Beyond Encoding: A Critical Look at the Terminology of Text Graphics

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Text art, character art, micrography, artyping, ASCII art, visual poetry, text mode art… There has been a variety of terms to describe visual works with typographical symbols over the past centuries. These terms have been based in aesthetics, artistic movements, and religious beliefs, but most of the terminology used today derives from technological concepts in general, and character encodings such as ASCII, PETSCII, and Shift-JIS specifically. A character encoding, simply put, assigns a code to each character so that it can be easily transmitted and decoded. A lowercase 'a' is encoded as 97 by ASCII and Unicode. EBCDIC encodes it as 129 and PETSCII encodes it as 65.

Technically speaking, it is crucial to identify the encoding in order to display text graphics correctly, which has led to genres like ASCII art, Shift JIS art and PETSCII art. But how relevant are they for aesthetic and cultural purposes? I first started to ponder this question while collecting and categorizing works for the blog Text-Mode.[1] *Browsing through tens of thousands of images of text graphics it became increasingly problematic – sometimes impossible – to identify the character encoding. Was this 1960's print-out made using ASCII, EBCDIC, Baudot, Morse Code, or some other way of encoding?*[2] *And if the encoding is unknown, how should the work be categorized? Perhaps there are more relevant criteria for categorizing text graphics?*

Keywords: ANSI art, ASCII art, PETSCII art, text art

[1] See http://text-mode.tumblr.com/.
[2] There are currently 174 encodings listed at http://en.wikipedia.org/wiki/Category:Character_sets.

In popular terminology ASCII art is often used as an umbrella term, including works that has little or nothing to do with ASCII: typewriter works from the 19th century (when ASCII did not yet exist), twitter art (which uses Unicode's UTF-8 encoding, not ASCII) as well as video-to-text conversions as seen for example in The Matrix (where the encoding is unknown or even non-existent). What matters here is the visual appearance, not the modes of production.

As such there are two opposing uses of the term ASCII art. In its broadest sense, it can be understood as a popular genre based on visual aesthetics, detached from technology, that changes across time and space. The stricter meaning mentioned earlier is based on technological determinism to essentially make an objective claim that any graphics made with ASCII encoding is ASCII art.

The purpose of this text is to give a brief overview of ASCII, ANSI, PETSCII, Shift-JIS and Unicode art and how these concepts have been shaped by technology, culture and aesthetics, to discuss alternative categories for text graphics that can be relevant also in the future, when these character encodings have possibly been made obsolete.

The Materiality of Text Graphics

Strictly speaking, character encoding does not say anything about the appearance of the work. An ASCII-encoded work can be displayed with a colourful vector typeface of warning signs or other pictograms, printed in high resolution on gigantic posters. A work like this would hardly be labelled ASCII art unless the production process and the encoding was known, if even then. This is not to say that materiality does not matter, but it needs to be refined beyond encoding.

The model below is useful for studying computer-based text graphics, but can also be applied to text graphics in media such as typewriters, books, and video where the encoding can be irrelevant. As such, the model caters for both generic pop cultural perspectives, and highly specific materialist studies. It is based on the model in Carlsson & Miller (2012) and identifies seven layers: from the perception of the viewer, through media and formats and aesthetics, to the abstract set of symbols that precedes the encoding into a character map.

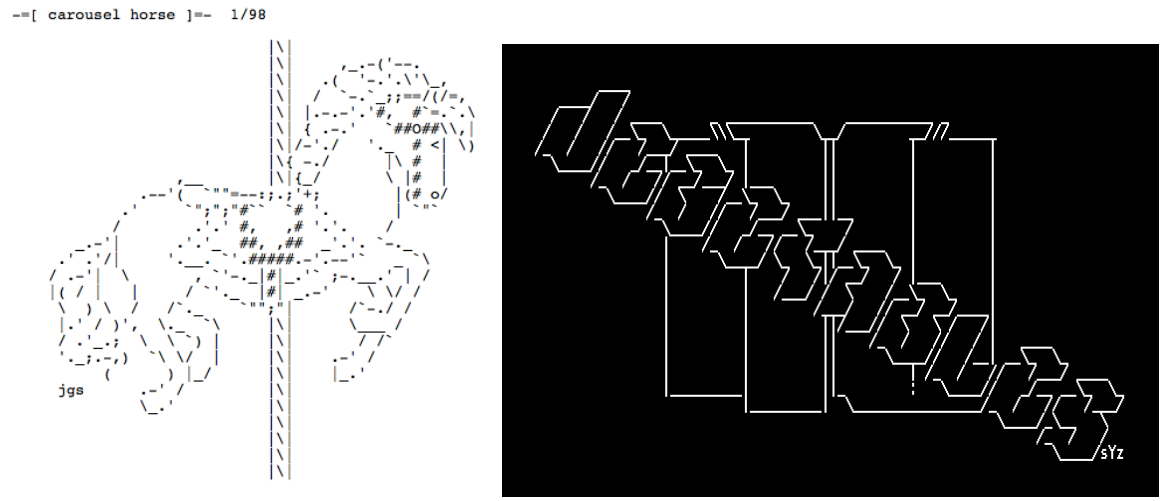
7. Perception	How, where and when the text graphics is perceived.
6. Display	Medium (screen, paper, textiles) and its characteristics (aspect ratio, resolution, colours, artefacts).
5. Format	Storage and protocols (txt, doc, markup, images, movies, control characters, metadata, code).
4. Design	Typeface (design, resolution, scale, fixed or variable width) and typography (grid-based, colours).
3. Production	Platform (computers, typewriters, paper), interface (keyboard, mouse, apps), techniques (manualism, conversion, drawing, characters used), context (subcultures, art, mass culture).
2. Encoding	How a selection of symbols are organized into a character map (see Whistler, Davis & Freytag 2008).
1. Symbols	An abstract set of symbols of a system (language, alphabet, ISO graphical symbols).

The text graphics model.

ASCII Art

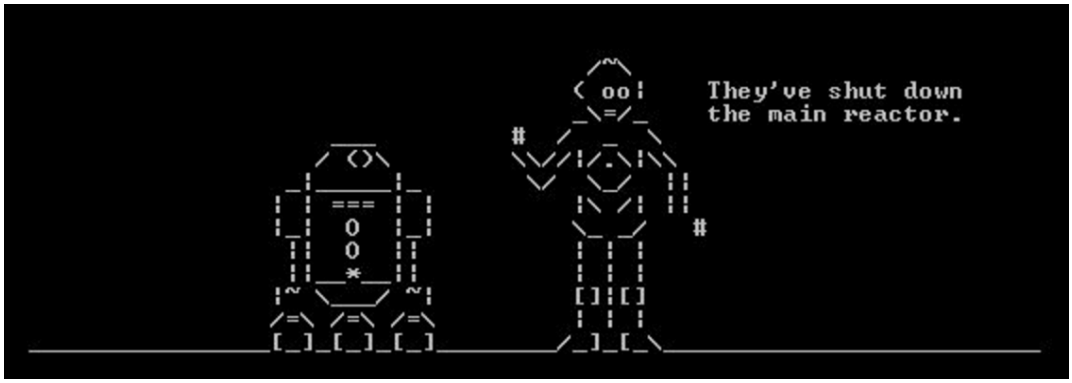
In a strict sense, ASCII art should only use 96 of the 256 characters in the ASCII standard.[3] In 1990's internet Usenet groups such as *alt.ascii-art*, this was strongly enforced because other characters would not display correctly, and could crash the viewer's system.[4] This encouraged an alphanumerical aesthetics of predominantly line-based text graphics, sometimes referred to as structure-based (Xu, Zhang & Wong 2010). The works were made for monospaced and monochrome typefaces and were often figurative interpretations of animals, faces and objects.

[3] The early versions of ASCII were 7-bit, containing 128 characters of which 32 were non-printable control characters.
[4] See for example the *alt.ascii-art FAQ* at http://www.ascii-art.de/ascii/faq.html.



Western ASCII art. Usenet-style on the left by Joan Stark (1998) and scene-style to the right by Stylez (1995).

ASCII art had a similar basic meaning in the so called scene (see Albert in this issue), although it used low-res pixel fonts and often looked more similar to graffiti and logotype design than the Usenet ASCII art did. But there were, and still are, conflicting opinions in the scene about what constitutes "real" ASCII art. One such conflict concerns typefaces, especially between PC and Amiga text artists. Amiga ASCII is displayed with Topaz or similar fonts[5] where the slash and backslash characters – / and \ – join together with little or no gap when positioned next to each other (as seen in Stylez' piece). This is not the case on PC where the MS DOS font is used. As shown in Simon Jansen's piece, there is a gap between the characters which is one of the reasons why Amiga and PC ASCII art is incompatible with each other, and why they each developed different aesthetics.



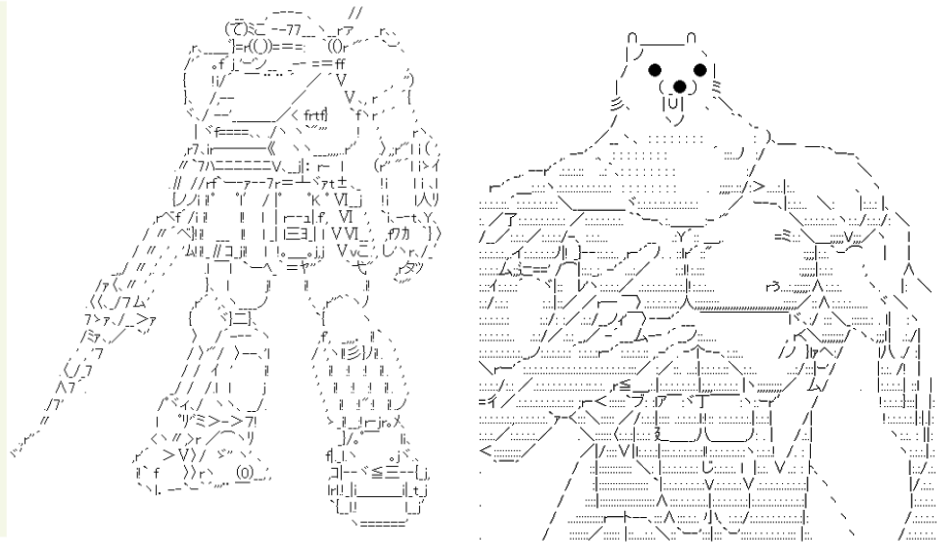
Star Wars ASCII art by Simon Jansen.

[5] Amiga ASCII-artists developed Topaz-like fonts especially for ASCII art, such as *mO'sOul* by Desoto, *P0T NOoDLE* by Nudel and *B-Strict* by Mortimer Twang.

Another conflict concerns works that use more than the original 96 characters, which many do. These works are often labelled as block ASCII, extended ASCII, or high ASCII, while die hard critics might dismiss it as “not real ASCII” since it uses more than the original 96 characters. There is a particularly strong divider between ASCII and ANSI art (see below) in this sense, although they both use the same typeface and encoding.

Shift-JIS Art

What is called ASCII art in Japan, AA for short, is usually called Shift-JIS or SJIS art in the West. It is made with Japanese characters encoded in either Unicode’s UTF-8 or in a Japanese encoding such as Shift-JIS or EUC, displayed with fonts such as MS PGothic or Mona. With a much larger character map than Western ASCII, as well as a variable width vector font, Japanese ASCII art is distinctly different from its Western equivalent. As demonstrated in the pieces by Illiozilli and Runte0531, it is possible to create more fine details and complex shapes, compared to Western ASCII art.



Japanese ASCII art. Robot by Illiorzilli (2013) on the left, and muscular Pedobear on the right by Runte0531 (2013).

It should be noted that ASCII art is a more popular phenomenon in Japan compared to many other countries. Popular memes such as Pedobear and Mona originate in text-based web boards such as 2channel, and even appear in mainstream culture. Another mainstream form of ASCII art is kaomojis, a more intricate (and horizontal) equivalent to emoticons such as :)

in the West. You might have seen happy faces such as (* ^ ω ^) or the table-flipping kaomoji (╯°□°)╯ ┻━┻ or the Lenny Face: (͡° ͜ʖ ͡°). As such, ASCII art is common in online culture and is often copy-pasted and remixed by anonymous authors, which makes it possible for a different kind of perception and contextualization, compared to the West.

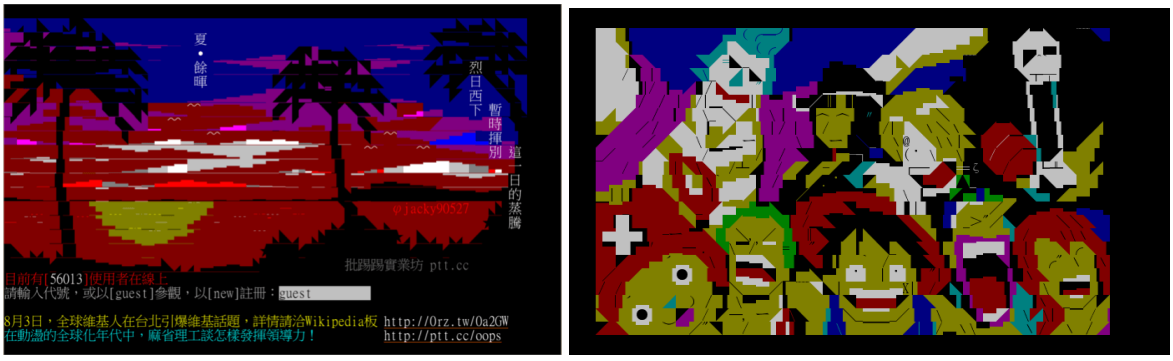
ANSI Art

From an aesthetic perspective, the main difference between ANSI and ASCII art is that ANSI uses colours. Both use the same typefaces, character map, tools and resolution but each text character in ANSI art can have two colours: one background colour and one foreground colour for the text character itself.

On the Amiga, colours are mostly used to colourize traditional line-based ASCII art, which is sometimes called Amiga ANSI. PC artists however, developed a distinct style using shading characters, from ▉ and ▓, ▒, to ░. ANSI art often focuses on these shading characters which makes it appear similar to pixel graphics, especially when using a higher resolution (more than 80 characters wide). Consequently, ANSI art is often misperceived as a form of pixel graphics rather than text graphics.

ANSI by Judas/Blocktronics (2015).

In Taiwan there is a thriving ANSI art scene at the popular text-based bulletin board system PTT. It is ranked as 860 on the list of the world's most visited sites[6] and makes extensive use of ANSI graphics. It uses a Chinese character map with a much larger selection of blocks compared to its Western equivalent. This has spawned an aesthetic that is not focused on the shading characters, but rather on the geometrical full colour blocks as demonstrated in the images by jacky90527 and else.



Chinese ANSI. Left: login screen for PTT by jacky90527. Right: by else (2013).

PETSCII Art

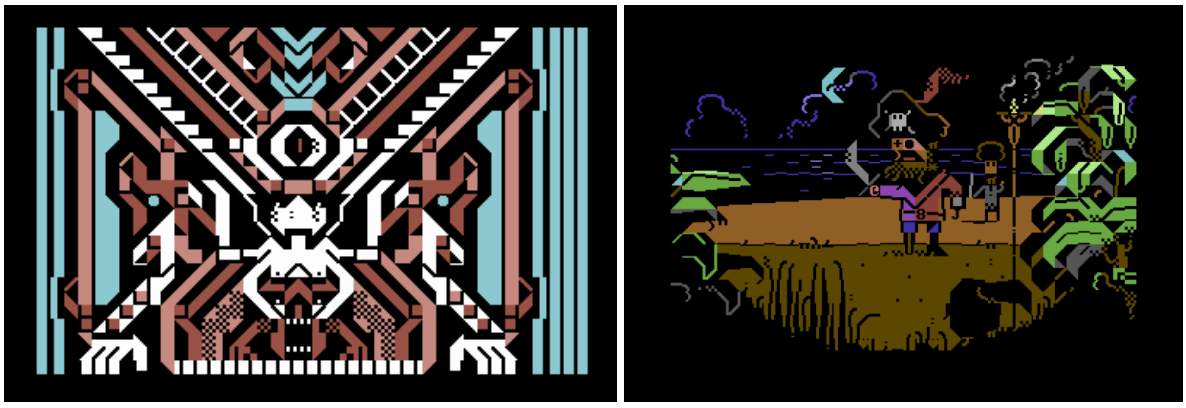
PETSCII is a character encoding developed by Commodore for 8-bit computers such as the PET-series and the Commodore 64. Today, PETSCII art usually refers to graphics made with the built-in typeface of the Commodore 64. The typeface has a large selection of semi-graphical characters like circles, blocks and triangles which makes it possible to create gridded mosaics in a similar way to ANSI.

Unlike ASCII and ANSI, PETSCII art was not released as separate artefacts in its own scene. Up until the early 2010's PETSCII-graphics was only scarcely documented online, which changed after an increased interest for PETSCII around 2013. New programs to create PETSCII graphics were launched for modern computers with options to save the graphics as common image files and not only C64-specific formats.

All these conditions helped to to broaden the interest for PETSCII as a creative medium, as more detached from technical and subcultural norms than ASCII and ANSI is. PETSCII

[6] http://www.alexa.com/siteinfo/ptt.cc.

graphics, in some popular understandings, is just a typeface organized in a grid, presented as images and GIF-animations online. In the Commodore 64 scene on the other hand, there are still discussions about what constitutes "real PETSCII".[7]



PETSCII by Raquel Meyers (2015) on the left and Redcrab (2014) to the right.

Unicode Art

Unicode's UTF-8 and UTF-16 encodings are used in a majority of operating systems, platforms and websites today. As of version 9.0, Unicode covers more than 128,000 characters from scripts and symbolic systems from around the world. For text artists in countries like Japan where there were several incompatible standards, Unicode was welcomed as a unifying standard.[8] Even so, it seems rare to talk about "Unicode art". ASCII art or AA still seems to be the dominant terms in Japan. In the West, it is even more rare to talk about Unicode art. A possible reason for that is that Western text graphics established itself before Unicode became mainstream, and now Unicode lacks support for those traditions.[9]

There are indeed few indications that Unicode art will replace ASCII art as a popular umbrella term in the West, even if most new text graphics technically is Unicode. But perhaps the future ASCII and PETSCII-artists will use Unicode art to describe "the other", non-traditional, text graphics; works that require more characters, colours, vector graphics,

[7] "If you can print it, it's PETSCII" was the slogan of the *Plain PETSCII Graphics Competition* in 2013, which essentially limited the use of characters.
[8] Japan uses several incompatible encoding standards such as JIS, Shift-JIS, Unicode and EUC and there is no de facto standard.
[9] Unicode does not include characters from e.g PETSCII, MouseText, Videotex, Teletext, ATASCII, Amiga ASCII, or SharpSCII.

and Unicode functionality: Japanese ASCII art, Chinese ANSI, Twitter art, emoji art or experimental text art such as *Glitchr*.

Final Discussion

The categorization of text graphics a complex mix of culture and subculture, place, and technicity, as this text have shown. Categories like PETSCII, ANSI and Teletext are named after the encoding, although it is the low-res typeface and its characteristic semi-graphical characters that is the key identifier, in most contexts.

Other categories are based more on which characters that are used. When an ASCII artist in the East or West uses alphanumerical characters and focuses on lines rather than blocks, it is usually considered to be ASCII art, both in popular culture and in more specific scenes. But when ASCII artists – again, both in the East and the West – focus on geometric or block characters instead of alphanumerical characters and lines, it gets more complicated. The scene uses a number of fuzzy concepts based on either technology or aesthetics or both, to categorize it. In popular culture these works are sometimes even called pixel art in lack of better words. This style has also been called tone-based, as opposed to structure-based (Xu, Zhang & Wong 2010).

Here I suggest the term text mosaic to describe these works. As an aesthetic concept, I have found it useful to group together the blocky aesthetics typical for text graphics made in eg ASCII, ANSI, PETSCII, Unicode, Shift-JIS, Teletext, as well as the text graphics of many 1980's 8-bit computers. These works are less concerned with alphanumeric and box-drawing characters and instead focuses on solid block elements such as ▉, ▄ , and ▙, geometrical shapes like ◢ or ●, and shading characters characteristic for ANSI art: ▓, ▒, and ░. Text mosaic uses the same material underpinnings as ASCII art but has a distinct aesthetics that is visually akin to tile mosaics, ancient woven or knitted crafts, and painted minimalist works from the 1960's. As such, it opens up new historical, cultural and aesthetic connections compared to the usual typographical ones.[10]

[10] See for example Danet (2003) who connects text graphics on Internet Relay Chat (IRC) with textile traditions such as quilting.

Examples of text mosaic. First in Shift-JIS by asciiart (2010), second in ASCII by Irokos (2017).

Throughout this text the term text graphics has been used as an umbrella term to refer to ASCII art, text mosaic and related phenomena. The avoidance of the art term is a conscious choice to connect text graphics to histories of crafts rather than art. One reason for that is that practitioners – since the early days of typographic ornamentation and typewriter works to recent days of scene art – have emphasized the role of skills and manual work over ideas, concepts and contexts.

Hopefully these terms, along with the text graphics model, can be helpful in future studies of text graphics that aim to combine both materiality, history, aesthetics and culture.

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