

On the Uses of Computers in Art

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Introduction

What did computers bring to art?

- new tools,
- a new medium.

Our focus:

- How are they used?
- To what end?

1 The new tools

Henry's drawing machines
Verostko's expert system
Sims' genetic images

2 A new dimension: Interactivity

The emergence
Giving more control to the audience

The new tools

Computers are useful to most creative domains:

- graphical arts (design, digital painting),
- music, cinema (digital recording, editing, broadcasting),
- literature (writing, editing, publishing),
- video games, architecture, ...

Using computers to produce art:

- How?
- Why?

Three examples in graphical arts

1 The new tools

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Verostko's expert system

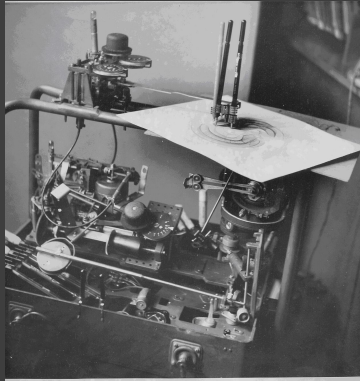
Sims' genetic images

2 A new dimension: Interactivity

The emergence

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Henry's drawing machines



Desmond Paul Henry, 1960

- Customized WWII bombsight computers
- Analog devices relying on gears and motors

Henry's drawing machines



Why use computers?

- Oppose mechanical feel and creative composition
- Focus on composition, not minute details
- Unreliable outcome: surprising, not reproducible

1 The new tools

Henry's drawing machines

Verostko's expert system

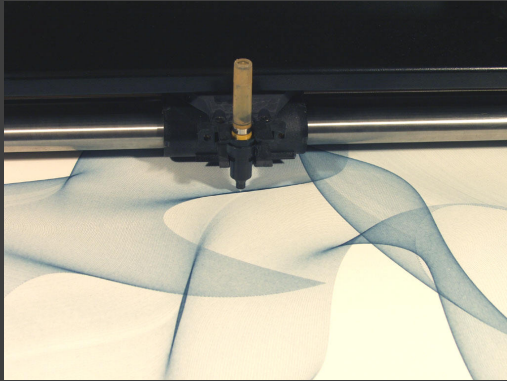
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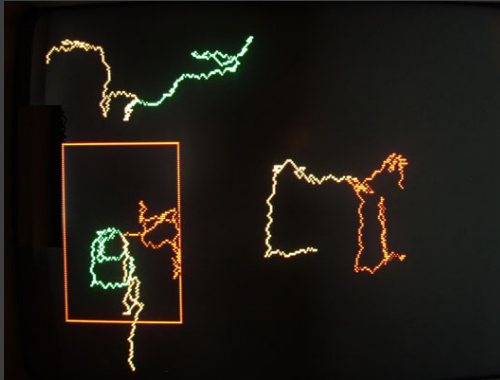
Verostko's expert system



Roman Verostko, 1988

- Uses modern digital computers
- Draws with plotters made for technical drawings
- Designed his own software called Hodos

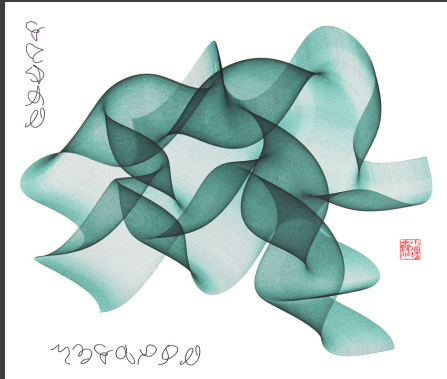
Verostko's expert system



How Hodot works:

- Setup control points and constraints
- Choose non-violating point, pen color
- Screen preview before plotting

Verostko's expert system



Why use computers?

- Same benefits as Henry's drawing machines
- Voluntary randomization allows innovation

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Sims' genetic images



Karl Sims, 1991

- Arc of screens with sensors
- Popular images reproduce themselves
- Offspring replace neglected images

Sims' genetic images



Why use computers?

- Genetic algorithm more suited to machines
- Real-time art creation
- Allow visitors to create by interacting

Part conclusion

How are computers used to produce art?

- combined with traditional support, or new media,
- programmed to produce artworks, or left alone.

Why use them?

- mechanical precision,
- fast execution,
- neutral randomization,
- new ways to interact.

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A new dimension: Interactivity

Computers are versatile tools

- Refine the execution of some works of art
- Ease the realization of others
- Open new uncharted art genres

But can they offer more?

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Before the computer

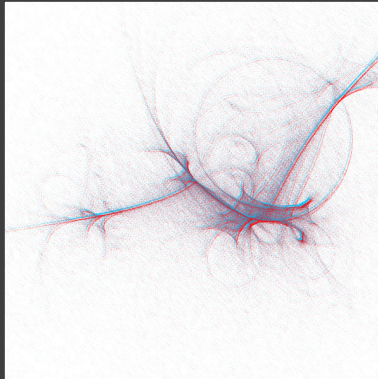
Before computers:

- Viewers/Listeners were passive consumers
- Interactivity was uncommon

The birth of interactivity

- During the 60's: wish to share the creative power
- A few experiments with mechanical machines

New tools for interactivity



- 1999 : Design by Numbers, too limited
- 2001 : Processing, the infatuation
- Today : derived languages like Arduino, Wiring...

Body Navigation - Ole Kristensen



- Two dancers and a projector
- The projected decor follows the dancers' movements
- Dynamic set

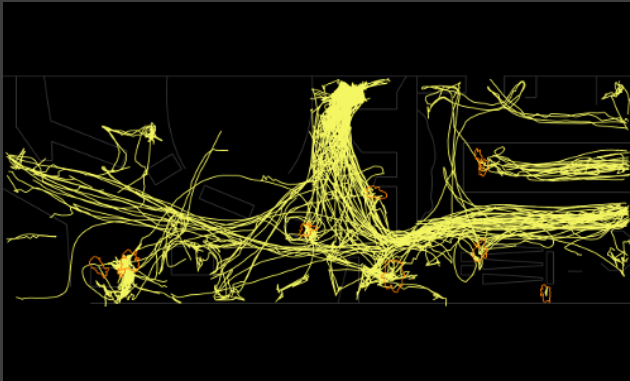
Body Navigation - Ole Kristensen



Why use computers?

- Made possible with Processing
- Each representation is unique
- The artists affect the execution

You Are Here - Eric Siegel



- Hanging cameras record the movements of unaware bystanders
- Their paths form a pattern
- Questions the role of electronic surveillance

You Are Here - Eric Siegel



Why use computers?

- Unrealizable by hands
- Direct link with the thematic
- The audience composes the piece

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Video game art

An evolving relationship between artists and audiences

- The artist conceives
- The audience manipulates

An appropriate medium to convey this evolution : video game

- Mix video, music
- Can be abstract or explicit
- Immersing
- Excellent for interactivity

The Graveyard - Tale of Tales



- As an old lady, walk through a cemetery
- Few possibilities: walking, sitting on a bench
- Distance from usual games: serious treatment, poetic but not amusing

The Graveyard - Tale of Tales



Why use video game?

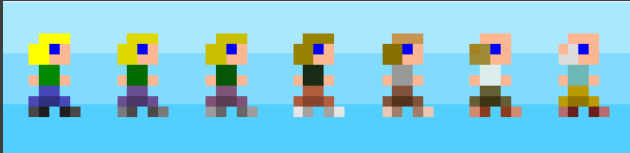
- Put the player in the shoes of an elderly person (slow pace)
- Emotionally engaging
- Possibility to interact with the virtual environment, unlike a painting

Passage - Jason Rohrer



- Goal: go forward to score more points
- The more you progress, the more you age
- Classic gaming elements: obstacles, mazes...

Passage - Jason Rohrer



Why use video game?

- Choice: go forward and ultimately die?
- Interactive story
- Unusual story on a familiar medium

Part conclusion

Computers offer a new artistic dimension : interactivity

- A more engaging way to present art works
- Roles have changed and audiences carry creative power too
- Pinnacle of interactivity: art game

Grand conclusion

What did computers bring to art?

- Powerful tools with many possibilities
- Enhancement of classical art forms
- A new way to expose art to the public

Thank you

Questions?