



Athanasios Velios

Sebastian Faubel  
Moritz Eberl

Jacobus Philippus, De claris mulieribus  
(Book)

Binding

produced

to

happened during

Board addition

1497 boards  
(Component)

added

Jacobus Philippus, De claris mulieribus  
(Book)

Alteration

altered

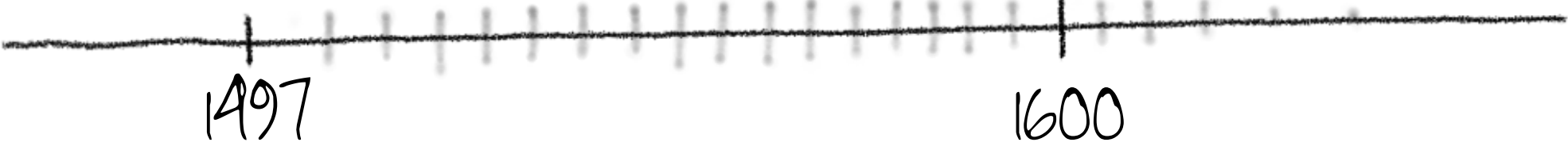
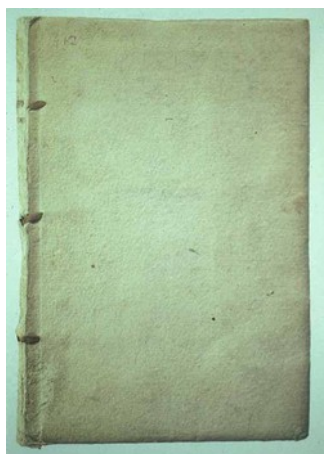
from

happened during

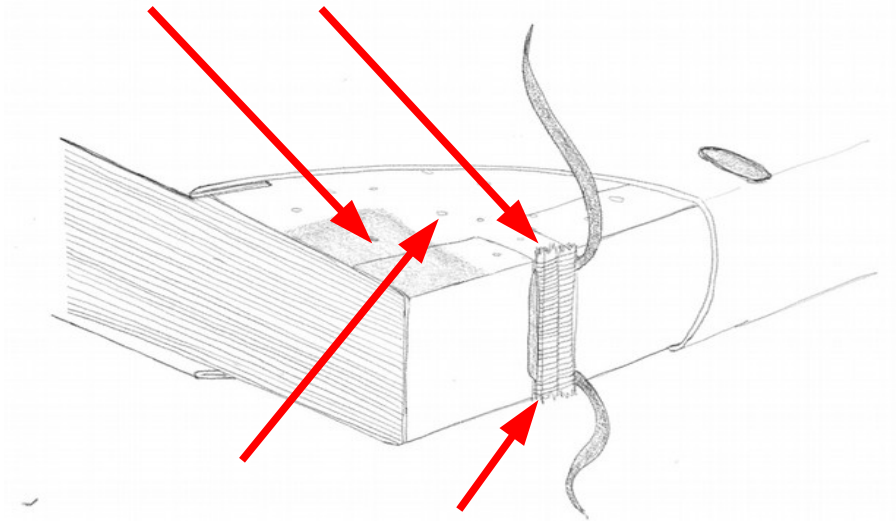
Board removal

1497 boards  
(Component)

removed



evidence

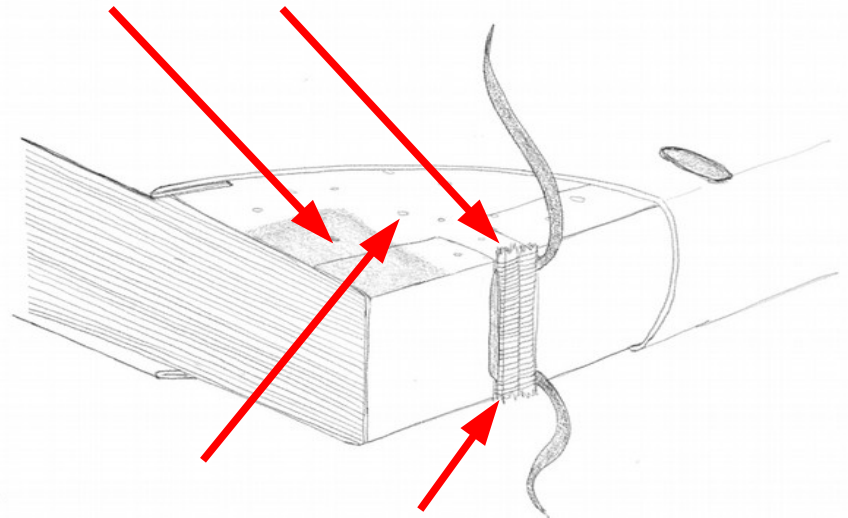
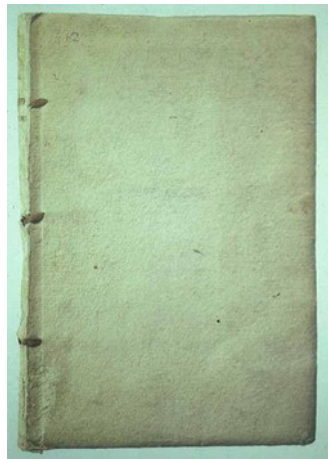


data  
encoding  
of evidence

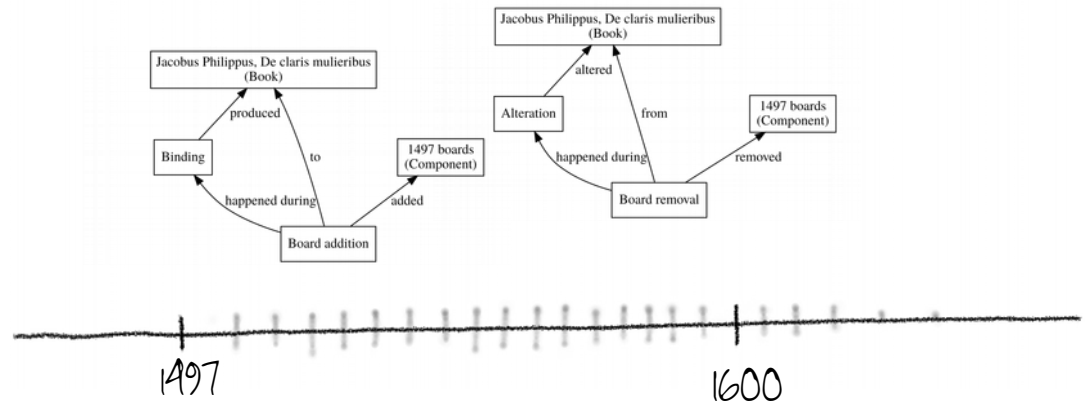
The image displays five screenshots of a forensic data entry software interface, arranged horizontally. Each screenshot shows a different section of the software, designed for recording detailed information about evidence items. The sections are:

- 4. ENDLEAVES:** Contains fields for 'LEFT' and 'RIGHT' sides, 'NUMBER OF LEAVES', and 'NUMBER OF STITCHES'. It includes multiple tables for recording data across different categories.
- 5. SEWING (CURRENT) EDGES:** Focuses on recording details about the sewing process, including 'NUMBER OF STITCHES', 'DIRECTION OF STITCHES', and 'TYPE OF STITCHES'. It features a large table for data entry.
- 2a. TEXT LEAVES:** Records information about text on the leaves, including 'NUMBER OF LEAVES', 'NUMBER OF STITCHES', and 'TYPE OF STITCHES'. It includes a table for recording text details.
- 3. INK & PIGMENT:** Details the ink and pigment used, including 'INK COLOR', 'PIGMENT COLOR', and 'TYPE OF INK/PIGMENT'. It includes a table for recording ink and pigment data.
- 2. TEXT LEAVES:** Records general information about text on the leaves, including 'NUMBER OF LEAVES', 'NUMBER OF STITCHES', and 'TYPE OF STITCHES'. It includes a table for recording text details.

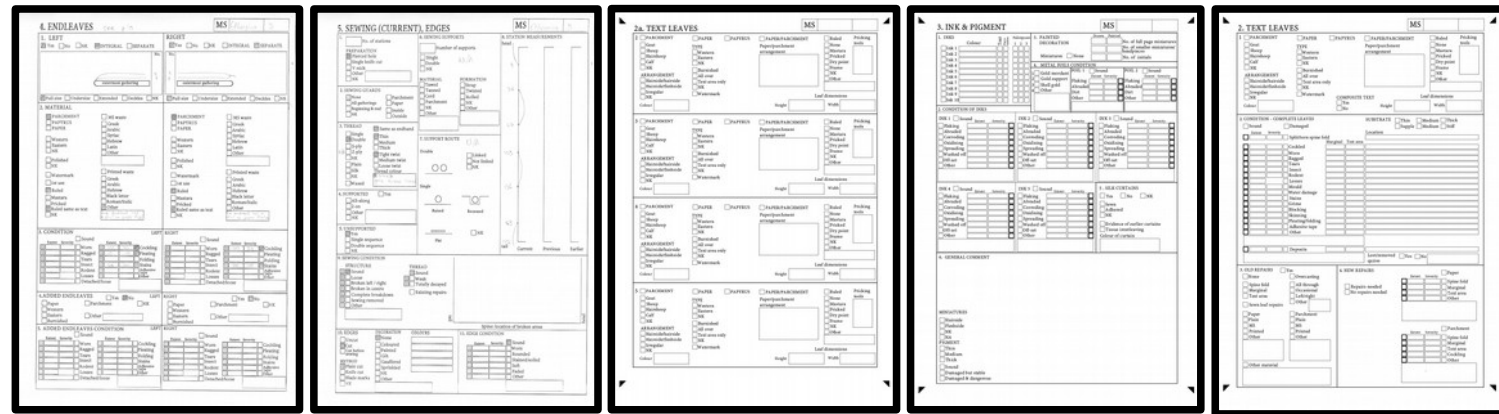
evidence



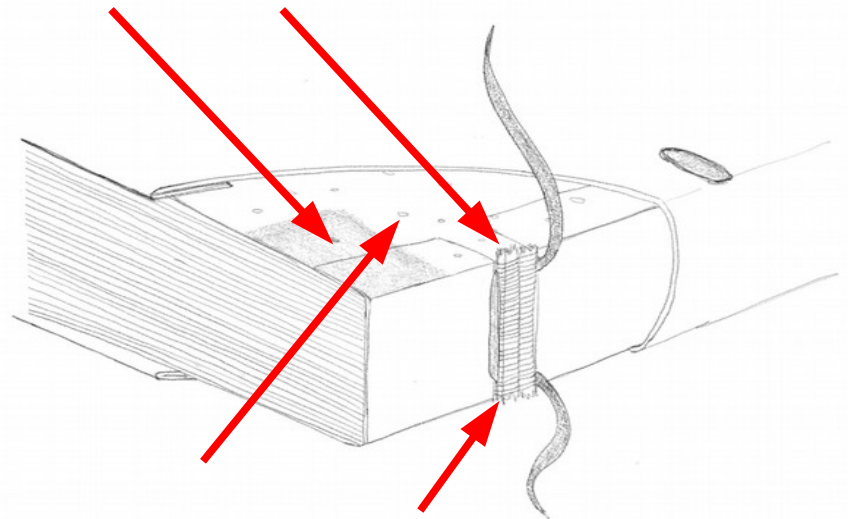
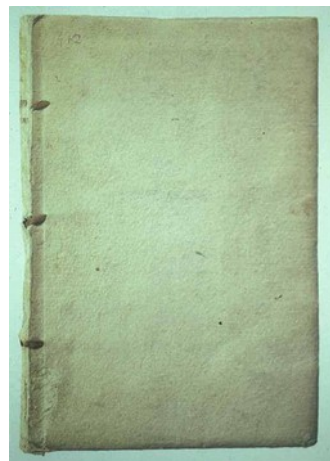
data  
querying  
-  
argument  
making



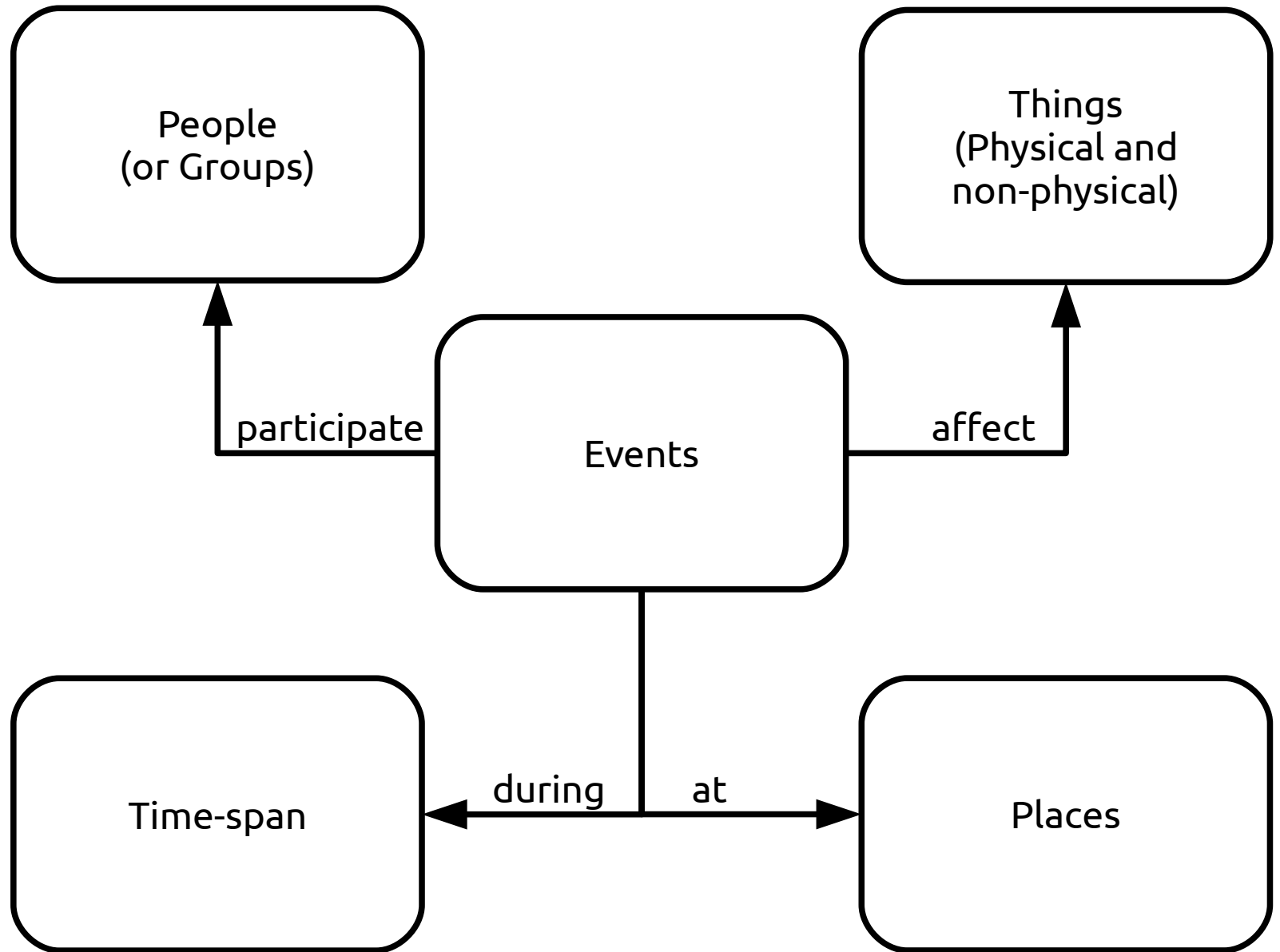
data  
encoding  
of evidence



evidence



data  
encoding  
of evidence



# Documenting digital art practice

- Capture evidence/data
  - All computer interaction

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- [Project summary](#)
- [Partners](#)
- [Publications](#)
- [Deliverables](#)
- [Open source development](#)
- [What others say](#)
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- [Contact](#)

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- [SemanticDesktop.org](#)
- [Nepomuk-KDE](#)

## NEPOMUK - The Social Semantic Desktop - FP6-027705

### ***Networked Environment for Personalized, Ontology-based Management of Unified Knowledge***

NEPOMUK brings together researchers, industrial software developers, and representative industrial users, to develop a comprehensive solution for extending the personal desktop into a collaboration environment which supports both the personal information management and the sharing and exchange across social and organizational relations.



Contact Information	
Name of coordinating person	Dr. Ansgar Bernardi
Coordinating Organization	DFKI GmbH - Knowledge Management Department
Email	<a href="mailto:info@nepomuk.semanticdesktop.org">mailto:info@nepomuk.semanticdesktop.org</a>
Fax	+49 631 20575 102

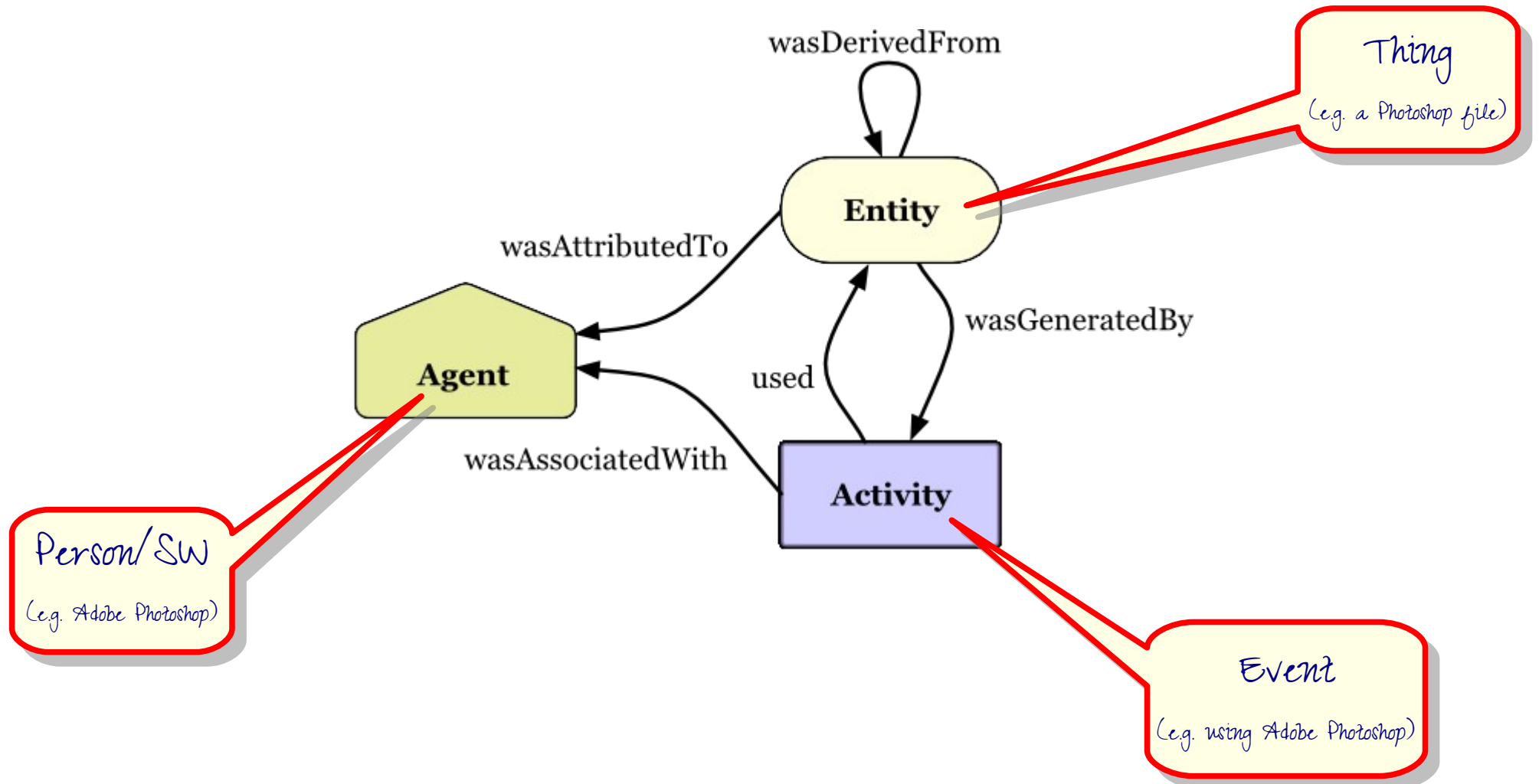




# Documenting digital art practice

- Capture evidence/data
  - All computer interaction
- Encode data
  - Event based

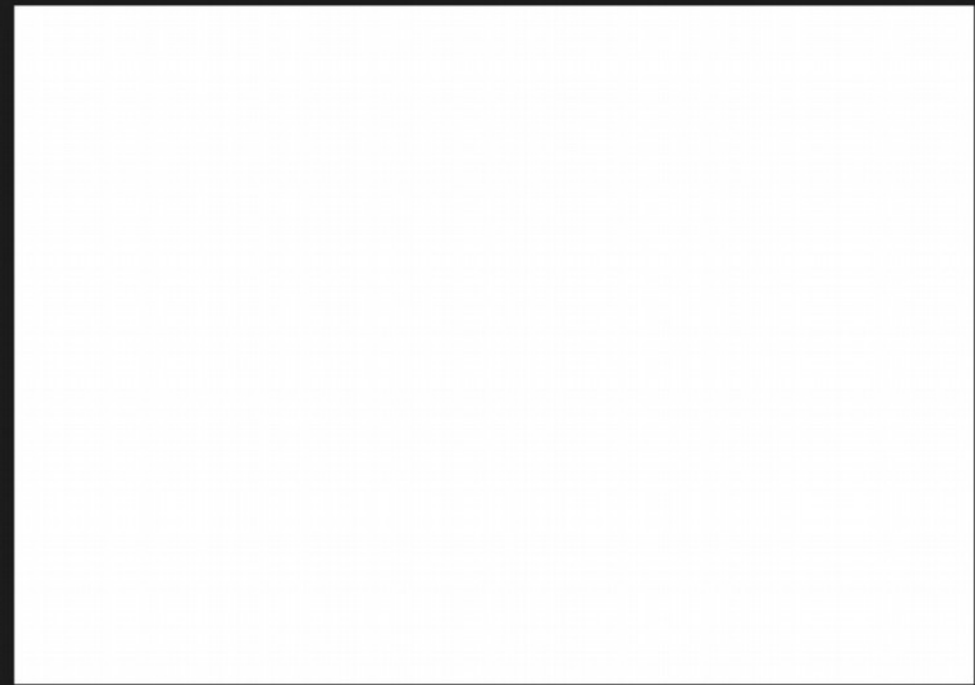
# W3C PROV ontology



# Documenting digital art practice

- Capture evidence/data
  - All computer interaction
- Encode data
  - Event based
- Query data to make arguments

Created Element	08:24:00
Created Element	08:24:03
Created Element	08:23:59
Created Element	08:23:53
Created Element	08:23:50
Created Element	08:23:48
Created Element	08:23:43
Created Element	08:23:37
Created Element	08:23:32
Created Element	08:23:28
Created Element	08:23:23
Undo	08:22:51
Scaled	08:22:48
Removed Element	08:22:48
Scaled	08:22:48
Undo	08:22:16
Created Element	08:22:12
Created Element	08:20:08
Created Element	08:20:08
Created Element	08:20:08



**STATISTICS**

**Editing**

Confidence	100 %
Steps	1
Undos	0
Redos	0

**Composition**

Layers	1
Groups	0
Masked	0
Clipped	0

**Colours**

**Layers**

- Layer 1

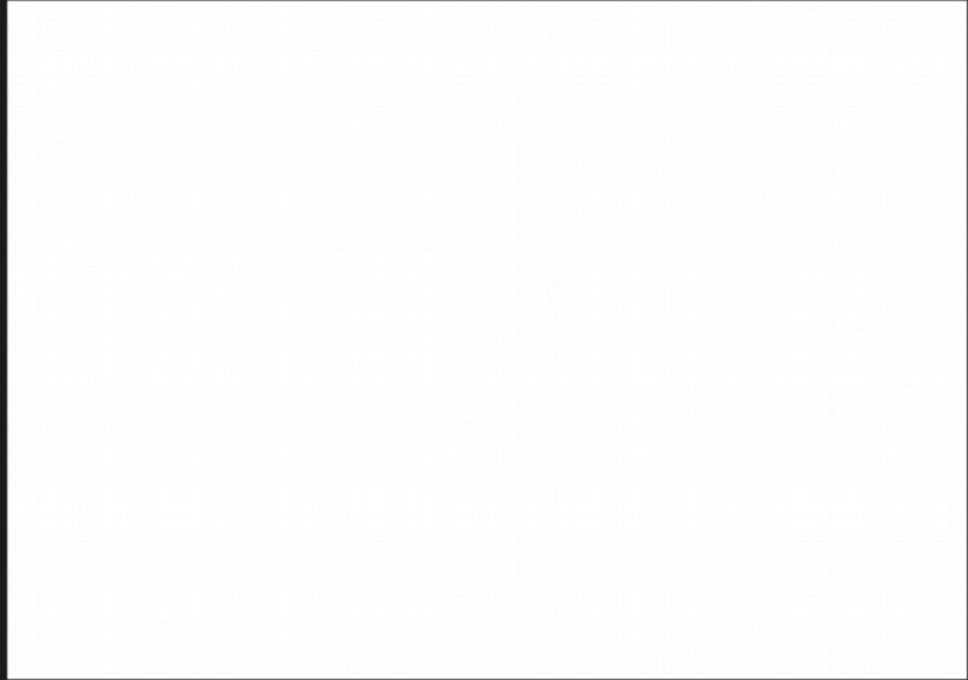
Write a message



Untitled-3.ai



Created Element	08:24:00
Created Element	08:24:03
Created Element	08:23:59
Created Element	08:23:53
Created Element	08:23:50
Created Element	08:23:48
Created Element	08:23:43
Created Element	08:23:37
Created Element	08:23:32
Created Element	08:23:28
Created Element	08:23:23
Undo	08:22:51
Scaled	08:22:48
Removed Element	08:22:48
Scaled	08:22:48
Undo	08:22:16
Created Element	08:22:12
Created Element	08:20:08
Created Element	08:20:08
Created Element	08:20:08



### STATISTICS

#### Editing

Confidence	100 %
Steps	2
Undos	0
Redos	0

#### Composition

Layers	1
Groups	0
Masked	0
Clipped	0

#### Colours

#### Layers

- Layer 1

Write a message

⏪ ⏩ 00:00:00

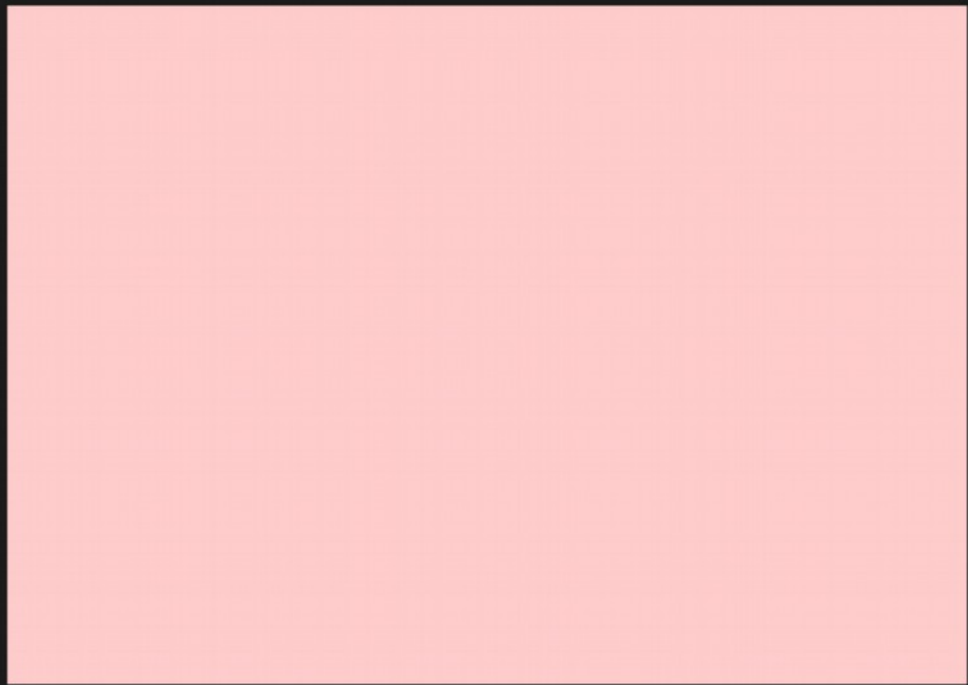
00:05:16



Untitled-3.ai



Created Element	08:24:00
Created Element	08:24:03
Created Element	08:23:59
Created Element	08:23:53
Created Element	08:23:50
Created Element	08:23:48
Created Element	08:23:43
Created Element	08:23:37
Created Element	08:23:32
Created Element	08:23:28
Created Element	08:23:23
Undo	08:22:51
Scaled	08:22:48
Removed Element	08:22:48
Scaled	08:22:48
Undo	08:22:16
Created Element	08:22:12
Created Element	08:20:08
Created Element	08:20:08
Created Element	08:20:08



### STATISTICS

#### Editing

Confidence	100 %
Steps	3
Undos	0
Redos	0

#### Composition

Layers	1
Groups	0
Masked	0
Clipped	0

#### Colours

#### Layers

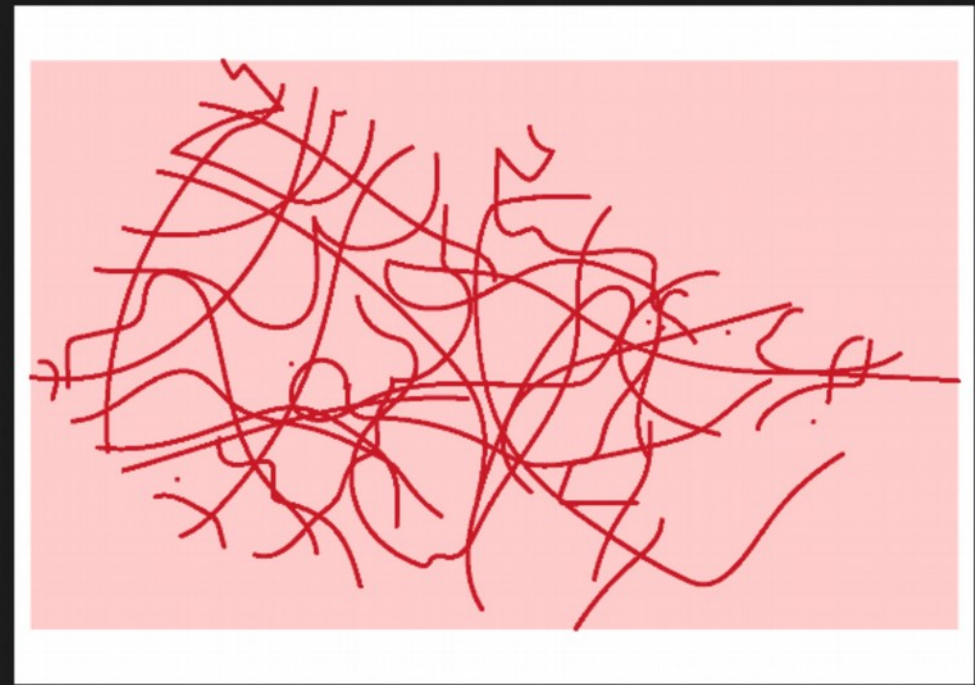
- Layer 1

Write a message

⏪ ⏩ 00:00:00

00:05:16

- Created Element 08:24:00
- Created Element 08:24:03
- Created Element 08:23:59
- Created Element 08:23:53
- Created Element 08:23:50
- Created Element 08:23:48
- Created Element 08:23:43
- Created Element 08:23:37
- Created Element 08:23:32
- Created Element 08:23:28
- Created Element 08:23:23
- Undo 08:22:51
- Scaled 08:22:48
- Removed Element 08:22:48
- Scaled 08:22:48
- Undo 08:22:16
- Created Element 08:22:12
- Created Element 08:20:08
- Created Element 08:20:08
- Created Element 08:20:08



STATISTICS

Editing

Confidence	100 %
Steps	4
Undos	0
Redos	0

Composition

Layers	1
Groups	0
Masked	0
Clipped	0

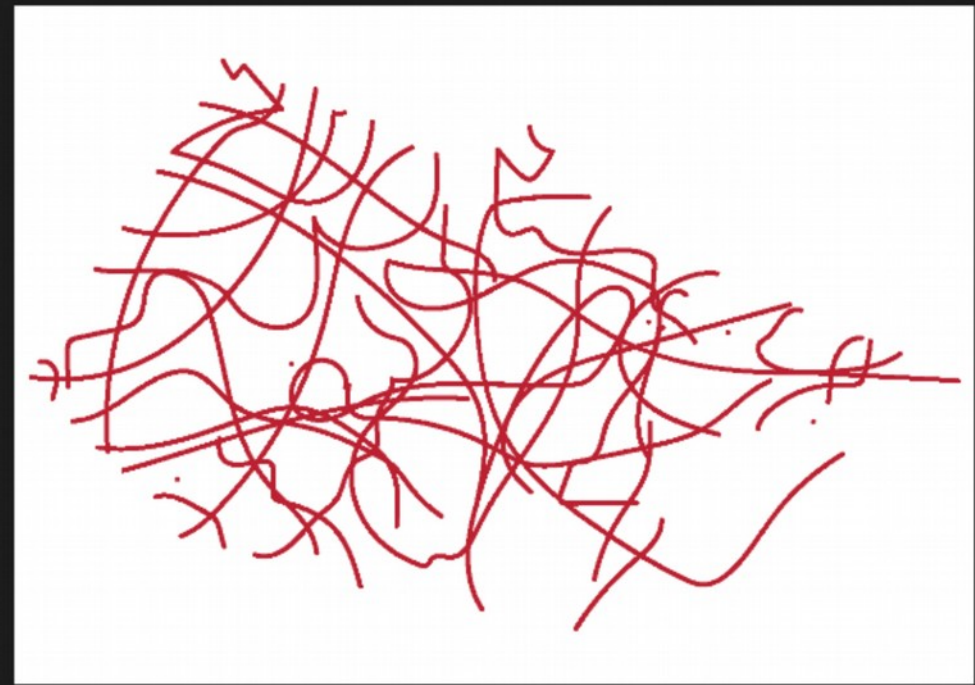
Colours

Layers

- Layer 1

Write a message

- Created Element 08:24:00
- Created Element 08:24:03
- Created Element 08:23:59
- Created Element 08:23:53
- Created Element 08:23:50
- Created Element 08:23:48
- Created Element 08:23:43
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- Scaled 08:22:48
- Removed Element 08:22:48
- Scaled 08:22:48
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- Created Element 08:22:12
- Created Element 08:20:08
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- Created Element 08:20:08



STATISTICS

Editing

Confidence	80 %
Steps	5
Undos	1
Redos	0

Composition

Layers	1
Groups	0
Masked	0
Clipped	0

Colours

Layers

- ◆ Layer 1

Write a message

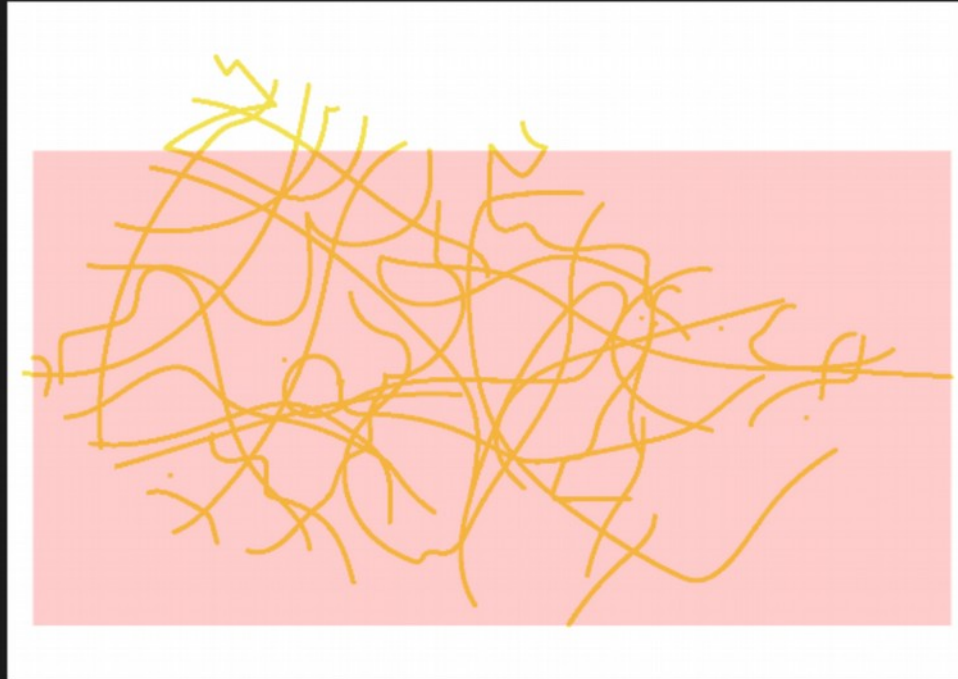




Untitled-3.ai



- Created Element 08:24:00
- Created Element 08:24:03
- Created Element 08:23:59
- Created Element 08:23:53
- Created Element 08:23:50
- Created Element 08:23:48
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### STATISTICS

#### Editing

Confidence	83 %
Steps	6
Undos	1
Redos	0

#### Composition

Layers	1
Groups	0
Masked	0
Clipped	0

#### Colours

#### Layers

- Layer 1

Write a message

⏪ ⏩ 00:02:40

00:05:16



Untitled-3.ai



- Created Element 08:24:00
- Created Element 08:24:03
- Created Element 08:23:59
- Created Element 08:23:53
- Created Element 08:23:50
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- Created Element 08:23:43
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### STATISTICS

#### Editing

Confidence	86 %
Steps	7
Undos	1
Redos	0

#### Composition

Layers	1
Groups	0
Masked	0
Clipped	0

#### Colours

#### Layers

- Layer 1

Write a message

⏪ ⏩ 00:02:40

00:05:16



Untitled-3.ai



- Created Element 08:24:00
- Created Element 08:24:03
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- Scaled 08:22:48
- Undo 08:22:16
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- Created Element 08:20:08



### STATISTICS

#### Editing

Confidence	88 %
Steps	8
Undos	1
Redos	0

#### Composition

Layers	1
Groups	0
Masked	0
Clipped	0

#### Colours

#### Layers

- Layer 1

Write a message

⏪ ⏩ 00:02:40 
⏪
⏩

00:05:16

- Created Element 08:24:00
- Created Element 08:24:03
- Created Element 08:23:59
- Created Element 08:23:53
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- Created Element 08:22:12
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- Created Element 08:20:08
- Created Element 08:20:08



STATISTICS

Editing

Confidence	78 %
Steps	9
Undos	2
Redos	0

Composition

Layers	1
Groups	0
Masked	0
Clipped	0

Colours

Layers

- Layer 1

Write a message

✓ Created Element	08:24:00
✓ Created Element	08:24:03
✓ Created Element	08:23:59
✓ Created Element	08:23:53
✓ Created Element	08:23:50
✓ Created Element	08:23:48
✓ Created Element	08:23:43
✓ Created Element	08:23:37
✓ Created Element	08:23:32
✓ Created Element	08:23:28
✓ Created Element	08:23:23
✓ Undo	08:22:51
✓ Scaled	08:22:48
✓ Removed Element	08:22:48
✓ Scaled	08:22:48
✓ Undo	08:22:16
✓ Created Element	08:22:12
✓ Created Element	08:20:08
✓ Created Element	08:20:08
✓ Created Element	08:20:08



**STATISTICS**

**Editing**

Confidence	80 %
Steps	10
Undos	2
Redos	0

**Composition**

Layers	1
Groups	0
Masked	0
Clipped	0

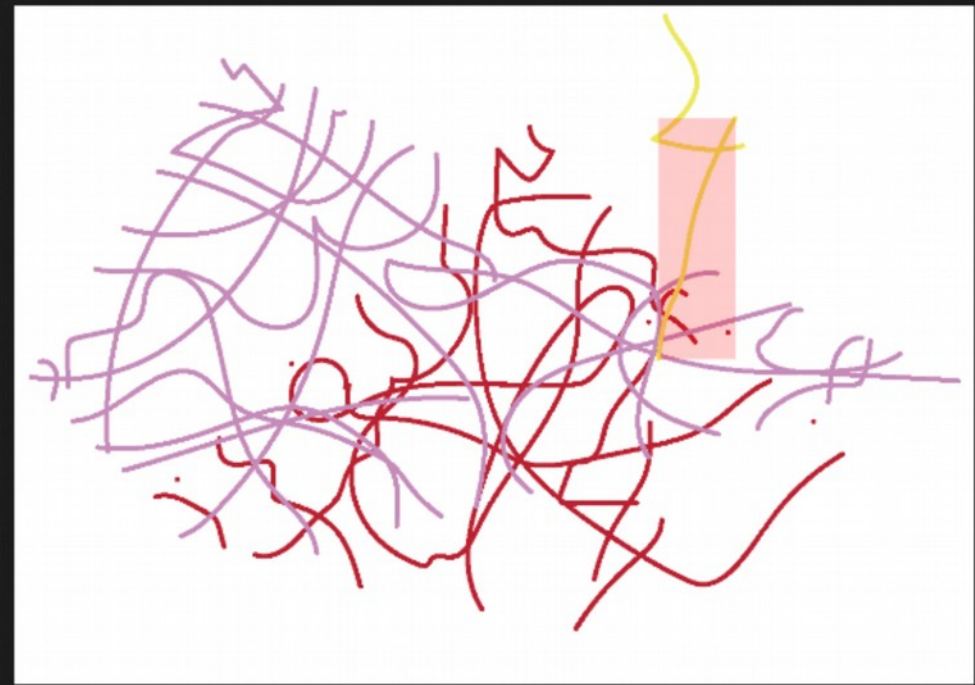
**Colours**

**Layers**

- ◆ Layer 1

Write a message

Created Element	08:24:00
Created Element	08:24:03
Created Element	08:23:59
Created Element	08:23:53
Created Element	08:23:50
Created Element	08:23:48
Created Element	08:23:43
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Removed Element	08:22:48
Scaled	08:22:48
Undo	08:22:16
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Created Element	08:20:08
Created Element	08:20:08
Created Element	08:20:08



STATISTICS

Editing

Confidence	82 %
Steps	11
Undos	2
Redos	0

Composition

Layers	1
Groups	0
Masked	0
Clipped	0

Colours

Layers

- Layer 1

Write a message

✓ Created Element	08:24:00
✓ Created Element	08:24:03
✓ Created Element	08:23:59
✓ Created Element	08:23:53
✓ Created Element	08:23:50
✓ Created Element	08:23:48
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✓ Removed Element	08:22:48
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✓ Undo	08:22:16
✓ Created Element	08:22:12
✓ Created Element	08:20:08
✓ Created Element	08:20:08
✓ Created Element	08:20:08



STATISTICS

Editing

Confidence	83 %
Steps	12
Undos	2
Redos	0

Composition

Layers	1
Groups	0
Masked	0
Clipped	0

Colours

Layers

- ◆ Layer 1

Write a message

Created Element	08:24:00
Created Element	08:24:03
Created Element	08:23:59
Created Element	08:23:53
Created Element	08:23:50
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Created Element	08:23:43
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Scaled	08:22:48
Removed Element	08:22:48
Scaled	08:22:48
Undo	08:22:16
Created Element	08:22:12
Created Element	08:20:08
Created Element	08:20:08
Created Element	08:20:08



STATISTICS

Editing

Confidence	85 %
Steps	13
Undos	2
Redos	0

Composition

Layers	1
Groups	0
Masked	0
Clipped	0

Colours

Layers

- Layer 1

Write a message



Created Element	08:24:00
Created Element	08:24:03
Created Element	08:23:59
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Created Element	08:22:12
Created Element	08:20:08
Created Element	08:20:08
Created Element	08:20:08



**STATISTICS**

**Editing**

Confidence	86 %
Steps	14
Undos	2
Redos	0

**Composition**

Layers	1
Groups	0
Masked	0
Clipped	0

**Colours**

**Layers**

- ◆ Layer 1

Write a message

Created Element	08:24:00
Created Element	08:24:03
Created Element	08:23:59
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Created Element	08:23:50
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Undo	08:22:16
Created Element	08:22:12
Created Element	08:20:08
Created Element	08:20:08
Created Element	08:20:08



**STATISTICS**

**Editing**

Confidence	87 %
Steps	15
Undos	2
Redos	0

**Composition**

Layers	1
Groups	0
Masked	0
Clipped	0

**Colours**

**Layers**

- ◆ Layer 1

Write a message



Untitled-3.ai



Created Element	08:24:00
Created Element	08:24:03
Created Element	08:23:59
Created Element	08:23:53
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Scaled	08:22:48
Undo	08:22:16
Created Element	08:22:12
Created Element	08:20:08
Created Element	08:20:08
Created Element	08:20:08



### STATISTICS

#### Editing

Confidence	88 %
Steps	16
Undos	2
Redos	0

#### Composition

Layers	1
Groups	0
Masked	0
Clipped	0

#### Colours

#### Layers

- Layer 1

Write a message

✓ Created Element	08:24:00
✓ Created Element	08:24:03
✓ Created Element	08:23:59
✓ Created Element	08:23:53
✓ Created Element	08:23:50
✓ Created Element	08:23:48
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✓ Scaled	08:22:48
✓ Undo	08:22:16
✓ Created Element	08:22:12
✓ Created Element	08:20:08
✓ Created Element	08:20:08
✓ Created Element	08:20:08



**STATISTICS**

**Editing**

Confidence	88 %
Steps	17
Undos	2
Redos	0

**Composition**

Layers	1
Groups	0
Masked	0
Clipped	0

**Colours**

**Layers**

- ◆ Layer 1

Write a message

✓ Created Element	08:24:00
✓ Created Element	08:24:03
✓ Created Element	08:23:59
✓ Created Element	08:23:53
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✓ Created Element	08:23:48
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✓ Removed Element	08:22:48
✓ Scaled	08:22:48
✓ Undo	08:22:16
✓ Created Element	08:22:12
✓ Created Element	08:20:08
✓ Created Element	08:20:08
✓ Created Element	08:20:08



**STATISTICS**

**Editing**

Confidence	89 %
Steps	18
Undos	2
Redos	0

**Composition**

Layers	1
Groups	0
Masked	0
Clipped	0

**Colours**

**Layers**

- ◆ Layer 1

Write a message

Created Element	08:24:00
Created Element	08:24:03
Created Element	08:23:59
Created Element	08:23:53
Created Element	08:23:50
Created Element	08:23:48
Created Element	08:23:43
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Removed Element	08:22:48
Scaled	08:22:48
Undo	08:22:16
Created Element	08:22:12
Created Element	08:20:08
Created Element	08:20:08
Created Element	08:20:08



STATISTICS

Editing

Confidence	89 %
Steps	19
Undos	2
Redos	0

Composition

Layers	1
Groups	0
Masked	0
Clipped	0

Colours

Layers

- Layer 1

Write a message



Monday, 1st August 2016

Edited File

Saved	08:25:19
Created Element	08:24:49
Created Element	08:24:42
Created Element	08:24:34
Created Element	08:24:30
Created Element	08:24:26
Created Element	08:24:24
Created Element	08:24:19
Created Element	08:24:15
Created Element	08:24:12
Created Element	08:24:06
Created Element	08:24:03
Created Element	08:23:59
Created Element	08:23:53
Created Element	08:23:50
Created Element	08:23:48
Created Element	08:23:43
Created Element	08:23:37



STATISTICS

Editing

Confidence	90 %
Steps	20
Undos	2
Redos	0

Composition

Layers	1
Groups	0
Masked	0
Clipped	0

Colours

Layers

- ◆ Layer 1

Write a message

Monday, 1st August 2016

Edited File

📁 Saved	08:25:19
✍ Created Element	08:24:49
✍ Created Element	08:24:42
✍ Created Element	08:24:34
✍ Created Element	08:24:30
✍ Created Element	08:24:26
✍ Created Element	08:24:24
✍ Created Element	08:24:19
✍ Created Element	08:24:15
✍ Created Element	08:24:12
✍ Created Element	08:24:06
✍ Created Element	08:24:03
✍ Created Element	08:23:59
✍ Created Element	08:23:53
✍ Created Element	08:23:50
✍ Created Element	08:23:48
✍ Created Element	08:23:43
✍ Created Element	08:23:37



STATISTICS

Editing

Confidence	90 %
Steps	21
Undos	2
Redos	0

Composition

Layers	1
Groups	0
Masked	0
Clipped	0

Colours

Layers

- 📁 Layer 1

Write a message



Monday, 1st August 2016

Edited File

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🔪 Created Element	08:24:06
🔪 Created Element	08:24:03
🔪 Created Element	08:23:59
🔪 Created Element	08:23:53
🔪 Created Element	08:23:50
🔪 Created Element	08:23:48
🔪 Created Element	08:23:43
🔪 Created Element	08:23:37



STATISTICS

Editing

Confidence	91 %
Steps	22
Undos	2
Redos	0

Composition

Layers	1
Groups	0
Masked	0
Clipped	0

Colours

Layers

- 📁 Layer 1

Write a message



Monday, 1st August 2016

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Saved	08:25:19
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Created Element	08:24:06
Created Element	08:24:03
Created Element	08:23:59
Created Element	08:23:53
Created Element	08:23:50
Created Element	08:23:48
Created Element	08:23:43
Created Element	08:23:37



STATISTICS

Editing

Confidence	91 %
Steps	23
Undos	2
Redos	0

Composition

Layers	1
Groups	0
Masked	0
Clipped	0

Colours

Layers

- ◆ Layer 1

Write a message



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Created Element	08:24:03
Created Element	08:23:59
Created Element	08:23:53
Created Element	08:23:50
Created Element	08:23:48
Created Element	08:23:43
Created Element	08:23:37



STATISTICS

Editing

Confidence	92 %
Steps	24
Undos	2
Redos	0

Composition

Layers	1
Groups	0
Masked	0
Clipped	0

Colours

Layers

- ◆ Layer 1

Write a message



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Created Element	08:23:59
Created Element	08:23:53
Created Element	08:23:50
Created Element	08:23:48
Created Element	08:23:43
Created Element	08:23:37



STATISTICS

Editing

Confidence	92 %
Steps	25
Undos	2
Redos	0

Composition

Layers	1
Groups	0
Masked	0
Clipped	0

Colours

Layers

- ◆ Layer 1

Write a message



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Created Element	08:23:59
Created Element	08:23:53
Created Element	08:23:50
Created Element	08:23:48
Created Element	08:23:43
Created Element	08:23:37



STATISTICS

Editing

Confidence	92 %
Steps	26
Undos	2
Redos	0

Composition

Layers	1
Groups	0
Masked	0
Clipped	0

Colours

Layers

- ◆ Layer 1

Write a message



Monday, 1st August 2016

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Created Element	08:23:48
Created Element	08:23:43
Created Element	08:23:37



STATISTICS

Editing

Confidence	93 %
Steps	27
Undos	2
Redos	0

Composition

Layers	1
Groups	0
Masked	0
Clipped	0

Colours

Layers

- ◆ Layer 1

Write a message



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Created Element	08:23:59
Created Element	08:23:53
Created Element	08:23:50
Created Element	08:23:48
Created Element	08:23:43
Created Element	08:23:37



STATISTICS

Editing

Confidence	93 %
Steps	28
Undos	2
Redos	0

Composition

Layers	1
Groups	0
Masked	0
Clipped	0

Colours

Layers

- ◆ Layer 1

Write a message



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Created Element	08:23:48
Created Element	08:23:43
Created Element	08:23:37



STATISTICS

Editing

Confidence	93 %
Steps	29
Undos	2
Redos	0

Composition

Layers	1
Groups	0
Masked	0
Clipped	0

Colours

Layers

- ◆ Layer 1

Write a message





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Created Element	08:23:48
Created Element	08:23:43
Created Element	08:23:37



STATISTICS

Editing

Confidence	93 %
Steps	30
Undos	2
Redos	0

Composition

Layers	1
Groups	0
Masked	0
Clipped	0

Colours

Layers

- Layer 1

Write a message

Profile

Apps

Accounts

Enable or disable the applications which will log data into Activity:

Refresh



Adobe Illustrator CC 2015



OFF



Adobe Photoshop CC 2015



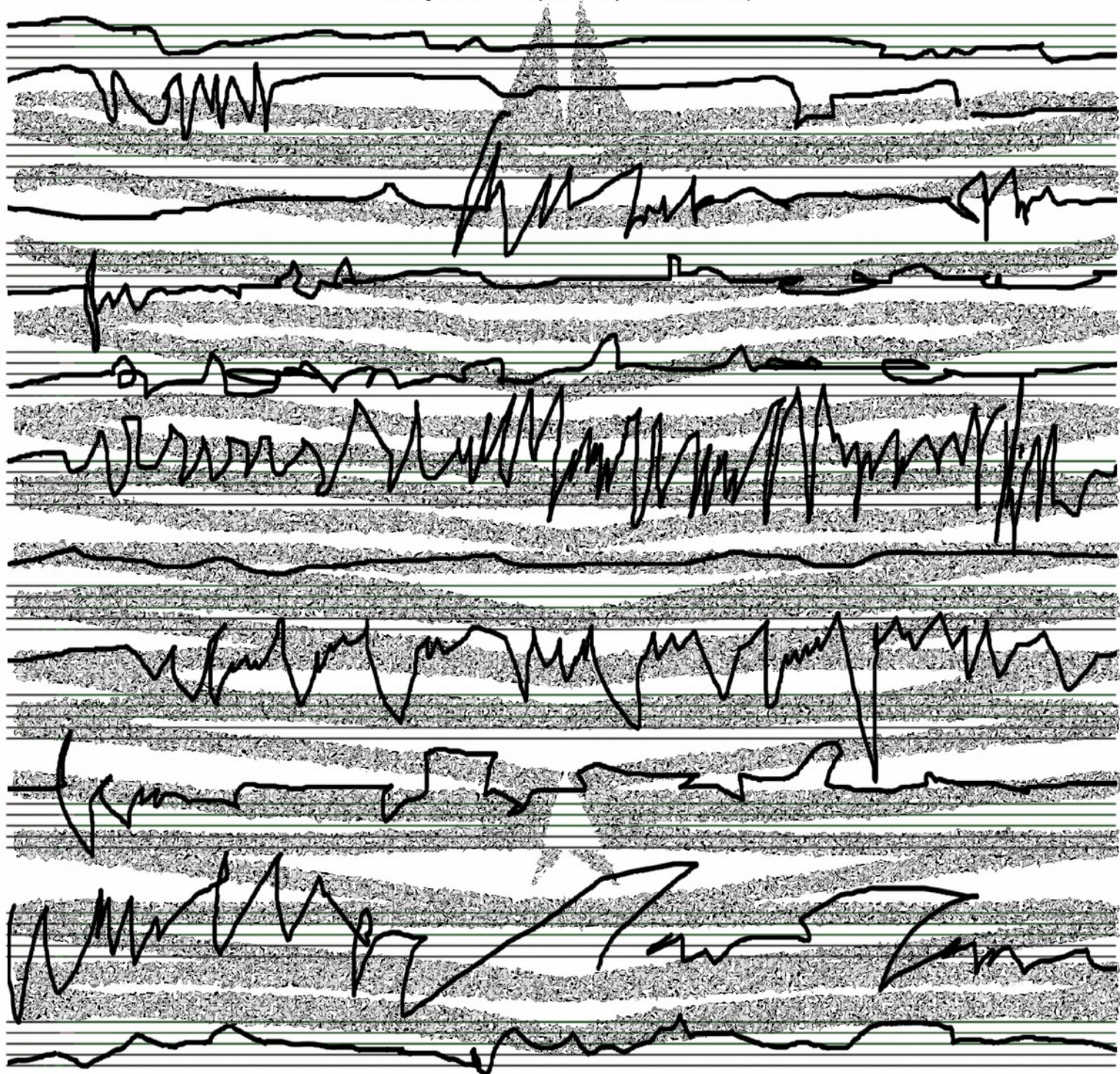
ON

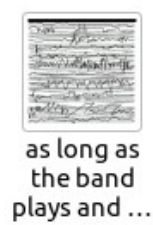


Google Chrome



OFF





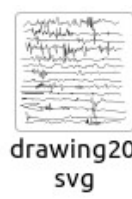
as long as the band plays and ...



drawing.svg



drawing19.svg



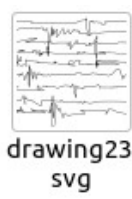
drawing20.svg



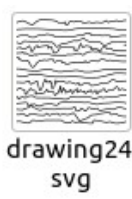
drawing21.svg



drawing22.svg



drawing23.svg



drawing24.svg



drawing25.svg



drawing26.svg



drawing27.svg



drawing28.svg



drawing32.svg



drawing43.svg



drawing44.svg



drawing45.svg



drawing46.svg



drawing47.svg



drawing48.svg



drawing49.svg



drawing50.svg



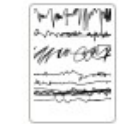
drawing51.svg



drawing-1.svg



drawing-2.svg



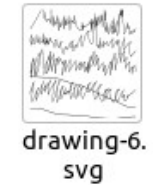
drawing-3.svg



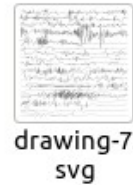
drawing-4.svg



drawing-5.svg



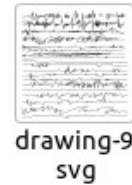
drawing-6.svg



drawing-7.svg



drawing-8svg.svg



drawing-9.svg



drawing-10.svg



drawing-11.svg



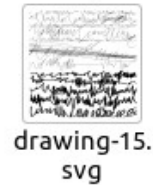
drawing-12.svg



drawing-13.svg



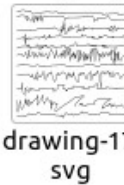
drawing-14.svg



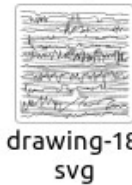
drawing-15.svg



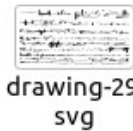
drawing-16.svg



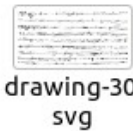
drawing-17.svg



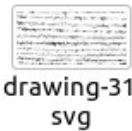
drawing-18.svg



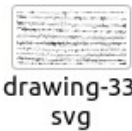
drawing-29.svg



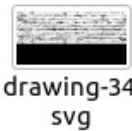
drawing-30.svg



drawing-31.svg



drawing-33.svg



drawing-34.svg



drawing-35.svg



drawing-36.svg



drawing-37.svg



drawing-39.svg



drawing-40.svg



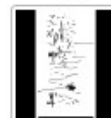
drawing-41.svg



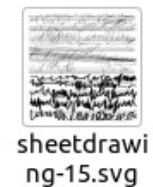
drawing-42.svg



elective psychopathy.svg



for the minds of people ar...



sheetdrawing-15.svg



sheetdrawing-17.svg



sheetdrawing-18.svg



silkscript.svg



those little pills.svg



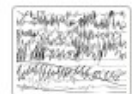
three steps.svg



trial



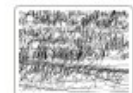
try2



wave



wave2



wave3



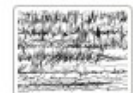
wave4



wave5



wave6



wave7

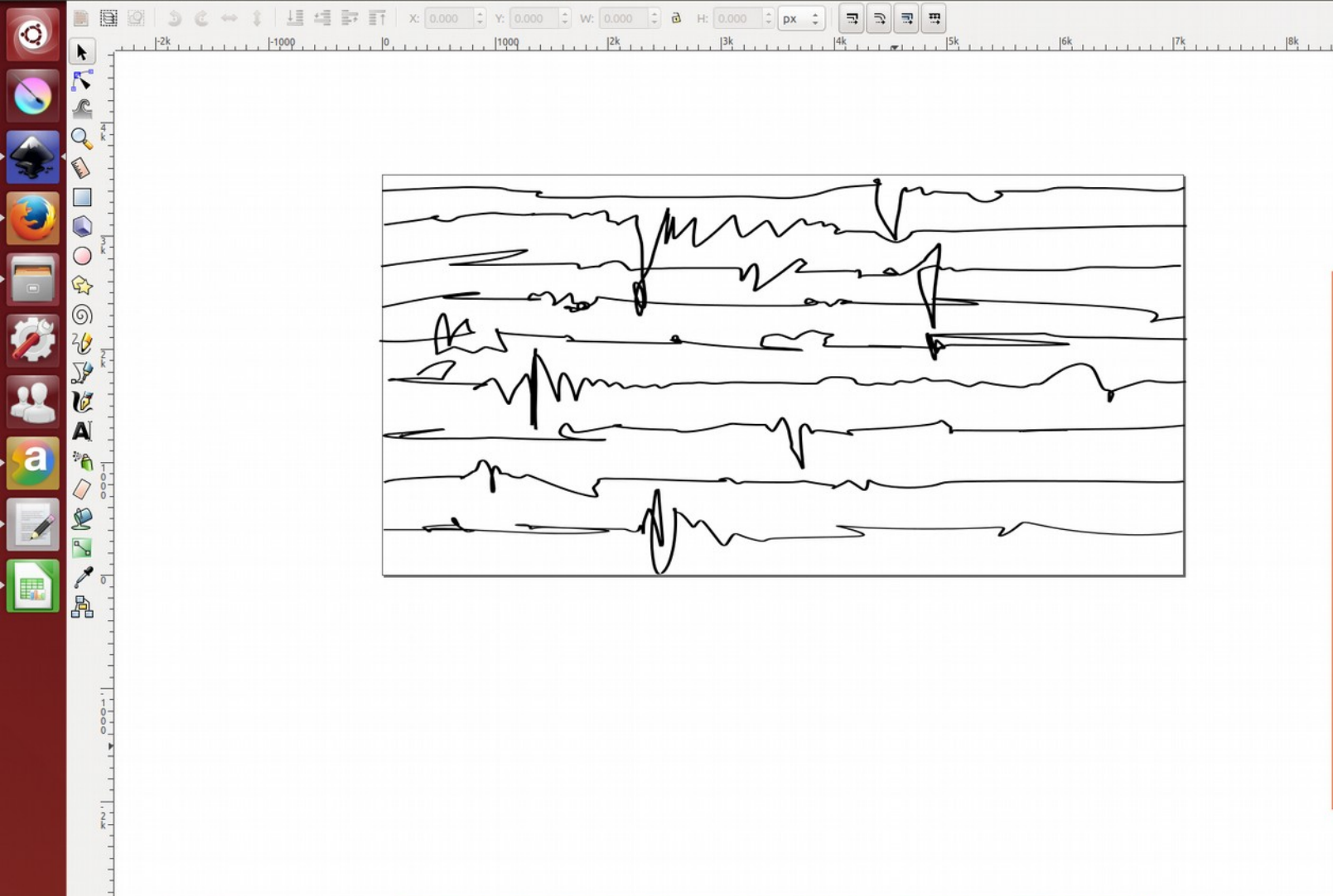


wave8

```
prefix nfo: <http://www.semanticdesktop.org/ontologies/2007/03/22/nfo#>
prefix prov: <http://www.w3.org/ns/prov#>

select distinct ?fileUrl ?creationDate
from <http://localhost:8890/artivity/1.0/{USERNAME}/activities>
where
{
    ?editing prov:used ?file .

    ?file a nfo:FileDataObject .
    ?file nfo:fileUrl ?fileUrl .
    ?file nfo:fileCreated ?creationDate .
}
order by desc(?creationDate)
```



**Export PNG Image (Shift+Ctrl+E)**

**Export area**

Page Drawing Selection Custom

x0: 0.000 y0: 0.000  
 x1: 7086.614 y1: 3543.307  
 Width: 7086.614 Height: 3543.307  
 Units: px

**Image size**

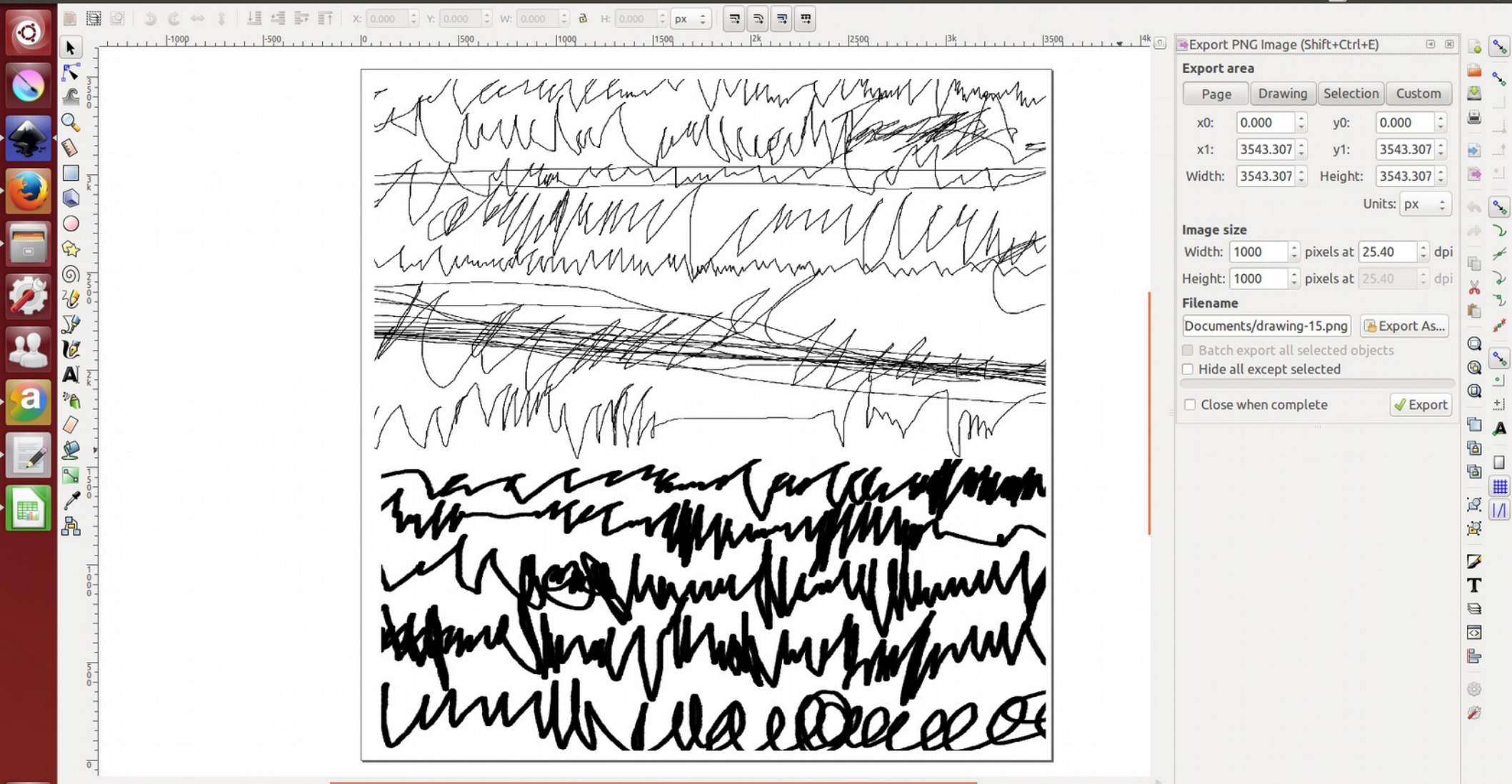
Width: 2000 pixels at 25.40 dpi  
 Height: 1000 pixels at 25.40 dpi

**Filename**

/Documents/drawing27.png Export As...

Batch export all selected objects  
 Hide all except selected

Close when complete  Export



**Export PNG Image (Shift+Ctrl+E)**

Export area

Page Drawing Selection Custom

x0: 0.000 y0: 0.000  
 x1: 3543.307 y1: 3543.307  
 Width: 3543.307 Height: 3543.307  
 Units: px

Image size  
 Width: 1000 pixels at 25.40 dpi  
 Height: 1000 pixels at 25.40 dpi

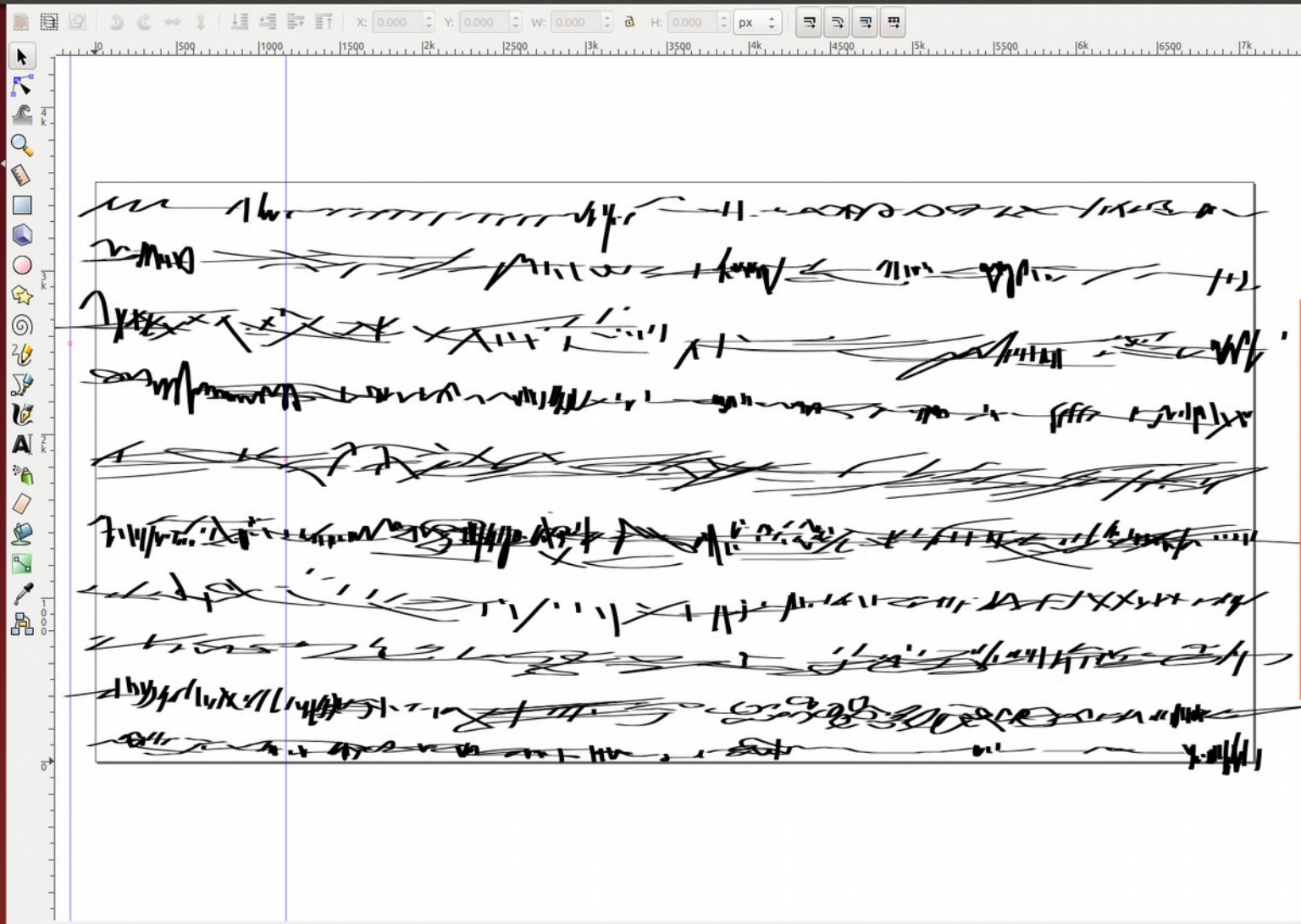
Filename  
 Documents/drawing-15.png Export As...

Batch export all selected objects  
 Hide all except selected

Close when complete  Export

Fill: N/A  
 Stroke: N/A  
 0: 0  
 Layer 1  
 No objects selected. Click, Shift+click, Alt+scroll mouse on top of objects, or drag around objects to select.

X: 3899.19  
 Y: 1587.96  
 Z: 25%



Export PNG Image (Shift+Ctrl+E)

Export area

Page Drawing Selection Custom

x0: 0.000 y0: 0.000  
 x1: 7086.614 y1: 3543.307  
 Width: 7086.614 Height: 3543.307  
 Units: px

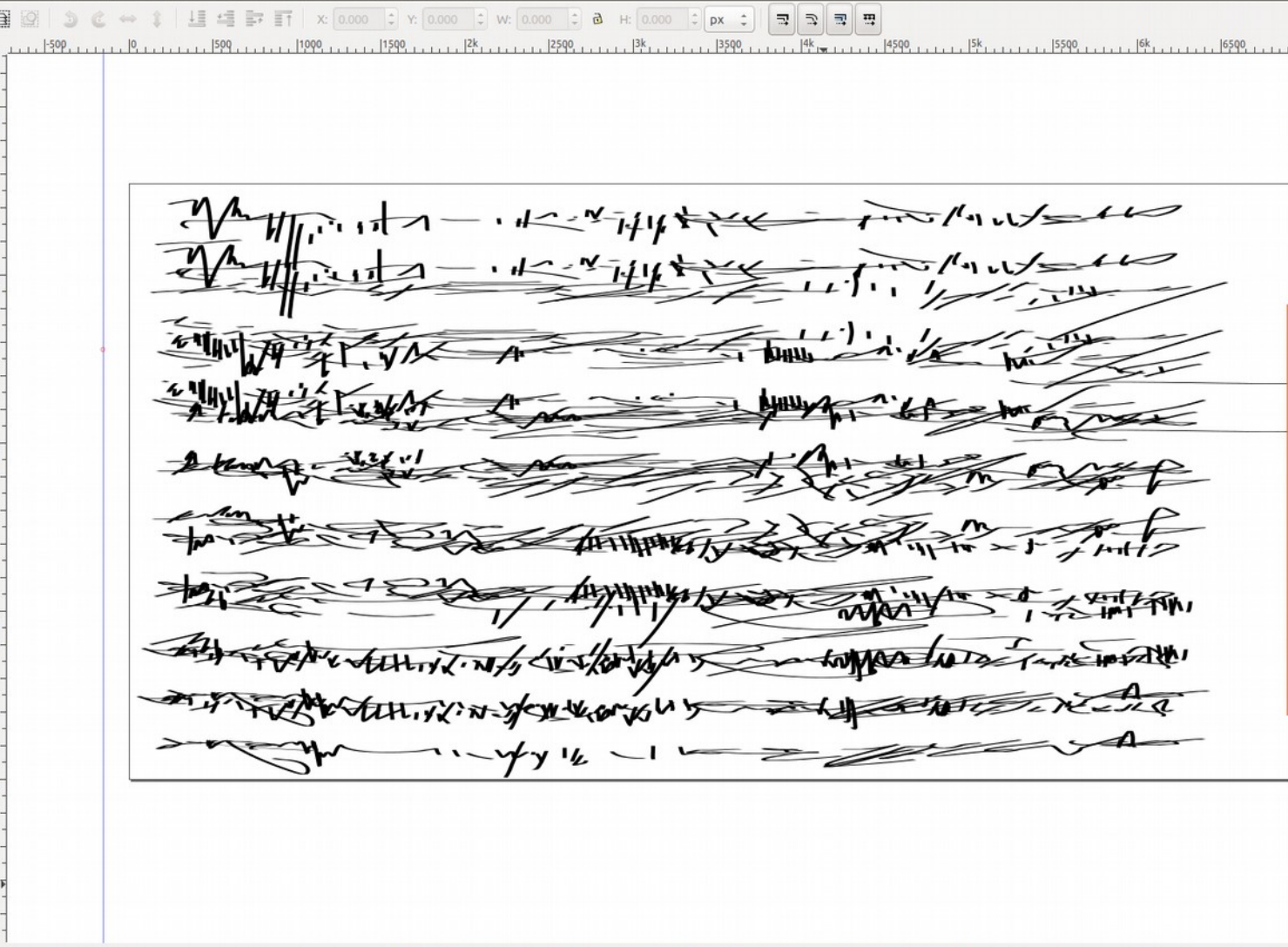
Image size  
 Width: 2000 pixels at 25.40 dpi  
 Height: 1000 pixels at 25.40 dpi

Filename  
 Documents/drawing-31.png Export As...

Batch export all selected objects  
 Hide all except selected

Close when complete  Export





Export PNG Image (Shift+Ctrl+E)

Export area

Page Drawing Selection Custom

x0: 0.000 y0: 0.000

x1: 7086.614 y1: 3543.307

Width: 7086.614 Height: 3543.307

Units: px

Image size

Width: 2000 pixels at 25.40 dpi

Height: 1000 pixels at 25.40 dpi

Filename

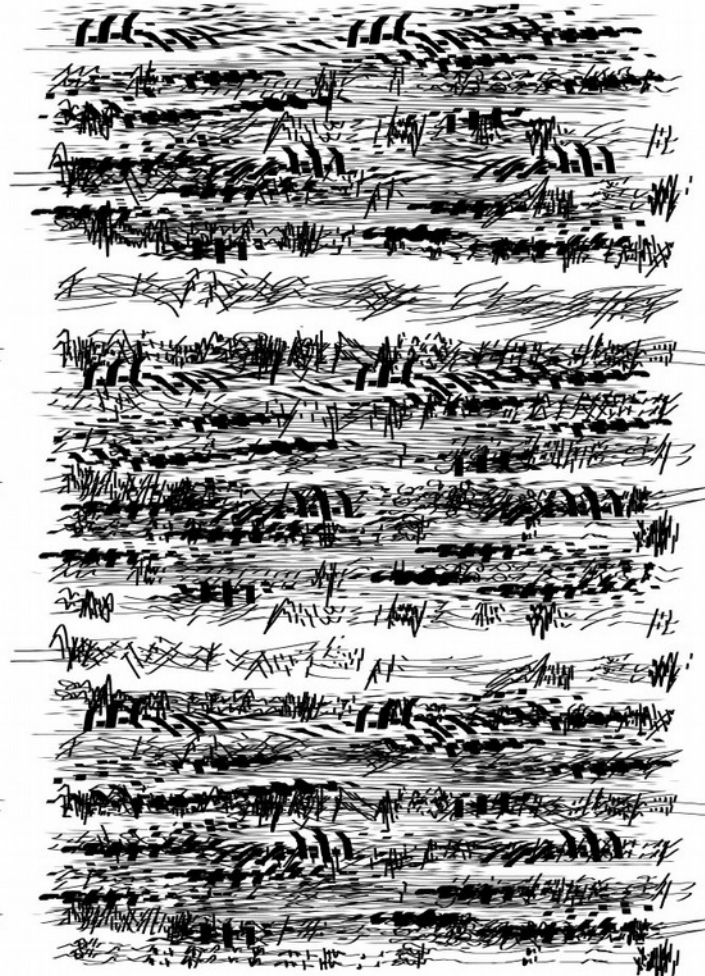
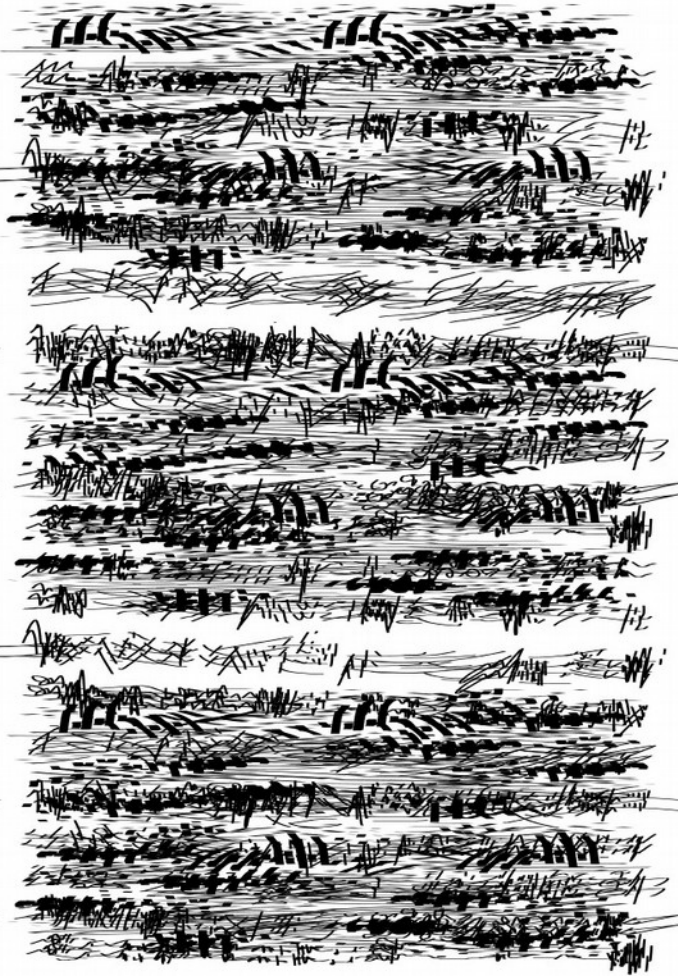
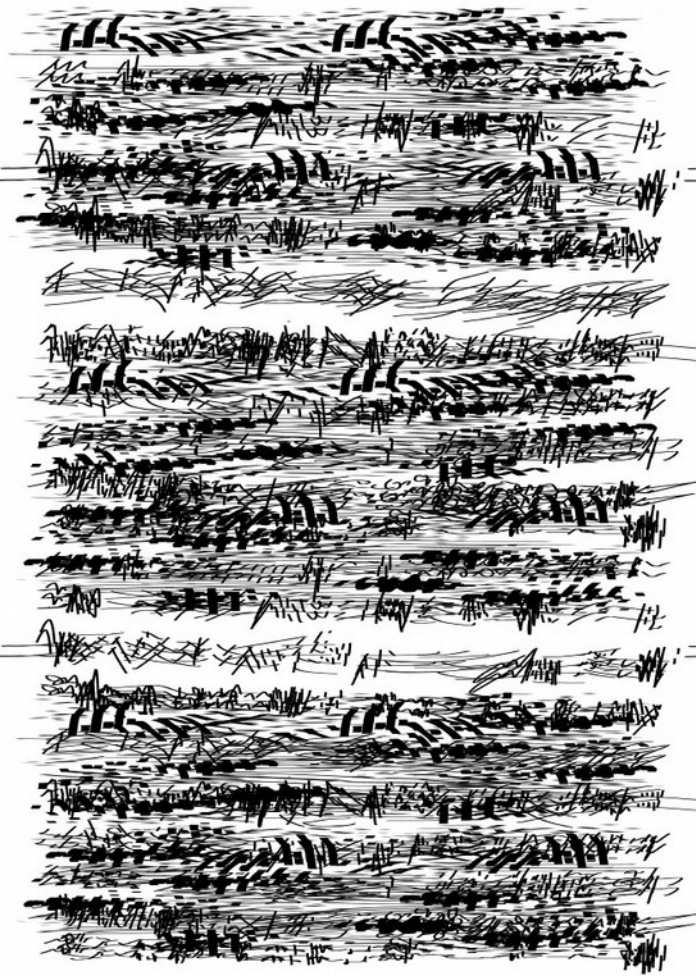
Documents/drawing-40.png Export As...

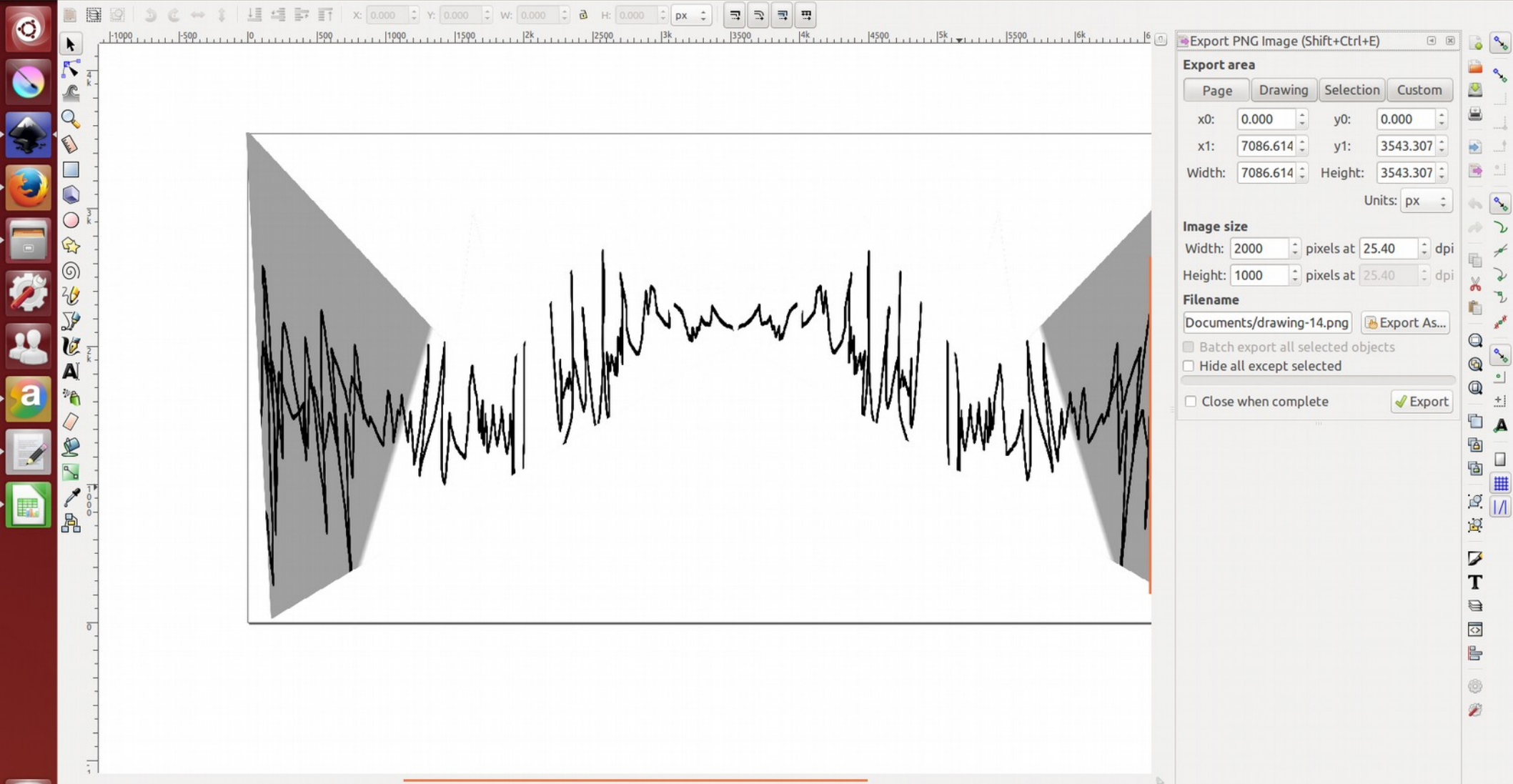
Batch export all selected objects

Hide all except selected

Close when complete

Export





Export PNG Image (Shift+Ctrl+E)

Export area

Page Drawing Selection Custom

x0: 0.000 y0: 0.000

x1: 7086.614 y1: 3543.307

Width: 7086.614 Height: 3543.307

Units: px

Image size

Width: 2000 pixels at 25.40 dpi

Height: 1000 pixels at 25.40 dpi

Filename

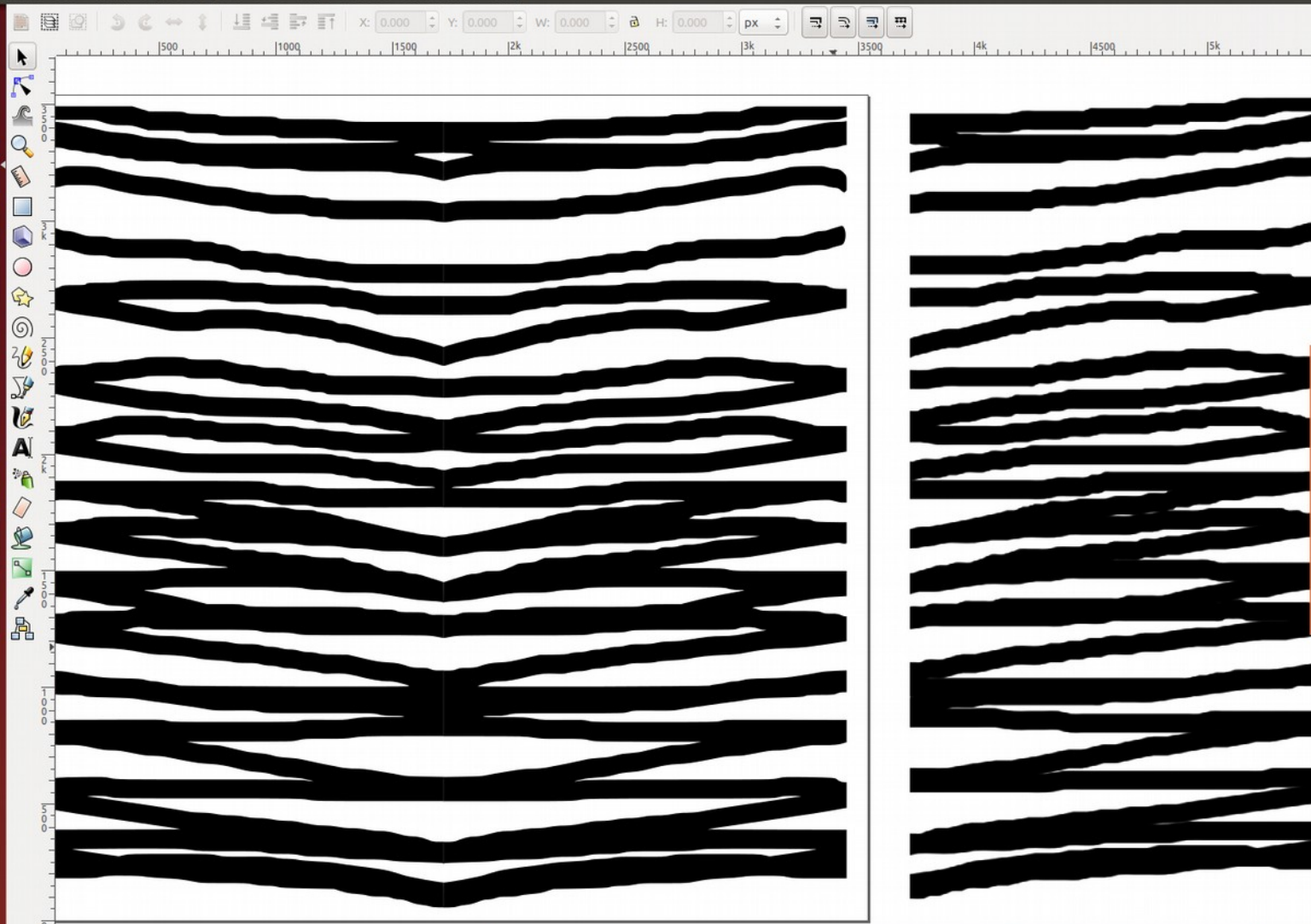
Documents/drawing-14.png Export As...

Batch export all selected objects

Hide all except selected

Close when complete

Export



Export PNG Image (Shift+Ctrl+E)

**Export area**

Page Drawing Selection Custom

x0: 0.000 y0: 0.000  
 x1: 3543.307 y1: 3543.307  
 Width: 3543.307 Height: 3543.307  
 Units: px

**Image size**  
 Width: 1000 pixels at 25.40 dpi  
 Height: 1000 pixels at 25.40 dpi

**Filename**  
 Documents/drawing-10.png Export As...

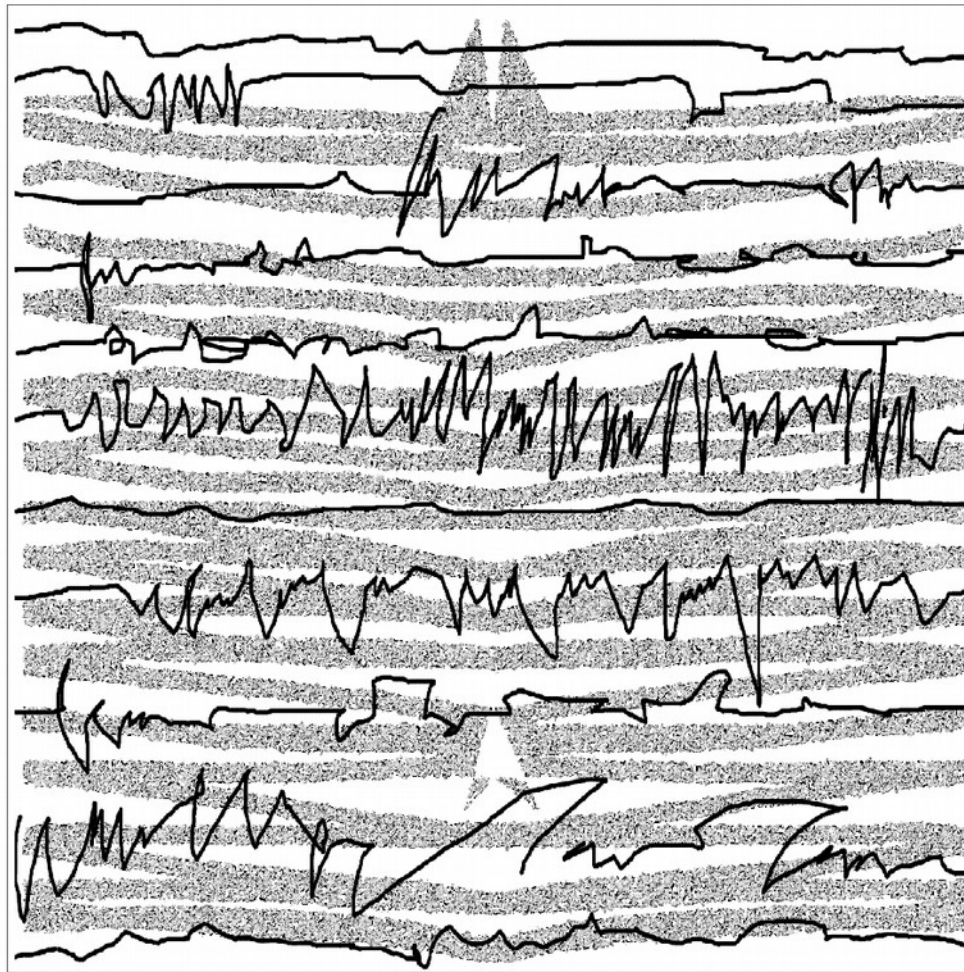
Batch export all selected objects  
 Hide all except selected

Close when complete

Fill: N/A Stroke: N/A o: 0 •Layer 1 No objects selected. Click, Shift+click, Alt+scroll mouse on top of objects, or drag around objects to select.

X: 3398.15 Y: 1171.78 Z: 25%

X: 0.000 Y: 0.000 W: 0.000 H: 0.000 px



Export PNG Image (Shift+Ctrl+E)

Export area Page Drawing Selection Custom

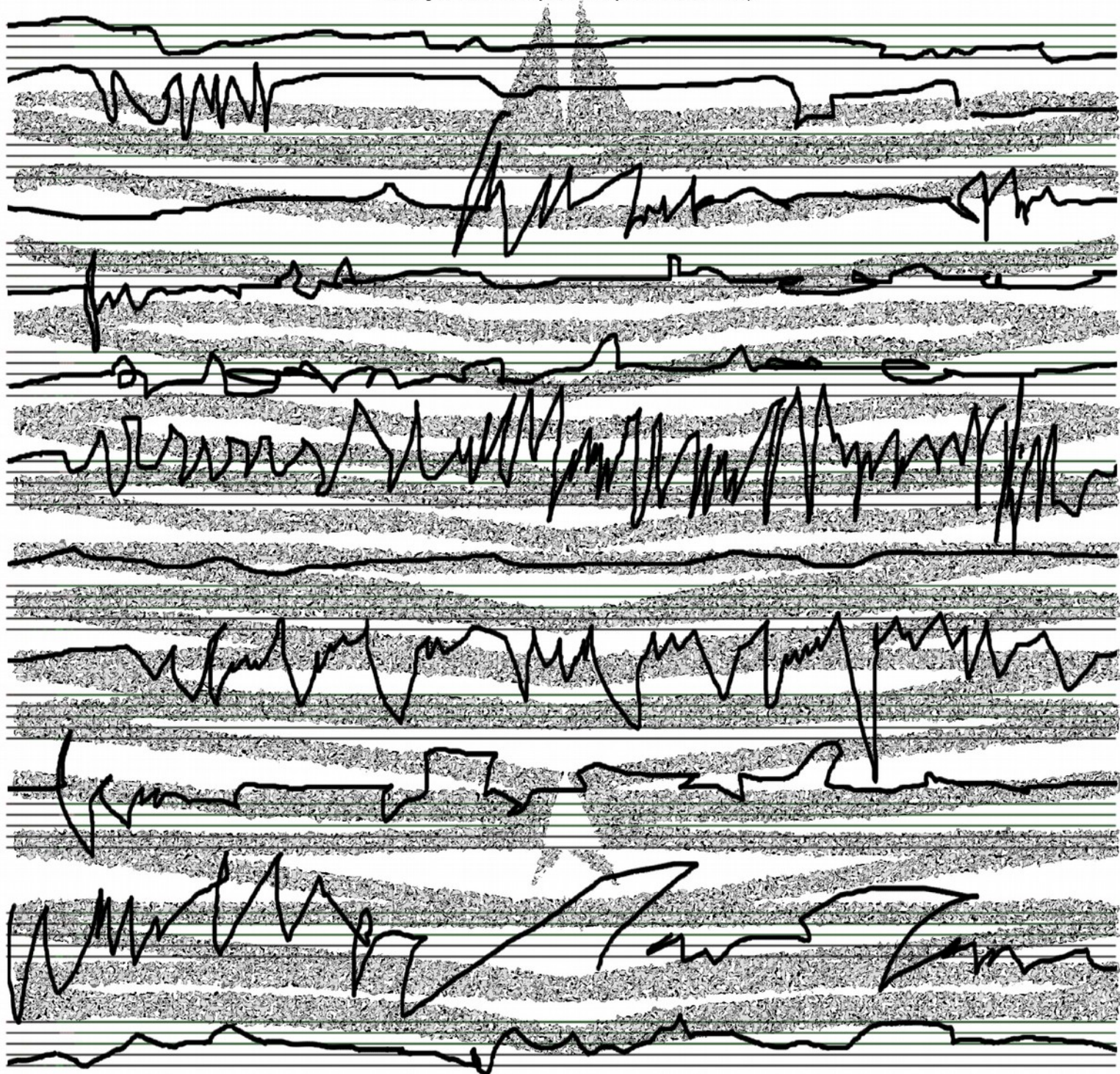
x0: 0.000 y0: 0.000 x1: 3543.307 y1: 3543.307 Width: 3543.307 Height: 3543.307 Units: px

Image size Width: 1000 pixels at 25.40 dpi Height: 1000 pixels at 25.40 dpi

Filename Documents/drawing-18.png Export As... Batch export all selected objects Hide all except selected Close when complete Export

Fill: N/A Stroke: N/A o: 0 Layer 1 No objects selected. Click, Shift+click, Alt+scroll mouse on top of objects, or drag around objects to select.

X: -173.75 Y: 1131.37 Z: 25%



```
prefix nfo: <http://www.semanticdesktop.org/ontologies/2007/03/22/nfo#>
prefix prov: <http://www.w3.org/ns/prov#>

select ?accessTime ?page ?fileUrl
from <http://localhost:8890/activity/1.0/{USERNAME}/activities>
from <http://localhost:8890/activity/1.0/{USERNAME}/activities/web>
where
{
    ?file a nfo:FileDataObject .
    ?file nfo:fileUrl ?fileUrl .

    ?editing prov:used ?file .
    ?editing prov:startedAtTime ?editingStart .
    ?editing prov:endedAtTime ?editingEnd .

    ?page a nfo:WebDataObject .

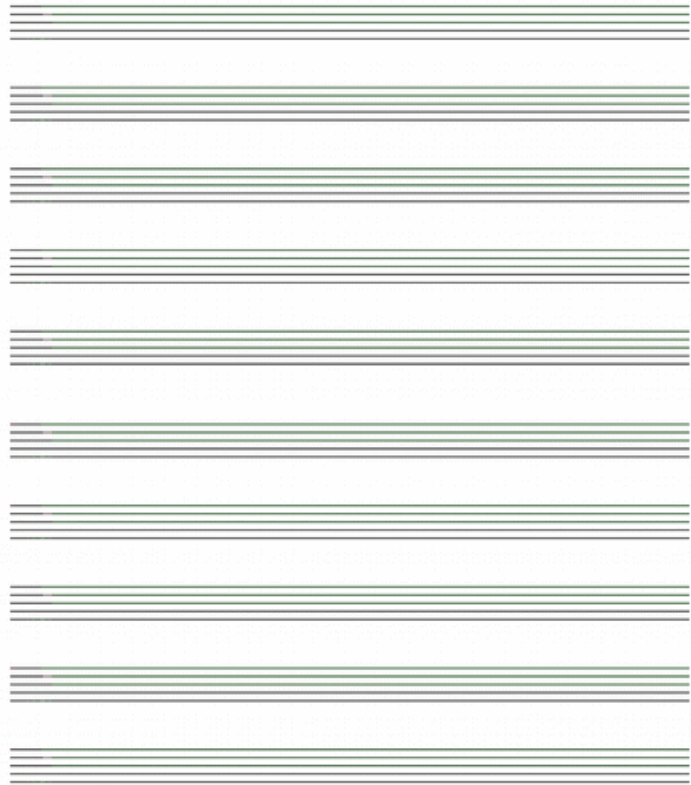
    ?browsing prov:qualifiedUsage ?pageUsage .

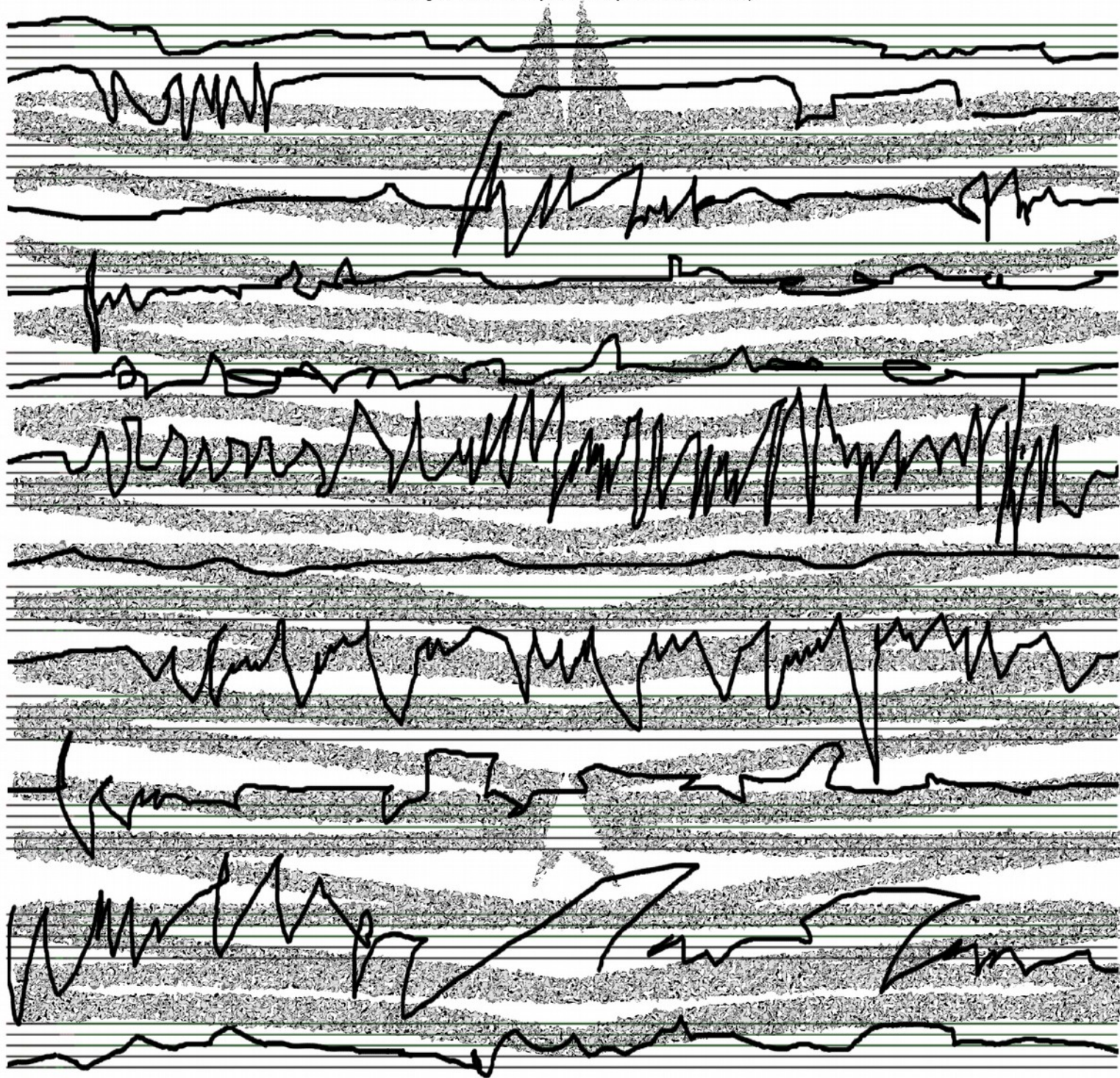
    ?pageUsage prov:entity ?page .
    ?pageUsage prov:atTime ?accessTime .

    filter(?editingStart <= ?accessTime && ?accessTime <= ?editingEnd)
}
order by desc(?accessTime) limit 50
```



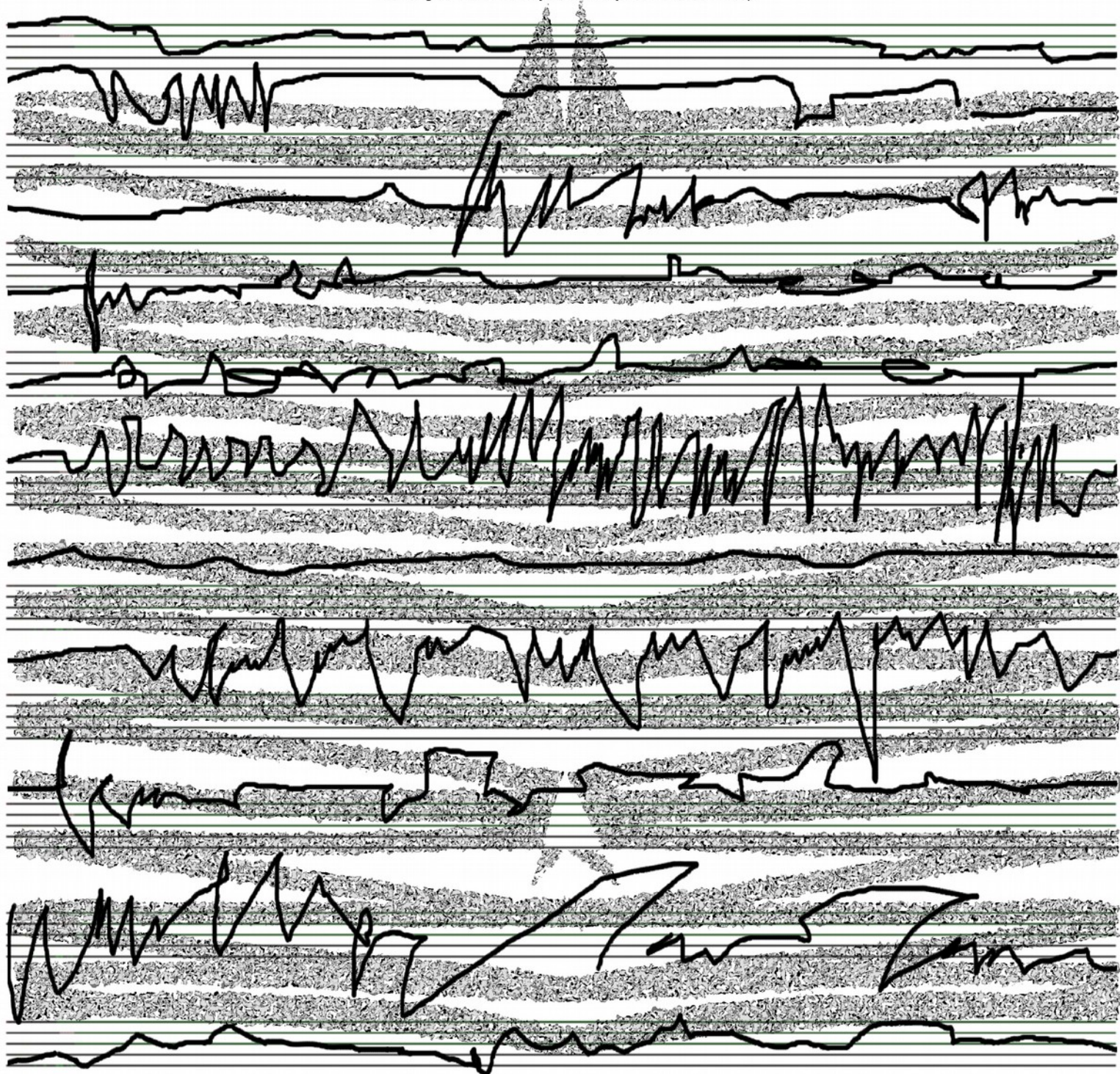








(wifi – GPS data, tbd)



# Potential answers

- One artist/artwork over time
  - development of work
  - development of technique

```
PREFIX rdf: <http://www.w3.org/1999/02/22-rdf-syntax-ns#>
PREFIX rdfs: <http://www.w3.org/2000/01/rdf-schema#>
PREFIX art: <http://w3id.org/art/terms/1.0/>
PREFIX dc: <http://purl.org/dc/elements/1.1/>
PREFIX prov: <http://www.w3.org/ns/prov#>

SELECT DISTINCT ?activity ?time ?type ?description WHERE
{
  ?activity prov:startedAtTime ?startTime .
  ?activity prov:endedAtTime ?endTime .

  ?influence a ?type .
  ?influence prov:activity | prov:hadActivity ?activity .
  ?influence prov:atTime ?time .
  OPTIONAL { ?influence dc:description ?description . }

  FILTER(?type in (prov:Generation, prov:Revision, prov:Invalidation, art:Undo, art:Redo))
}
ORDER BY DESC(?time)
```

# Speed of work / Undos

- Gino Ballantyne

Variance: 48.719

Average: 2.237

Total actions: 20580

Undos: 171

1 undo per 120  
actions

- Peter Gander

Variance: 28.12

Average: 1.52

Total actions: 53850

Undos: 319

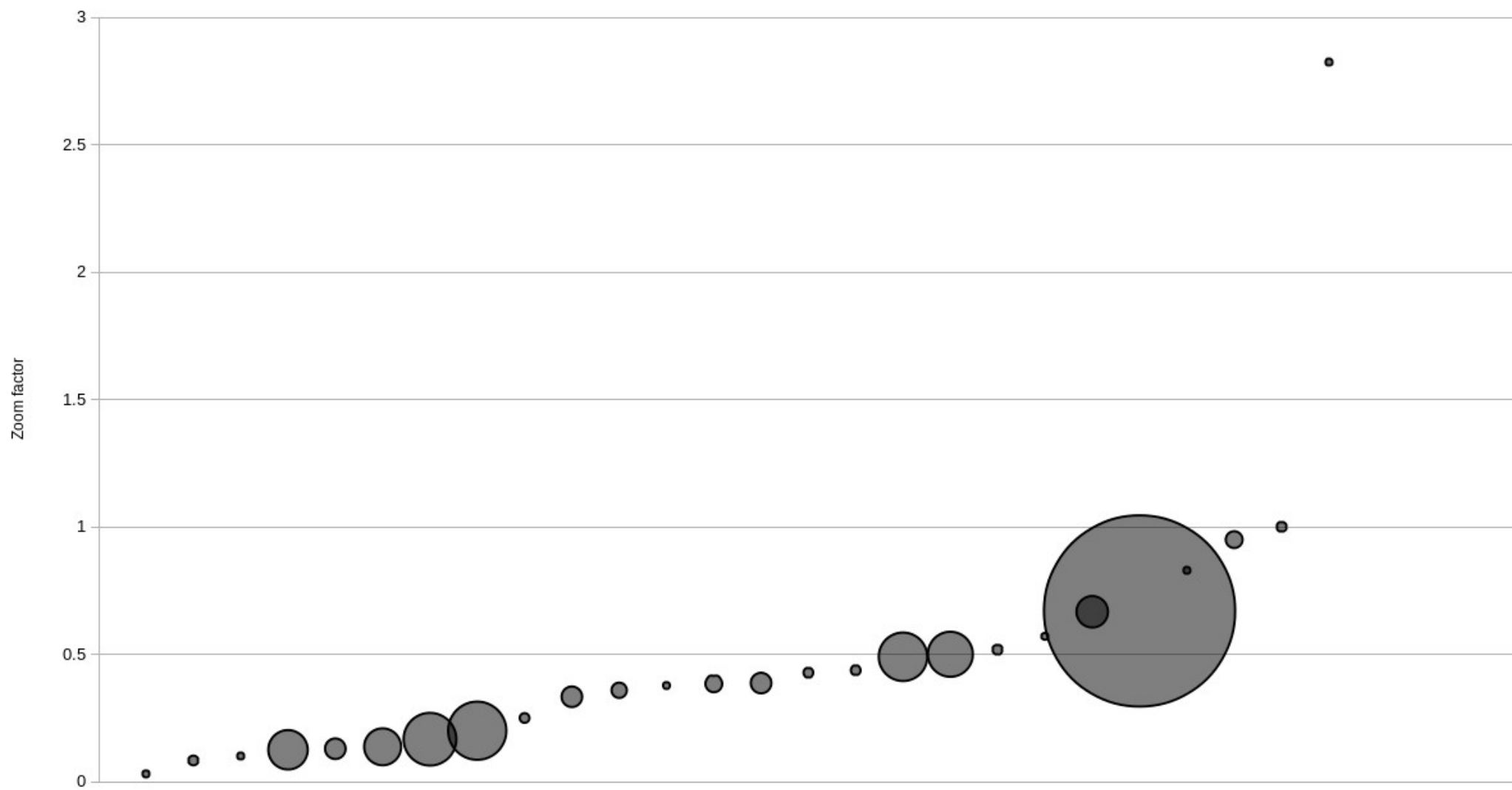
1 undo per 168  
actions

```
PREFIX rdfs: <http://www.w3.org/2000/01/rdf-schema#>
PREFIX art: <http://w3id.org/art/terms/1.0/>
PREFIX dc: <http://purl.org/dc/elements/1.1/>
PREFIX prov: <http://www.w3.org/ns/prov#>

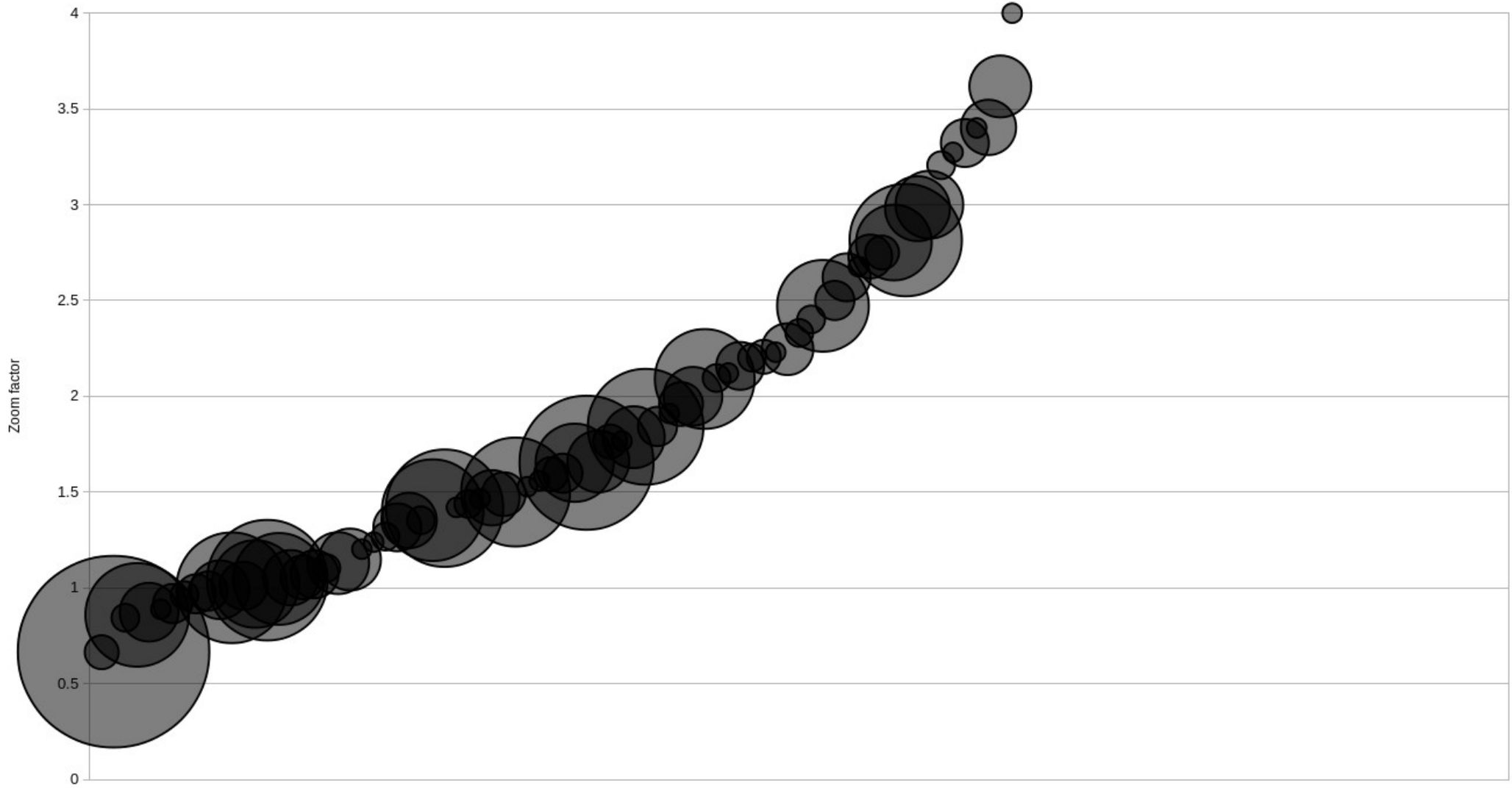
SELECT ?viewport ?factor WHERE {
  ?viewport art:zoomFactor ?factor .
}
```



Zoom factor (Gino)

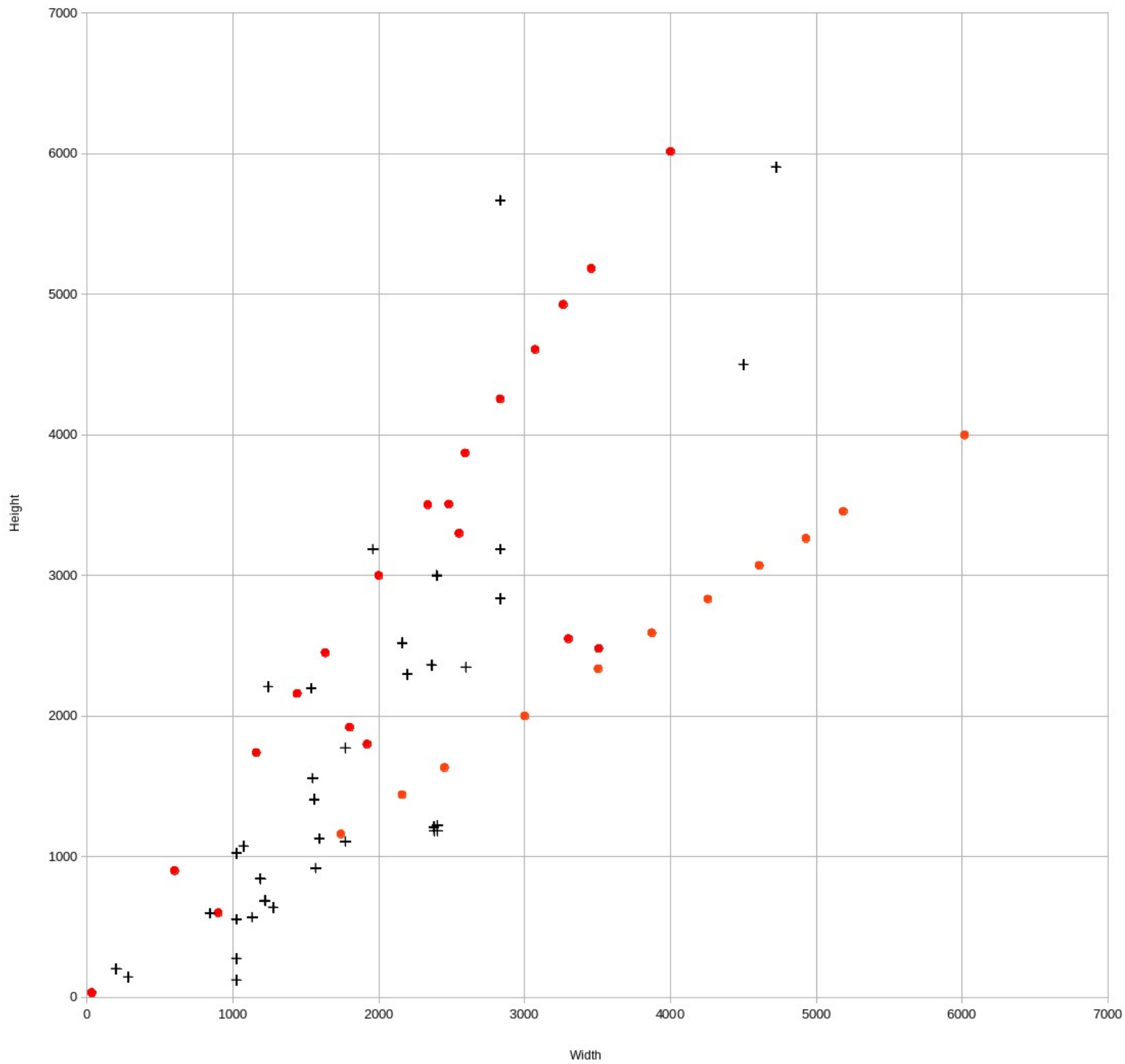


Zoom factor (Peter)

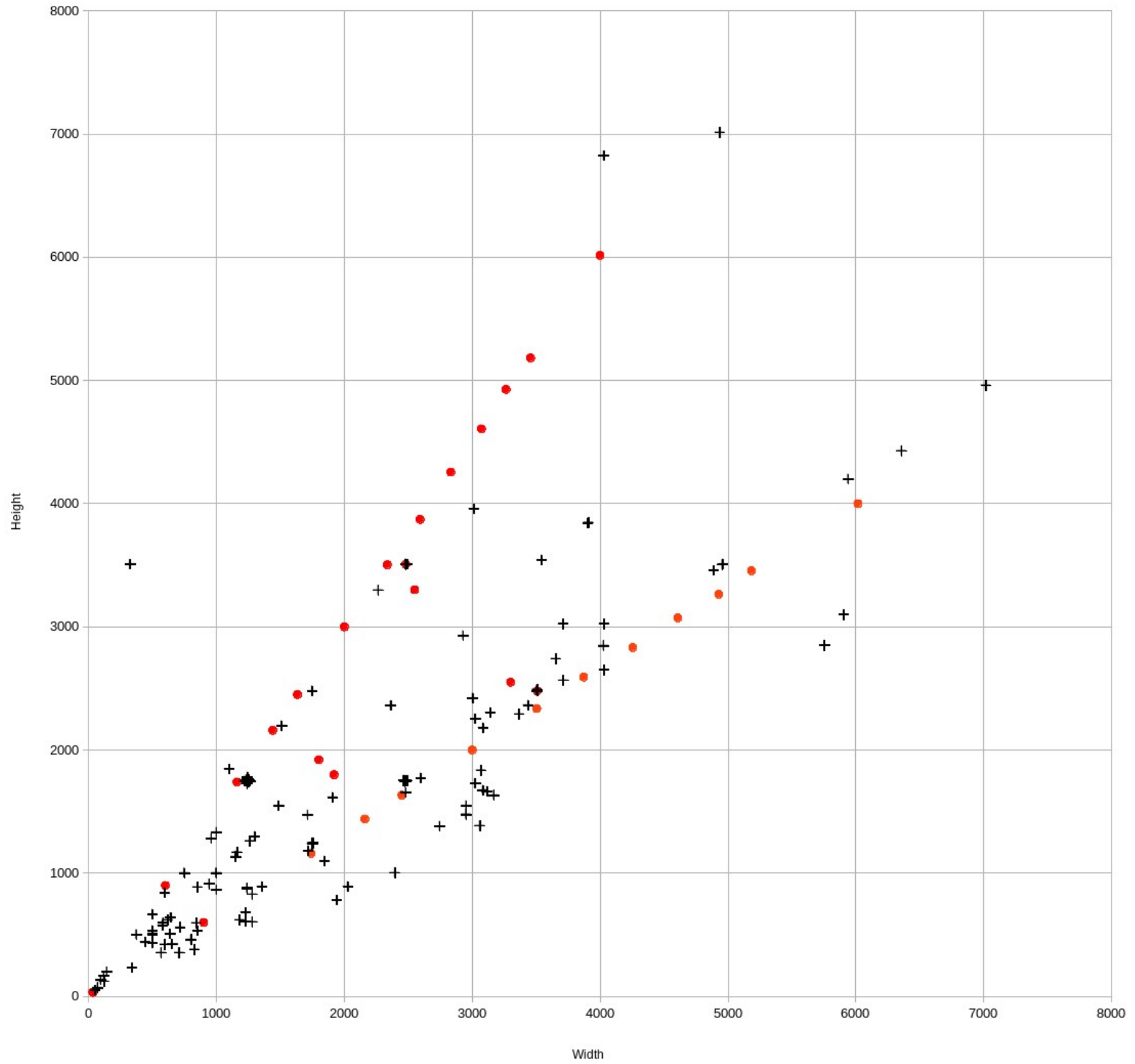


```
PREFIX rdf: <http://www.w3.org/1999/02/22-rdf-syntax-ns#>
PREFIX rdfs: <http://www.w3.org/2000/01/rdf-schema#>
PREFIX art: <http://w3id.org/art/terms/1.0/>
PREFIX prov: <http://www.w3.org/ns/prov#>
SELECT DISTINCT ?canvas ?width ?height ?p WHERE {
  ?canvas a art:Canvas .
  ?canvas ?p ?generation .
  FILTER (?p = prov:qualifiedGeneration || ?p = prov:qualifiedRevision) .
  ?generation art:hadBoundaries ?boundaries .
  ?boundaries art:height ?height .
  ?boundaries art:width ?width .
}
```

Canvas size (Gino)

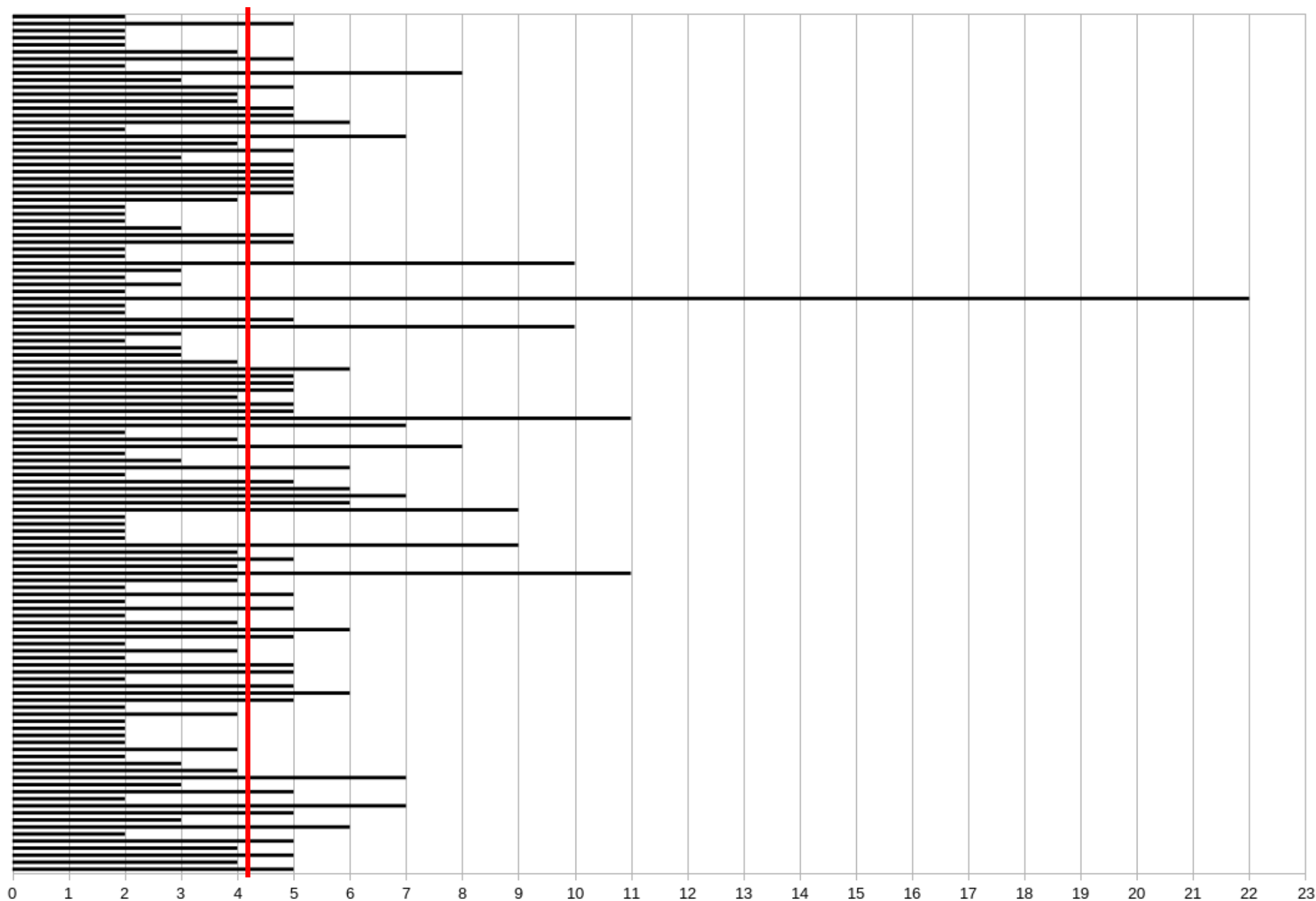


Canvas size (Peter)



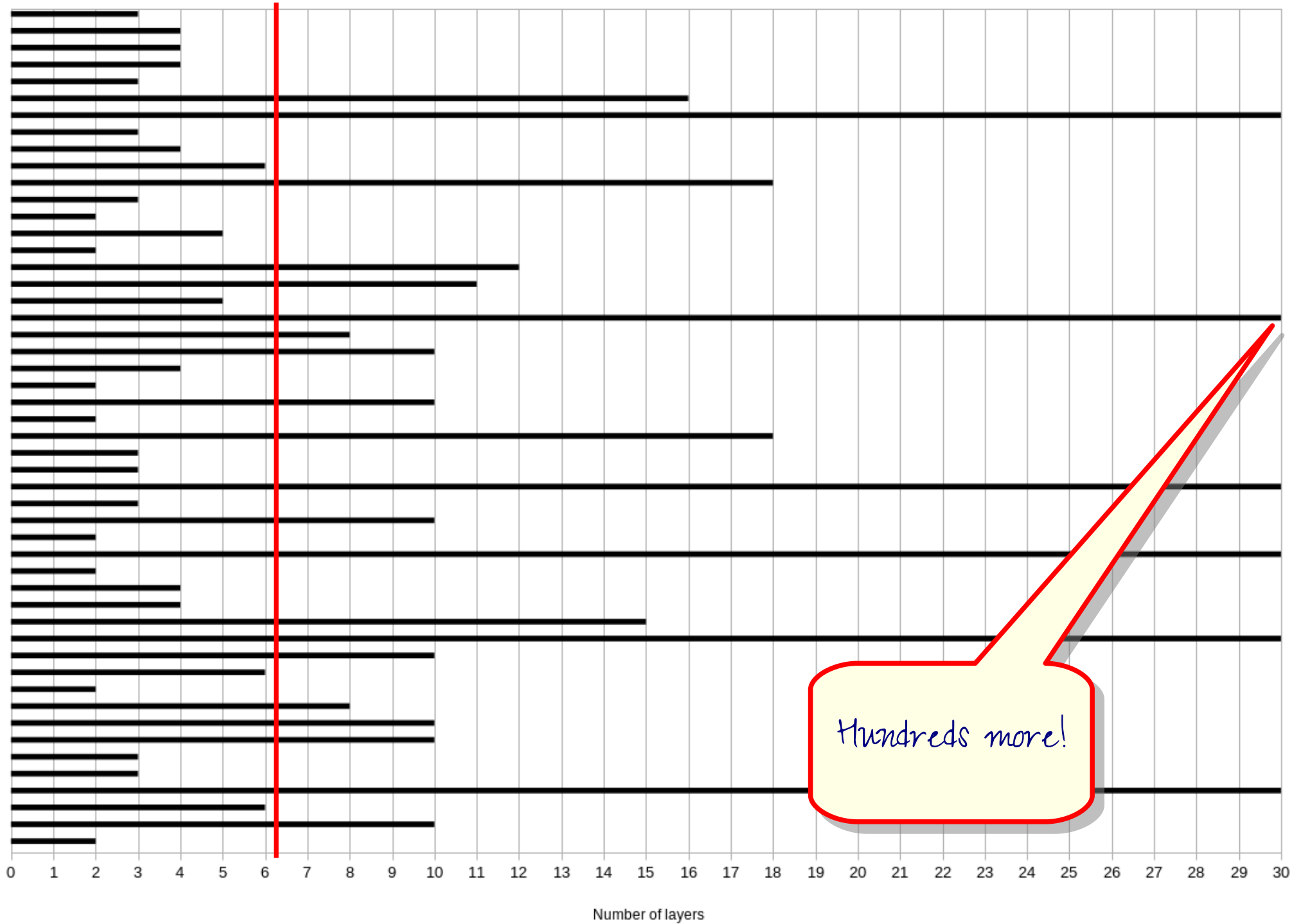
```
PREFIX rdf: <http://www.w3.org/1999/02/22-rdf-syntax-ns#>
PREFIX rdfs: <http://www.w3.org/2000/01/rdf-schema#>
PREFIX art: <http://w3id.org/art/terms/1.0/>
PREFIX dc: <http://purl.org/dc/elements/1.1/>
PREFIX prov: <http://www.w3.org/ns/prov#>
PREFIX nie: <http://www.semanticdesktop.org/ontologies/2007/01/19/nie#>
PREFIX nfo: <http://www.semanticdesktop.org/ontologies/2007/03/22/nfo#>
SELECT DISTINCT ?file ?filename ?layer ?layertitle WHERE {
  ?file a nfo:FileDataObject .
  ?file rdfs:label ?filename .
  ?entity nie:isStoredAs ?file .
  ?entity prov:qualifiedGeneration ?generation .
  ?generation prov:activity ?activity .
  ?activity prov:generated ?layer .
  ?layer a art:Layer .
  ?layer dc:title ?layertitle .
}
```

# Number of layers (Peter)



Number of layers

# Number of layers (Gino)





# Potential answers

- One artist/artwork over time
  - development of work
  - development of technique
- Many artists
  - overview of current trends
  - in an organisation/studio/class/department
- Many artists over time
  - Trends in digital arts over time
  - Trends in methods and online research

# Who cares?

- Artists
  - self-archiving
- Researchers interested in art history
  - data about context – mode of work
- Researchers interested in technique
  - data about software tools and settings
- Authenticity of digital art
  - show how you did it

# Who else?

- Group design
  - attribution – justification – annotation
- **University administration**
  - **provide data for REF**
- Teaching / learning
  - share instructions – automated assessment – evaluate exercises
- Developers of creative software
  - find out about the popularity / use of features
- Repository managers / digital archivists
  - collect data for long term preservation

# Platform Support

## Operating Systems



Ubuntu



Mac OS X



Windows

## Creative Tools



Inkscape



Krita



Photoshop CC



Illustrator CC

## Web Browsers



Mozilla Firefox



Google Chrome



Opera



<http://activity.io>

**We need more data!**

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