Slide 1
Welcome to stuff.jpg. A podcast about images and stuff.
My name is Holly St Clair, I am an illustrator and educator. Today I am joined by…

I am going to tell you a story about how and why computers look and feel the way they do. Voila: A Short and Flawed History of Graphics User Interfaces.

Slide 2
Before we start:
Much of the 'history' (in inverted commas) I am retelling today is what Roland Barthes would describe as mythology. There is a lot of folklore surrounding the early days of personal computers, and rather than debunking it, we're leaning in.

With that in mind, let's begin.

Slide 3
What is a computer?
It's a machine that stores information.
Once upon a time, that information looked like this…

Slide 4
Have you ever seen one of these before? This is an IBM punchcard. In the 18th c. this technology - card with holes in it - was developed initially for the manufacture of textiles. Pattern designs could be punched into cards and fed through mechanical looms.
By 1890, the US census was carried out using punch cards to store population data.
These were not interactive user experiences, however.

Slide 5
With the introduction of the keyboard and computer terminal, interactivity became possible.
This is an example of a command line system. You type a command, like 'print', hit 'fire', the computer goes beep boop and your information prints.
The appearance of the user interface is pretty spartan: one font, monotype for grid reading. The screens were cathode-ray tube monitors, very prone to screen burn (CLICK) so best to have the majority of the screen be 'off'.
It's interactive, but it's not intuitive.

Slide 6
In 1979, a young man named Steven 'Steve' Jobs and a pack of nerds from a small company called Apple visited Xerox PARC, the Palo Alto Research Center. They were on a quest. In return for stocks in Apple, the team would be shown something Jobs would later describe as the future of all computing.
(CLICK)
This is the Jobs Demo - or a 2014 recreation of the Jobs Demo. Would you like to describe what you see?

Point out:
- Window frames
- Menu - information laid out in columns
- Illustration made out of pixels
- Cursor shaped like an arrow head
Slide 7

Another example, this from the 6085 workstation. I'll read the blurb:

To make it easy to compose text and graphics, to do electronic filing, printing, and mailing all at the same workstation requires a revolutionary user interface design.

Bit-map display - Each of the pixels on the 19" screen is mapped to a bit in memory, thus, arbitrarily complex images can be displayed. The 6085 displays all fonts and graphics as they will be printed. In addition, familiar office objects such as documents, folders, file drawers and in-baskets are portrayed as recognisable images.

The mouse - A unique pointing device that allows the user to quickly select any text, graphic or office object on the display.

Slide 8

The graphics user interface used the 'desk top visual metaphor', which was logical but challenging. Most of the things listed in that blurb are flat rectangles. Particularly simplified for a low-resolution display.

So, all of the pages are dog-eared. Inboxes contain tiny envelopes, with stamps.

The benefit of this visual metaphor is that by placing an unknown within the context of the known you stabilise it. We've all experienced working with a technophobe who treats their PC like a horse. An unpredictable creature that will bite you if you touch it wrong.

Slide 10

There was a key design principle at Xerox PARC, they called it: WYSISWYG. 'What you see is what you get'.

The invention of WYSISWYG is another mythologised event. The legend is that in 1974 - and I have to say these names carefully - Karen Thacker - wife of Xerox hardware designer, Chuck Thacker - was shown an Alto running Bravo.

Slide 11

Bravo was a document editor - the appeal of which was that when you printed the document it would appear exactly as it did on a screen.You couldn't do this in command line editors. Karen was apparently a technophobe, and upon having the program and its workings explained to her she commented, 'You mean, what I see is what I get?' Thus the principle was born.

Slide 12

The Alto really only existed inside research labs and universities, partly because of the cost. Do you want to guess how much one of these bad boys was?

$32,000 or in today's money roughly $135,000.

But following the XEROX demonstration, Apple developed the Lisa with the intention of it becoming a 'personal computer'. It was made using the same ethos.

Slide 13

This is a promotional image demonstrating WYSIWYG. Do you want to describe it?

Fun fact: The Lisa was apparently named after Steve Jobs' daughter - a daughter he denied parenting. Chrisann Brennan, her mother, gave birth to the baby alone at a commune after leaving the home she shared with Jobs. She had to clean houses to make money. Jobs didn't turn up to meet his not-daughter until 3 days after the birth. And they named the baby Lisa together, with Jobs still insisting she wasn't his.

For years Jobs claimed the name of Lisa Computer was a coincidence - even creating a backronym: Local Integrated System Architecture. In his biography he admitted: Obviously, it was named for my daughter.

Slide 14
This is the GUI of the 'Lisa'. It's a little livelier than the XEROX: the bin lid is at a jaunty angle. The clipboard has a little ticket stub or something tagged to it. There's certainly more depth: drop shadowing, pixelation being used in a pointillist way. Corners are rounded.

There is an element of tautology too. Tautology (in language) is when you say something twice to re-emphasise in a way that's redundant but still meaningful - like saying, it was 9AM in the morning. Or the concept of ass-less chaps.
On this system preferences - the inner workings of the computer - are represented by the computer itself. You use the computer, but if you want to use the computer-computer, you must click on the computer.

And you can see the name 'Lisa' is everywhere - which seems to be a bit of a thing with early Apple. I'm not sure if it's branding or user friendliness.

Slide 15
The iconography of the Lisa is very prominent. This is a quote from John Siracusa, a programmer and early Mac user:
"Back in 1984, explanations of the original Mac interface to users who had never seen a GUI before inevitably included an explanation of icons that went something like this: "This icon represents your file on disk." But to the surprise of many, users very quickly discarded any semblance of indirection. This icon is my file. My file is this icon. One is not a "representation of" or an "interface to" the other. Such relationships were foreign to most people, and constituted unnecessary mental baggage when there was a much more simple and direct connection to what they knew of reality."
Which is interesting when you consider Baudrillard published Simulation Simulacra at a similar time. Simulacra are representations of things that mask the non-existence of the thing. A simulation is the imitation of a process or operation. The Matrix, basically.
What the computer becomes is an illusion - that the files and documents are real and that you can manipulate them in familiar predictable ways.
The illustrated icons were key to this. Which brings us to the concept of semiotics or semiology, the study of 'signs' or 'sign reading'. In semiotic terms: the image of the folder is what we call the signifier, the concept of your file on the disk is the signified, the combination of the two - the context - is the sign.

Slide 16
In the 1980s these personal computers became more accessible. And with that attempts to make computing accessible to Joe Bloggs who works at the office.

Slide 17
This is a cover for 'Magic Desk 1'. Do you want to describe the cover?
Discuss:
● Religious imagery
● Desert landscape
● Desk is like the obelisk in 2001: A Space Odyssey
● What hopes does it give you?

Slide 18

And this is how Magic Desk looked for real.
Discuss:
- What it looks like

Slide 19
This review from Run gives a little insight into how Magic Desk (and GUIs in general) were received:
"To type, the pointing finger is aimed at the typewriter, the fire button is pushed, and almost instantly one is greeted by a screen display showing a piece of white paper emerging from the top of what looks like a typewriter platen, complete with margin stops and a paper scale."
It goes on: "When reaching the end of the line, you must hit the return key (no word wrap) and the screen display whizzes by, simulating the actual carriage return on a typewriter. As you may note, this is a very accurate simulation of a typewriter - including features such as a carriage return, which I was glad to be rid of when I graduated from a typewriter to a word processor."
I like the idea that a word processor was sort of the enlightened man's type writer - the association is pretty much reversed now.
It's also fun that even then tech was presenting to them not a magical future but a reflection of their current reality but in a more boring and annoying way. Can't relate.

Slide 20
This article from Horizons talks about 'icon fever' - night fever's bureaucratic cousin - taking over home computing. The review of the Lisa praises it's usability and the 'user-friendliness' as a result of the GUI.
It also goes to show that nobody was buying the Local Integrated Software Architecture thing - "Insiders claim it was named after a girlfriend of Steve Wozniak, Apple co-founder". Poor Steve taking the fall a bit.

Slide 21
The next review is about Commodor's response: Magic Desk 1. You definitely get the sense that the Lisa user interface was causing other companies to scramble to come up with something similar.
Some choice quotes:
"Above this scene hovers a ghostly hand, your cursor."
"This is also where Magic Desk gets confusing. None of the icons are labeled, so it's like reading those pictorial traffic signs in a foreign country."
Anyway, now to talk about someone who was very good at designing icons.

Slide 22
This is Susan Kare, also known as the "woman who gave the Macintosh a smile."
Things to know about her: she had a fine arts degree and was also big into crafts. Everyone describes her as being really nice and funny, and I might have a bit of a crush on her.

Kare even has her own foundational myth: she was a sculpture artist, welding steel hog models together for a Natural History Museum, when her high school friend rang her up and asked if she would be willing to do some graphic design work in return for… an Apple computer. She was encouraged to buy a grid notebook and give it ago.

In reality, she did have to interview for the job. And she worked really hard to learn about bitmap graphics. But I do think her being an outsider was an asset, not a fault.
Here's something she said about pixel art:
"I still joke that there's nothing new under the sun, and bitmap graphics are like mosaics and needlepoint and other pseudo-digital art forms, all of which I had practiced before going to Apple."
You can see that here in a design for 'danger'...

Slide 23
She is plotting out the icon in the same way you would a cross-stitch or knit design. Here are a couple of lace patterns published in 1589.

Slide 24
The icons Kare was asked to make were small (32 x 32 px). Their meaning had to be clear to make the computer easy to use so as well as illustrating the symbols, she had to choose the *right* symbols. This is where her degree and fine art background benefited her: she took from art history, toys, gadgets, hieroglyphics, and existing iconography on things like transport and maps.

Slide 25
These are some options for 'jump'. You can see her working this out here - how to represent 'jump'? Frog? Skipping? (Americans would call it jump rope.)

Slide 26
The Apple GUI needed to be another thing too: friendly. This was the 'personal computer'.

Slide 27
And this is a baby that I think is just really precious.

Slide 28
Kare also had the task of developing type faces for the Macintosh. Again the background in embroidery and craft comes into play. This is a neat comparison between Kare's work and a textile sample.
(Jobs once took credit for the designing of these type faces - he did a calligraphy class in college.)

Slide 29
Kare produced portraits for Apple employees. The middle image is a programme made for Kare, so that she could work on bitmaps with a live image of how it would look to scale.
(Jobs even liked it! There's an interview I read that suggests she spent a lot of time emotionally maneuvering around him. Kare even followed him to NeXT after Jobs left Apple.)

Slide 30
Before we move on, one more bit of folklore. This is the story of the command key symbol. I'm going to quote Andy Hertzfield here:
"We thought it was important for the user to be able to invoke every menu command directly from the keyboard, so we added a special key to the keyboard to invoke menu commands, just like our predecessor, Lisa. We called it the "Apple key"; when pressed in combination with another key, it selected the corresponding menu command. We displayed a little Apple logo on the right side of every menu item with a keyboard command, to associate the key with the command."
"One day, late in the afternoon, Steve Jobs burst into the software fishbowl area in Bandley III, upset about something. This was not unusual. I think he had just seen MacDraw for the first time, which had longer menus than our other applications. There are too many Apples on the screen! It's ridiculous! We're taking the Apple logo in vain! We've got to stop doing that!"
It's difficult to come up with a small icon that means "command", and we didn't think of anything right away. Our bitmap artist Susan Kare had a comprehensive international symbol dictionary and she leafed through it, looking for an appropriate symbol that was distinctive, attractive and had at least something to do with the concept of a menu command.
Finally she came across a floral symbol that was used in Sweden to indicate an interesting feature or attraction in a campground."

Slide 31
That criticism of computer icons looking like 'foreign road signs' is actually kind of astute. The symbol itself is derived from a birds-eye view of a Swedish castle.

Slide 32
We've mostly focused on Apple's GUI development, and central to that is the idea of skeuomorphism. Skeomorphic design brings real world textures and visual elements into the digital interface. The desktop visual metaphor is an expression of that.
As image quality improved these elements were pushed to the extreme. For example, this is the Windows Media player from 2000ish.

Slide 33
Point out:
- Button texture - grippy elements that can be 'pulled'
- Metal/plastic
And this is a Sony Walkman from the same year…

Slide 34
Point out:
- Bubble shapes
- Colour
- Materials
Both of these examples are examples of a specific aesthetic that emerged in the 2000s and 2010s.

Slide 35
Retrospectively, this aesthetic has been named Frutiger Aero, a name coined by Sofi Lee from the Consumer Aesthetics Research Institute - a total wormhole if you ever find a spare afternoon. It's often called 'Web 2.0 Gloss' too. Fruitger Aero represented a kind of optimism for technology. Point out:
- 'Blobjects'
- Materials
- Weirdness

Slide 36
This is the GUI for Windows Vista launched in 2007. The theme was called 'aero' - do you want to guess what that stood for?
Authentic
Energetic
Reflective
Open

Point out:
- Materials
- Actual framework and foundation is very similar

Slide 37
Those were the good times and now we exist in the bad times. Everything has been shit since David Bowie died.

This is Metro design language - from Windows again. Quite a departure.

Slide

At Apple, Steve Jobs is dead. Jonathan Ive took over in 2013 and from that point onwards Apple shifted from skeuomorphism towards more simplified design.

Slide

We're hopping back in the time machine. And I am going to pitch to you a philosophical question…

Do all computers look like offices? Or do all offices now look like computers?

For example:

1970s

1980s

1990s
Y2K.

2000s
Millenial.

2010s
WeWork.

2020s?
Your office is your home, your home is the office. You carry a computer in your pocket at all times and everything is done 'online'.

Gen Z are the so-called "digital natives".

End?

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