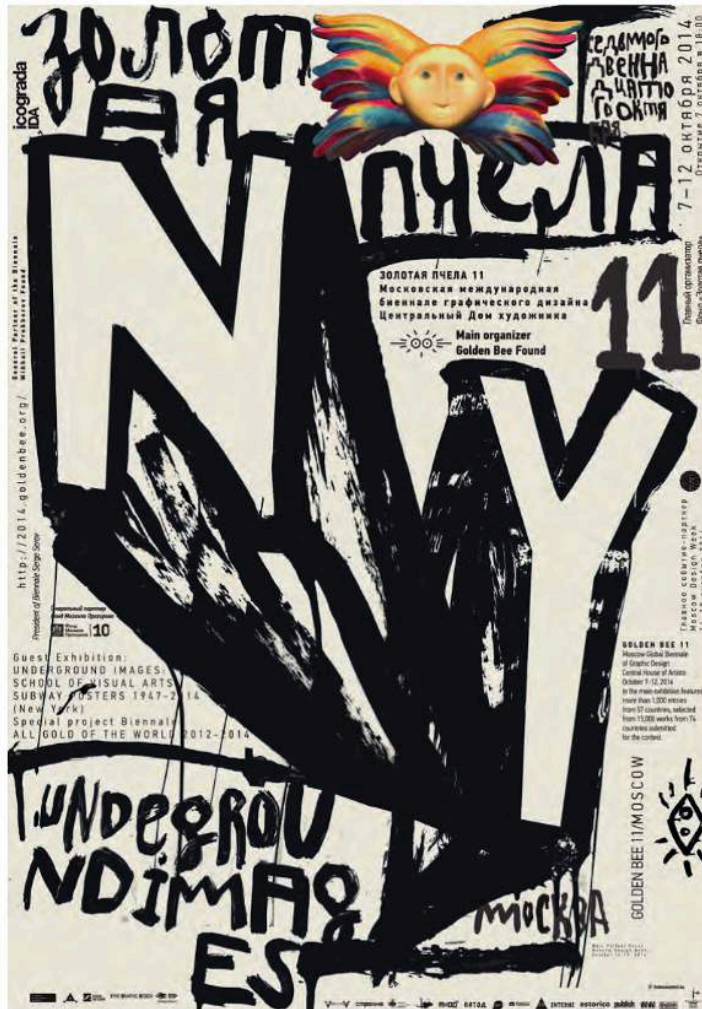
### \*Catherine Zask (1961)

- contemporary French graphic designer
- style: exhibit a fluid elegance and expressive style of both word and letter that are constructed by typographic forms converted into written symbols.

### \*Peter Bankov

unique visual language built into the posters often combines hand drawing, coarse texture, vibrant colors, collage, photography, and layers with drawn digital elements resulting in highly expressive visual communication solutions

- contemporary street art
- galleries
  
- hand drawing, coarse texture, vibrant colors, collage, photography, and layers with drawn digital elements



24-83

24-83. Peter Bankov, "NY SybanksA," poster for the retrospective exhibition Underground Images: School of Visual Arts, New York City Subway Posters 1947-2014, Moscow, Russia, 2014. 70 x 100 cm

24-84. Hans Dieter Reichert. Cover and jacket for baseline magazine, 2000 and 2001. 34.7 x 24.5 cm

24-85. John Warwicker, poster for Tokyo Type Director's Club, 2007. His typographic constructions retain vestiges of futurist poetry. 94 x 66 cm

NY SybanksA - poster for the retrospective exhibition

retrospective



-\*Skolos Wedell

A studio by an American graphic designer - Nancy Skolos and photographer Thomas Wedell

[https://en.wikipedia.org/wiki/Nancy\\_Skolos](https://en.wikipedia.org/wiki/Nancy_Skolos)

studio's primary format: poster after experimentation in a variety of formats

\*Work: pushing the boundaries of art, design and technology with a distinctive vision to find connection among disparate forms.

<https://designobserver.com/feature/nancy-skolos--thomas-wedell-connectivity-through-aesthetics/39551>



Light of Hope, 2005  
to design a poster that could raise funds to send to Indonesia after the country was devastated by a tsunami in 2005. In their final design, "Light of Hope" played with the duality of on the one hand, human crisis, and on the other, hope and humans helping each other by depicting hands reaching through the destruction and across the page to each other.



Coexist, 2015

"Metaphors come from convention, but we like to extend that convention through abstraction," said Skolos. (Such as with shadow and repetition rather than direct visuals.)

To be Human, 2012

By bringing reason and subjective emotions together on a picture plane, that's what we hope happens—that people will expand their point of view. We don't depend on the trend of reaction. We allow people to discover themselves through the piece. That's the humanity of it—meeting other people."

\*Mirko Ilic (1959)

- exploited the computer to design word-image pieces in book designs and op-ed pieces for the New York Times

Style: using design & illustration - both devices of visual analogy to communicate ideas

- \*uses computer to develop an immediate and detailed style

Example:

Elvis + Marilyn 2X Immortal

text shaped as the iconographic signs +, 2, X signs used in the title.

style: Apollinaire shaped negative space and text painstakingly, using hand-set type

- challenging text designs

\*Wladyslaw Pluta (1949) - Polish graphic designer

- skilfully uses type to evoke the content of his designs

- style: humour, expressive colour and the attempt to play "intellectual games with graphic design education"



Conclusion:

1980 -

Access to high-end computers and early desktop microprocessors enabled designers to begin exploring new digital realms that continue to transform the communications industry today.

\*(Digital revolution and advanced tools transformed the communications industry)

\*—> transformed typography, editorial and digital imaging drastically as we have more tools to push the creative boundaries

\*though tools of graphic design are evolving with advancement of technology crucial essence of graphic design remains the same - to give order to information and form to ideas and expression.

\*As designers —> encouraged to define the new aesthetics of electronic media

- lead the way to new and more effective approaches to this profession
- horizon of design industry expanded
- adapt to new technology to express 'Zeigeist' - German philosophy of "spirit of times" by inventing new forms and ways to convey ideas
- why graphic design is important? - need for clear and imaginative visual communications to relate people to their cultural, economic and social existences.

Summary slide

- Pioneers embraced new technology despite people rejecting it during its infancy phase,
- \*Digital revolution and advanced tools for graphic design transformed the communications industry (typography, editorial and digital imaging)
- \* transformed typography, editorial and digital imaging drastically as we have more tools to push the creative boundaries
- Despite advancement of technology and horizon of design industry expanding - \*crucial essential of graphic design remains the same - to give order to information and form to ideas and expression.
- adapt to new technology to \*express 'Zeigeist' - German philosophy of "spirit of times" by inventing new forms and ways to convey ideas
- why graphic design is important? - \*need for clear and imaginative visual communications to relate people to their cultural, economic and social existences.