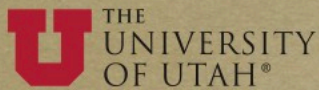
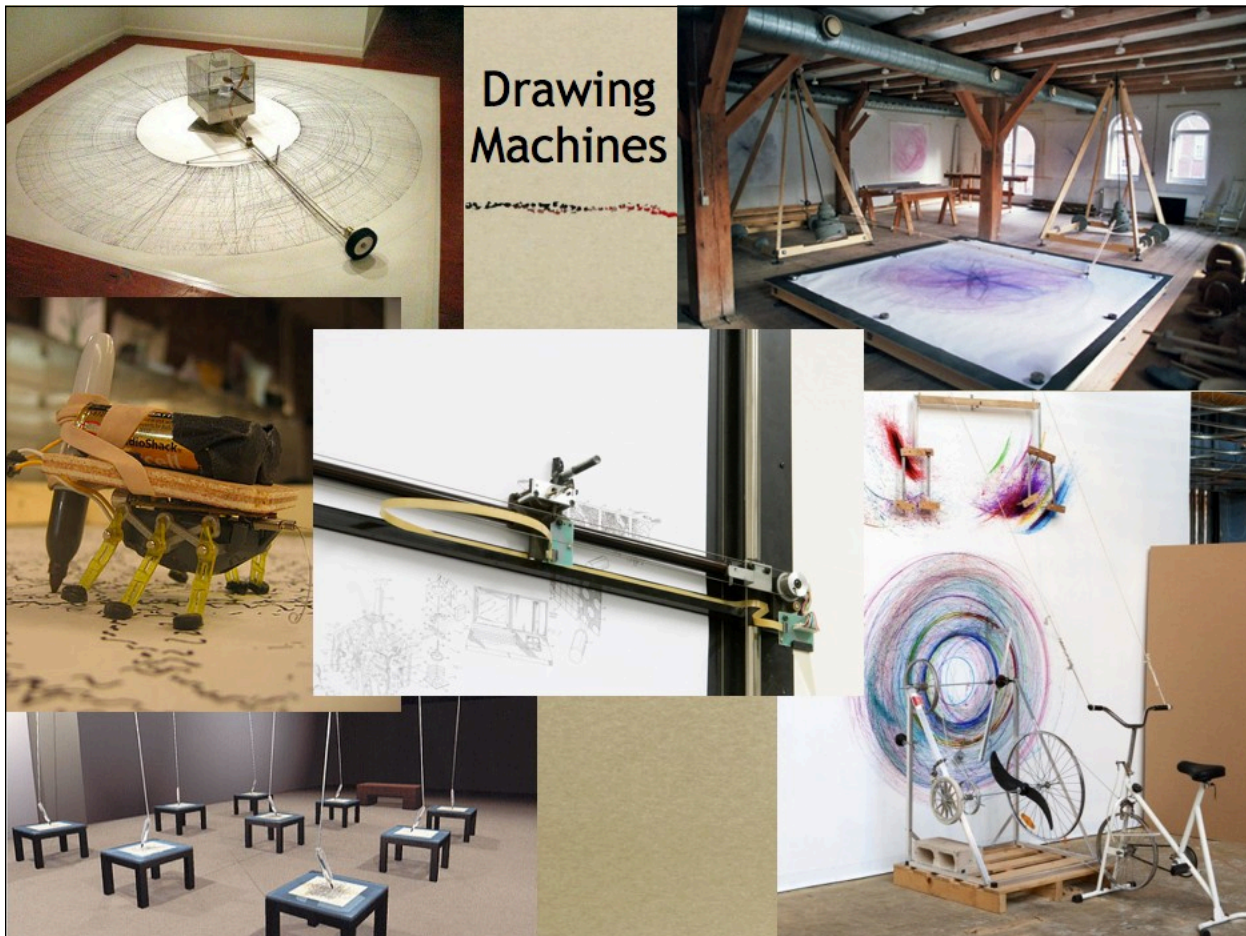


Automated drawing: Exploring the Boundaries between Print and Drawing



*Erik Brunvand
Saltgrass Printmakers
& University of Utah*



Automated Drawing

- ◉ Drawings made with mechanisms

- Repeatable?
- Controllable?
- Editionable?



<http://mlyon.com/>

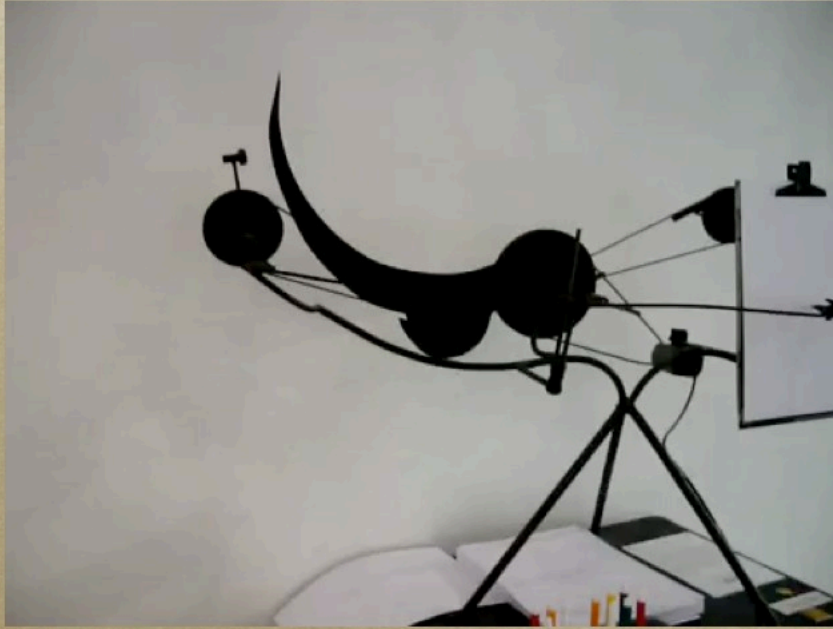
- ◉ Like print in many ways

- With the twist of directly drawing on paper rather than through a matrix...

This talk...

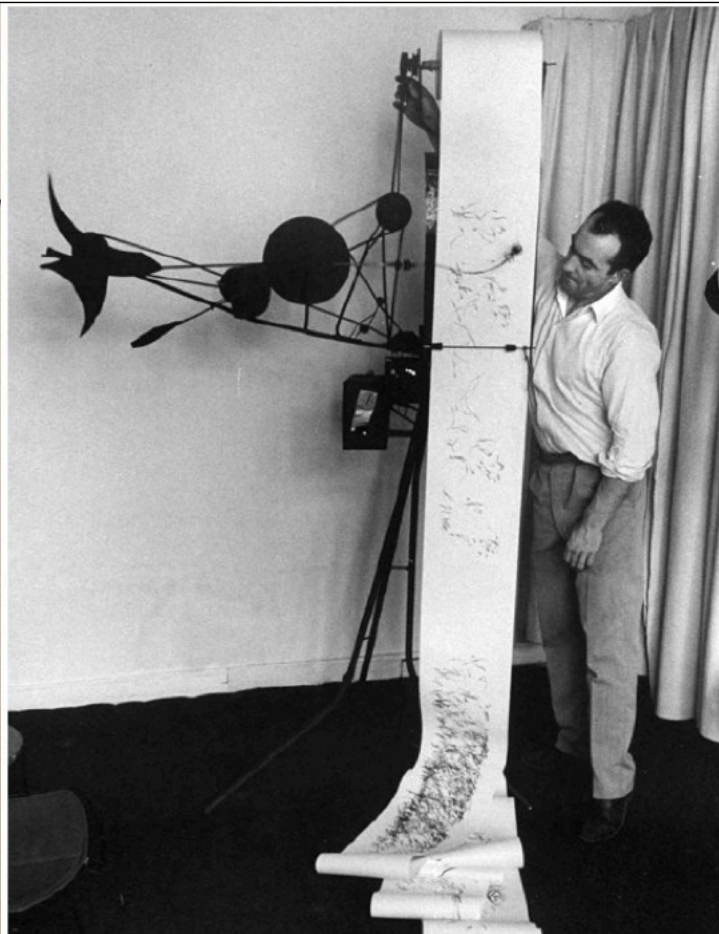
- ◉ Start with some images/videos
 - Whet your appetite
- ◉ Think about an automated drawing taxonomy
 - Time Line: historical, computer age, and contemporary
- ◉ Not intended to be comprehensive...
 - ... Get us thinking
 - ... Add to our repertoire/vocabulary
 - ... Encourage experimentation

Jean Tinguely: Metamatic



<http://www.youtube.com/watch?v=G0o5uq2fH6g>

Jean
Tinguely:
Metamatic
(1959)



Eske Rex, Denmark, 2011



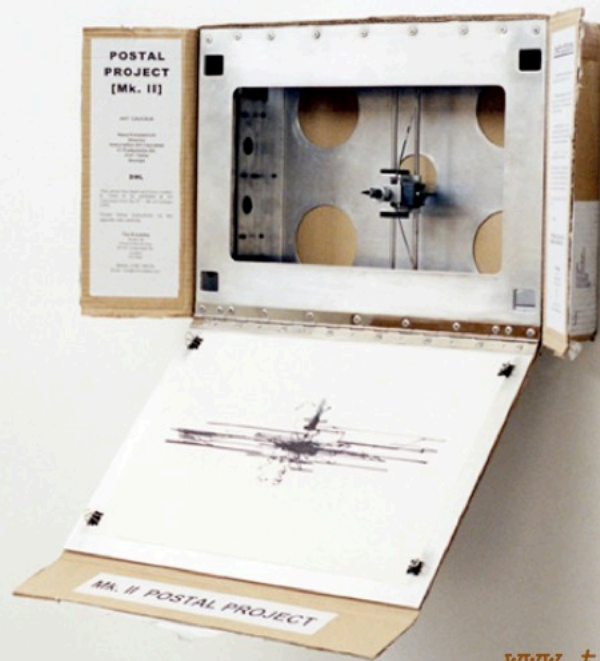
<http://www.happy-pixels.com/2011/07/08/drawing-machine/>

Eske Rex, Denmark, 2011

Designguide.tv

<http://www.youtube.com/watch?v=5yumD0ez0VE>

Tim Knowles, England, 2004



www.timknowles.co.uk

<http://www.bitforms.com/tim-knowles-gallery.html>

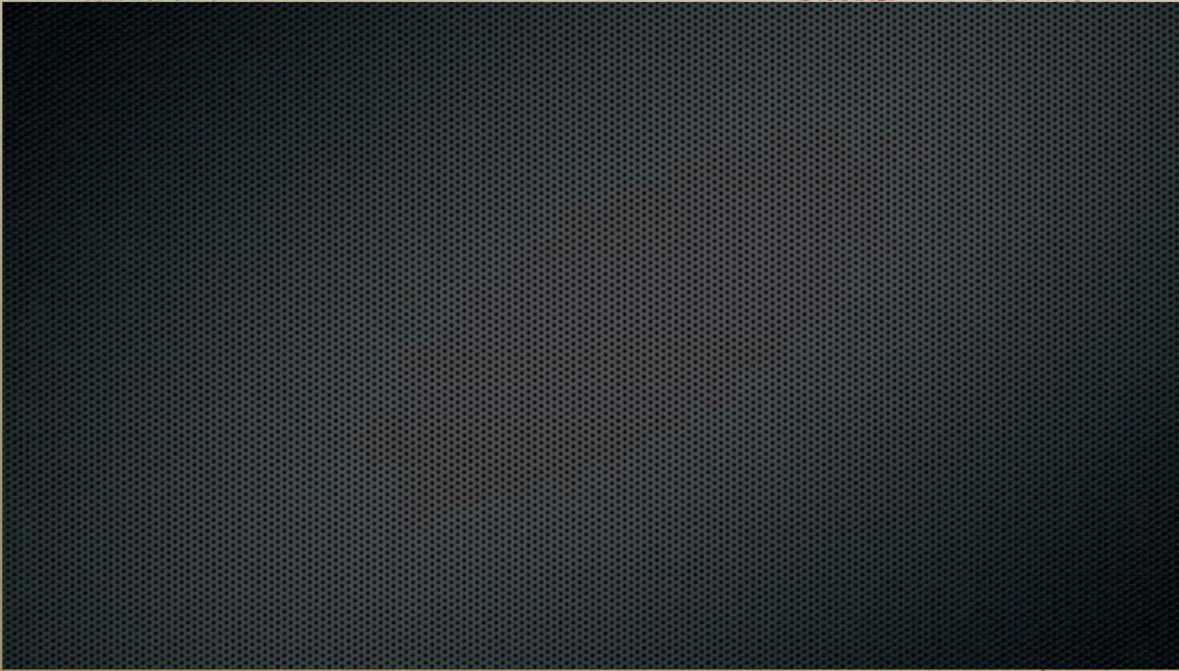
Tim Knowles, England, 2006



www.timknowles.co.uk

<http://www.bitforms.com/tim-knowles-gallery.html>

Erik Brunvand, 2013



www.cs.utah.edu/~elb

A Drawing Machine Taxonomy

<i>Control</i> <i>Image</i>	<i>Analog</i> <i>(mechanical)</i>	<i>Digital</i> <i>(electronic)</i>
Random	<i>Random marks with direct control of the drawing tool</i>	<i>Computer control, often using environmental input</i>
Deterministic	<i>Mechanical drive of the drawing tool</i>	<i>Computer programmed control</i>

A Drawing Machine Taxonomy

<i>Control</i> <i>Image</i>	<i>Analog</i>	<i>Digital</i>
Random	Tinguely Knowles	
Deterministic	Rex Brunvand	Lyon

A Drawing Machine Taxonomy

<i>Control</i> <i>Image</i>	<i>Analog</i>	<i>Digital</i>
Random	Tinguely Knowles Grossman	Bowen SADbot Robbins
Deterministic	Rex, Brunvand Henry Grossman Maillardet Jaquet-Droz	Lyon Tresset Hektor Twomey

A Time Line

- Historical: 18th and 19th centuries (automata)
 - Jaquet-Droz, Maillardet, etc.
- Early Modern: 1950's (Metamatics)
 - Tinguely
- Computer Age: 1960's - 1970's (printers/plotters)
 - Desmond Paul Henry, A. Michael Noll
- Contemporary: 1990's to Now (lots of artists!)
 - Some (Lyon, Grossman) included in portfolio
Homespun Technology showing at Impact8
 - Location: Rm 212, Crawford Bldg, JDCAD

A Drawing Machine Taxonomy

Control Image	Analog	Digital
Random	<i>Tinguely</i> <i>Knowles</i> <i>Grossman</i>	<i>Bowen</i> <i>SADbot</i> <i>Robbins</i>
Deterministic	<i>Rex, Brunvand</i> <i>Henry</i> <i>Grossman</i> <i>Maillardet</i> <i>Jaquet-Droz</i>	<i>Lyon</i> <i>Tresset</i> <i>Hektor</i> <i>Twomey</i>

Maillardet's Automaton, 1810

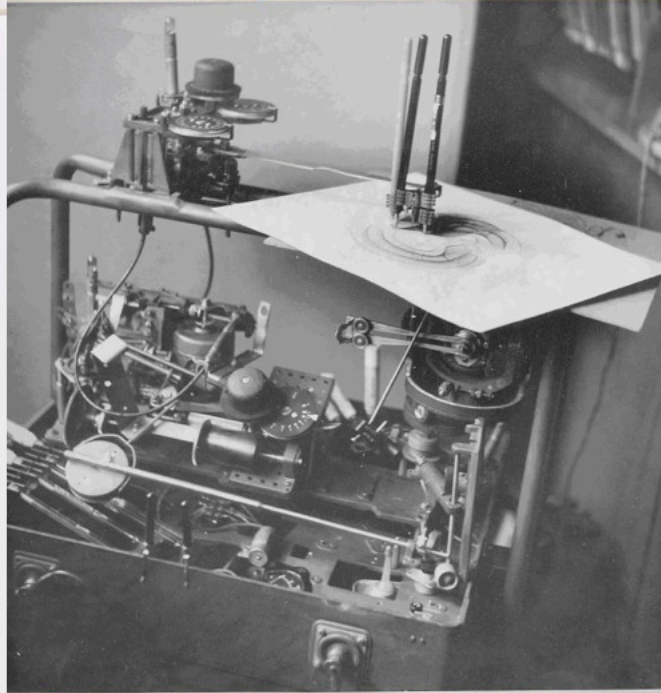


<http://www.fi.edu/learn/sci-tech/automaton/automaton.php?cts=instrumentation>

Maillardet's Automaton, 1810



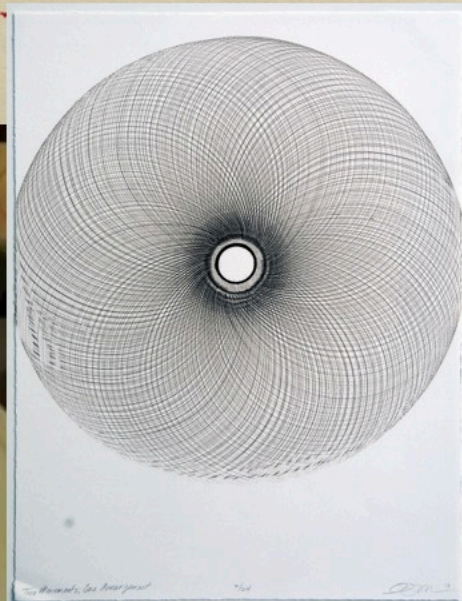
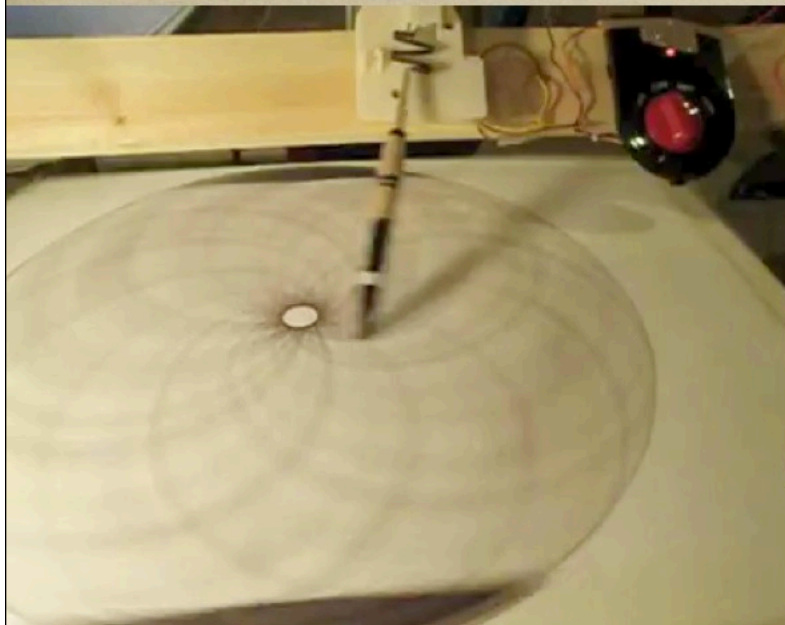
Desmond Paul Henry: 1962



[http://www.desmondhenry.com/
index.html](http://www.desmondhenry.com/index.html)

Leslie A. Grossman, 2012

Homespun Technology Portfolio
Rm 212, Crawford Bldg, DJCAD



leslieagrossman.com/

A Drawing Machine Taxonomy

<i>Image</i> / <i>Control</i>	<i>Analog</i>	<i>Digital</i>
Random	<i>Tinguely</i> <i>Knowles</i> <i>Grossman</i>	<i>Bowen</i> <i>SADbot</i> <i>Robbins</i>
Deterministic	<i>Rex, Brunvand</i> <i>Henry</i> <i>Grossman</i> <i>Maillardet</i> <i>Jaquet-Droz</i>	<i>Lyon</i> <i>Tresset</i> <i>Hektor</i> <i>Twomey</i>

Leslie A. Grossman: 2012



Leslie Grossman, 2012



leslieagrossman.com/

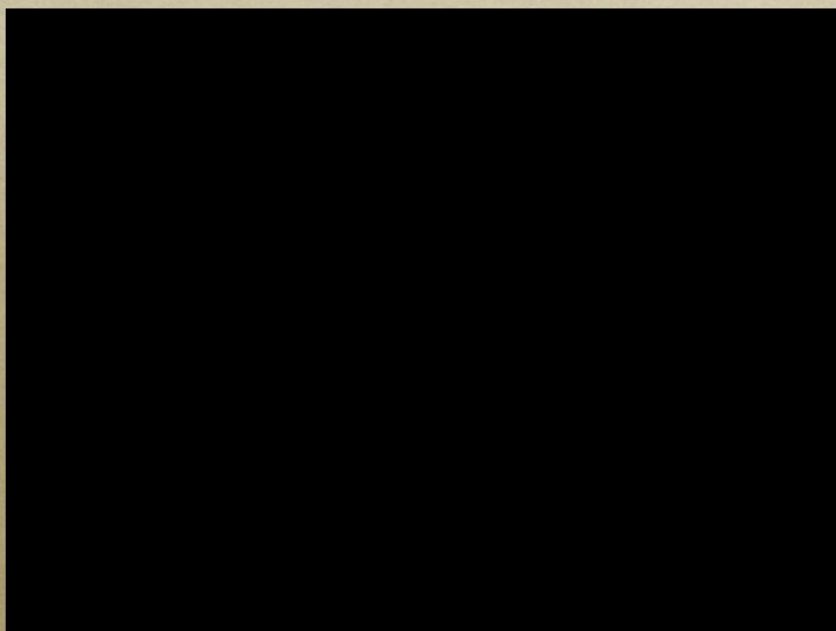
A Drawing Machine Taxonomy

<i>Control</i>	<i>Analog</i>	<i>Digital</i>
<i>Image</i>		
Random	Tinguely Knowles Grossman	Bowen SADbot Robbins
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Cameron Robbins, Australia



David Bowen, IR Drawing Device, 2003



<http://www.dwbowen.com/sonarmovie.html>

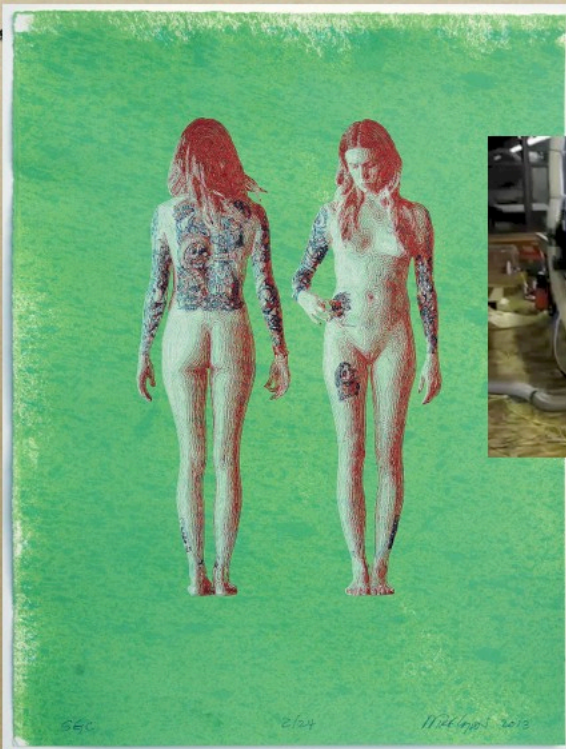
A Drawing Machine Taxonomy

<i>Control</i> <i>Image</i>	<i>Analog</i>	<i>Digital</i>
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Mike Lyon, Kansas City, 2012

**Homespun
Technology
portfolio**

**Crawford
Bldg
JDCAD**



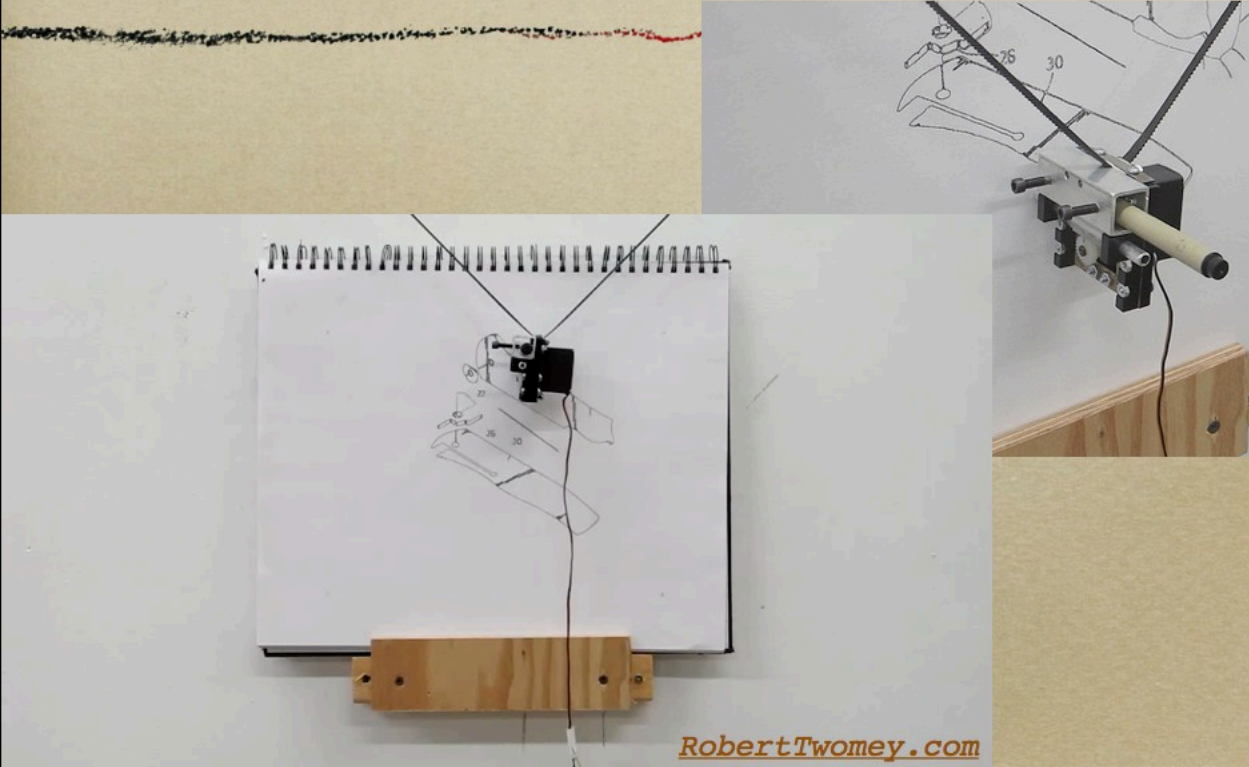
<http://mlyon.com/>

Patrick Tresset: Paul the Drawing



<http://doc.gold.ac.uk/~ma701pt/patricktresset/>

Robert Twomey, 2013



RobertTwomey.com

A Drawing Machine Taxonomy

<i>Image</i> \ <i>Control</i>	<i>Analog (mechanical)</i>	<i>Digital (electronic)</i>
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Automated Drawing

- Drawings made with mechanisms
 - Repeatable?
 - Controllable?
 - Editionable?
- Like print in many ways
 - With the twist of directly drawing on paper rather than through a matrix...
 - Does it complement print? Or is it separate from print?