Theoretical computer science: art or science?

(or rather loose observations on both topics)

Filip Mazowiecki

University of Warsaw

Logic Mentoring Workshop 2024

Tallin

Outline

1. **Happy few**

2. Terribles simplificateurs

3. Duty of genius

4. Imposter syndrome

Is art useful?

No need (and time) for a formal analysis

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Purpose of art:

- Does not need to seek for attention (but can)
- Needs to impact some people (audience = **happy few**)

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- ...you get the point

Understanding comics: the invisible art

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  Yet, I start a LICS paper with:

> Workflow nets are a well-established variant of Petri nets
> for the modeling of process activities such as business processes

Short summary

- We're objectively few

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- We're objectively few
- With identification problems

Short summary

- We're objectively few
- With identification problems
- Should we look up to ML?

Outline

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2. **Terribles simplificateurs**

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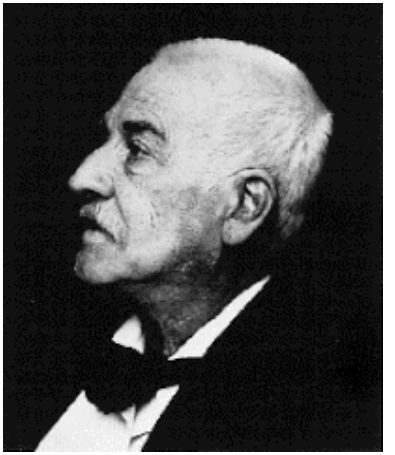
Jacob Burckhardt: terribles simplificateurs

Born in Basel in 1818

Historian of art



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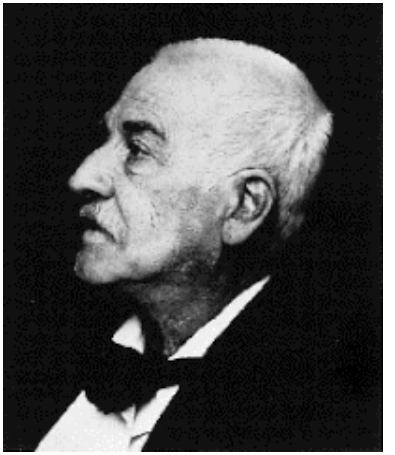

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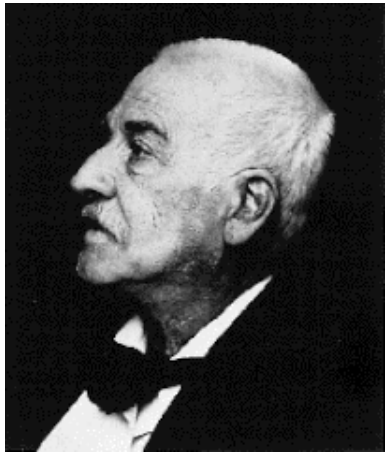

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Famously wrote in a letter:

"My mental picture of those terribles simplificateurs [simplifiers]
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It can be referred to people that need a general purpose for doing things:

e.g. **practical applications**

Terribles simplificateurs in action

- How to compare books?

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  Simple solution $f : Books \to \mathbb{Q}$

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- We do this:

  $f : Conferences \to \{A^*, A, B, C\}$

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$$f(\text{LICS}) = A^* > A = f(\text{ICALP})$$

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OVERALL EVALUATION: 2 (accept)
REVIEWER'S CONFIDENCE: 3 (medium)

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"Due to the brevity,
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- But Reviewer #2 might be right

"Personally, I find the methods used in the article far more interesting
than the actual main result."

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C PROOF FOR LEMMA 4

Proof. Before proving our lemma, we first show a well-known result that we will later reduce our problem to: $\mathbb{N}^k$ is countable for every $k \in \mathbb{N}$, i.e. finite Cartesian product of countable sets is countable. We observe that it suffices to show $\mathbb{N} \times \mathbb{N}$ is countable, because the proof then follows clearly from induction. To show $\mathbb{N} \times \mathbb{N}$ is countable, we construct a bijection ϕ from $\mathbb{N} \times \mathbb{N}$ to $\mathbb{N}$ as

$$\phi(m, n) = 2^{m-1} \cdot (2n - 1)$$

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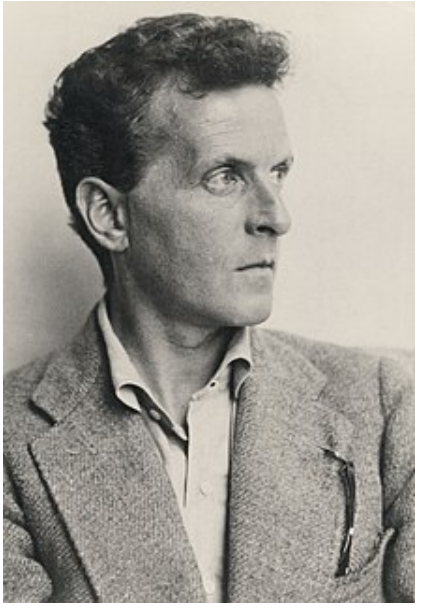

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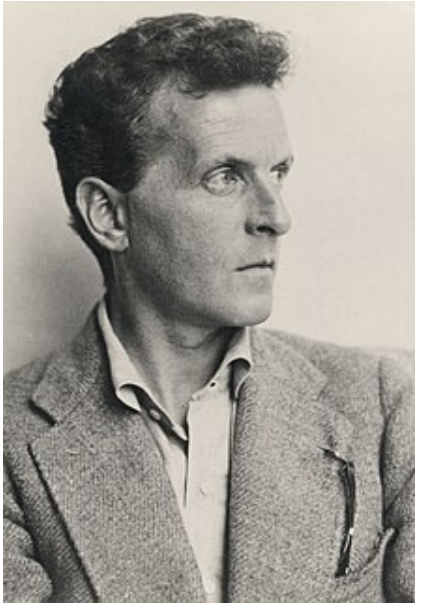

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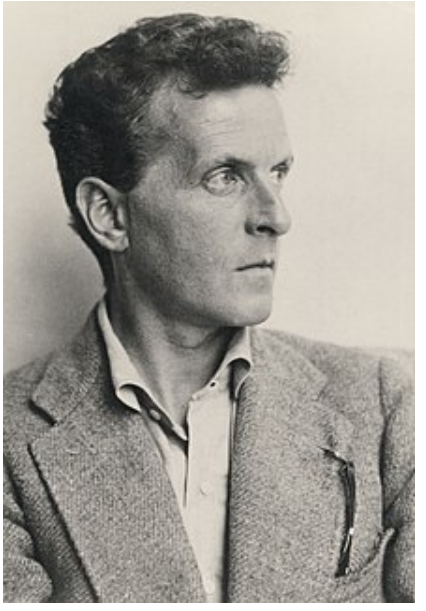

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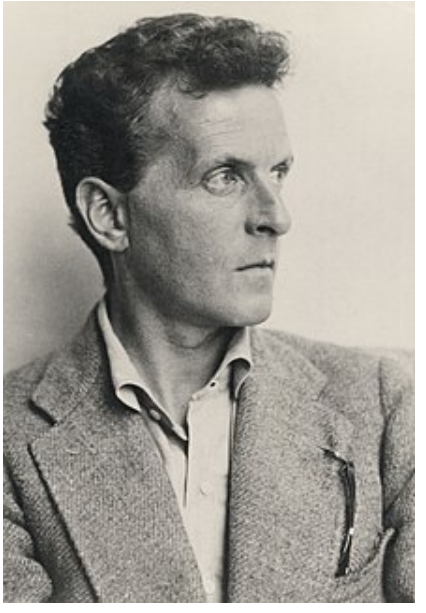

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- Probably thanks to her stubbornness and belief
  Vincent van Gogh was finally appreciated

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- Belief in importance is an important factor

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Jethro Tull's album from 1972

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"mother of all concept albums"

JETHRO TULL
FEATURE ON PAGE 7

The St. Cleve Chronicle & Linwell Advertiser

Friday January 7th 1972 No.1003 Price 3p Weekly

THICK AS A BRICK

JUDGES DISQUALIFY "LITTLE MILTON" IN LAST MINUTE RUMPUS

THE SOCIETY FOR LITERARY ADVANCEMENT AND GESTATION, (SLAG), announced their decision late last night to disqualify eight year old prizewinner Gerald (Little Milton) Bostock following the hundreds of protests and threats received after the reading of his epic poem "Thick as a Brick" on B.B.C. Television last Monday night.

A hastily reconvened panel of Judges accepted the decision by four leading child psychiatrists that the boy's mind was seriously unbalanced and that his work was a product of an "extremely unwholesome attitude towards life, his God and Country". Bostock was recommended for psychiatric treatment following examination "without delay". The first prize will now be presented to runner up Mary Whiteyard (aged 12) for her essay on Christian ethics entitled, "He died to save the little Children".

The Literary Competition, which was for children aged from 7 to 16 years of age, was sponsored by leading national newspapers and received thousands of entries from schools all over Britain. Mr. Humphrey Martin, the Headmaster of Moordale Primary School said Gerald, nicknamed "Little Milton" by his English master because of his poetic ability, was mentally advanced for his age, although inclined on occasions to obscure and verbose assertions which led him to being somewhat un-popular with his schoolmates He went on to say that without doubt the child had a great future academically and that his progress was unsurpassed in the history of Moordale Primary. Gerald and his parents moved to St. Cleve four years ago from Manchester when Mr. Bostock decided for health reasons to live away from the City. David Bostock now does occasional gardening work while his wife Daphne is well known to the Congregation of St. Cleve Parish Church for her activities in social work and her wonderful buffet luncheon at the fete last Saturday. Well done, Daphne! Mr. Bostock said this morning of "Little Milton's" disqualification, "We are heartbroken at the way the Judges changed their minds, and the loss of the prize money and scholarship means we shall find difficulty in paying the instalments on Gerald's Encyclopaedia Britannica. I shall have to do Dr. Munson's roses next week after all." When he heard of the decision against him, Gerald went to his room and locked the door. "Mrs. Bostock and I are sorely vexed at the way this has turned out", said Mr. Bostock of No.6 Pollitt Close, St. Cleve.

LATE EXTRA

Special edition digitally remastered featuring previously unreleased live material from Madison Square Garden and an interview with members of Jethro Tull.

Mongrel dog soils actor's foot

The cameras were rolling film actor Robert E. Levi was addressing his men in the making of his new film "Biggles and the snake-women" when a mongrel dog soiled his foot. The dog belonged to Japanese make-up artist Tatu Tuyu who recently became resident in St. Cleve. He explained later poor Poopsie was taken short. Picture on page 8.

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Introduction:

Really don't mind if you sit this one out

My word's but a whisper, your deafness a shout

I may make you feel but I can't make you think

Crash course for students at conferences

You're often told that presentations are important (most important?)

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Definition 4.15. Property $\mathcal{P}_k$ is defined as the conjunction of these properties:

(1) Places i and f are not resetable;
(2) There is a full reset run $\{i : z\} \to^{\zeta} \{f : z\}$ in $\mathcal{W}$;
(3) $\mathcal{W}^s$ is a workflow net which is generalised sound;
(4) It is not possible to strictly cover $\{f : k\}$ starting from $\{i : k\}$, where "strictly cover" means reaching some marking $\boldsymbol{m} > \{f : k\}$. We call this property *coverability-clean*;
(5) The last property is more complex. Consider the following set of markings:

$$X := \left\{ \boldsymbol{m} \in \mathbb{N}^P \setminus \{\mathbf{0}\} : \boldsymbol{m} \not\to^* \uparrow\{f : 1\} \right\}.$$

In words, these are the nonzero markings that cannot mark

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- Similar advice for conference papers

  ("all proofs can be found in the appendix, soon available somewhere")

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(2) There is a full reset run $\{i : z\} \to^{\zeta} \{f : z\}$ in $\mathcal{W}$;
(3) $\mathcal{W}^s$ is a workflow net which is generalised sound;
(4) It is not possible to strictly cover $\{f : k\}$ starting from $\{i : k\}$, where "strictly cover" means reaching some marking $\boldsymbol{m} > \{f : k\}$. We call this property *coverability-clean*;
(5) The last property is more complex. Consider the following set of markings:

$$X := \left\{ \boldsymbol{m} \in \mathbb{N}^P \setminus \{\mathbf{0}\} : \boldsymbol{m} \not\to^* \uparrow\{f : 1\} \right\}.$$

In words, these are the nonzero markings that cannot mark

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But it's important

I may make you feel but I can't make you think

Judging our work

We evaluate both motivation and technical content

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  My favorite example is pushdown VASS

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- We share something with art
  (but one shouldn't push too much this comparison)