THANK YOU

Nachum Dershowitz

Dziękuję

Nachum Dershowitz

EVE

Inc. 23

Inc. 23

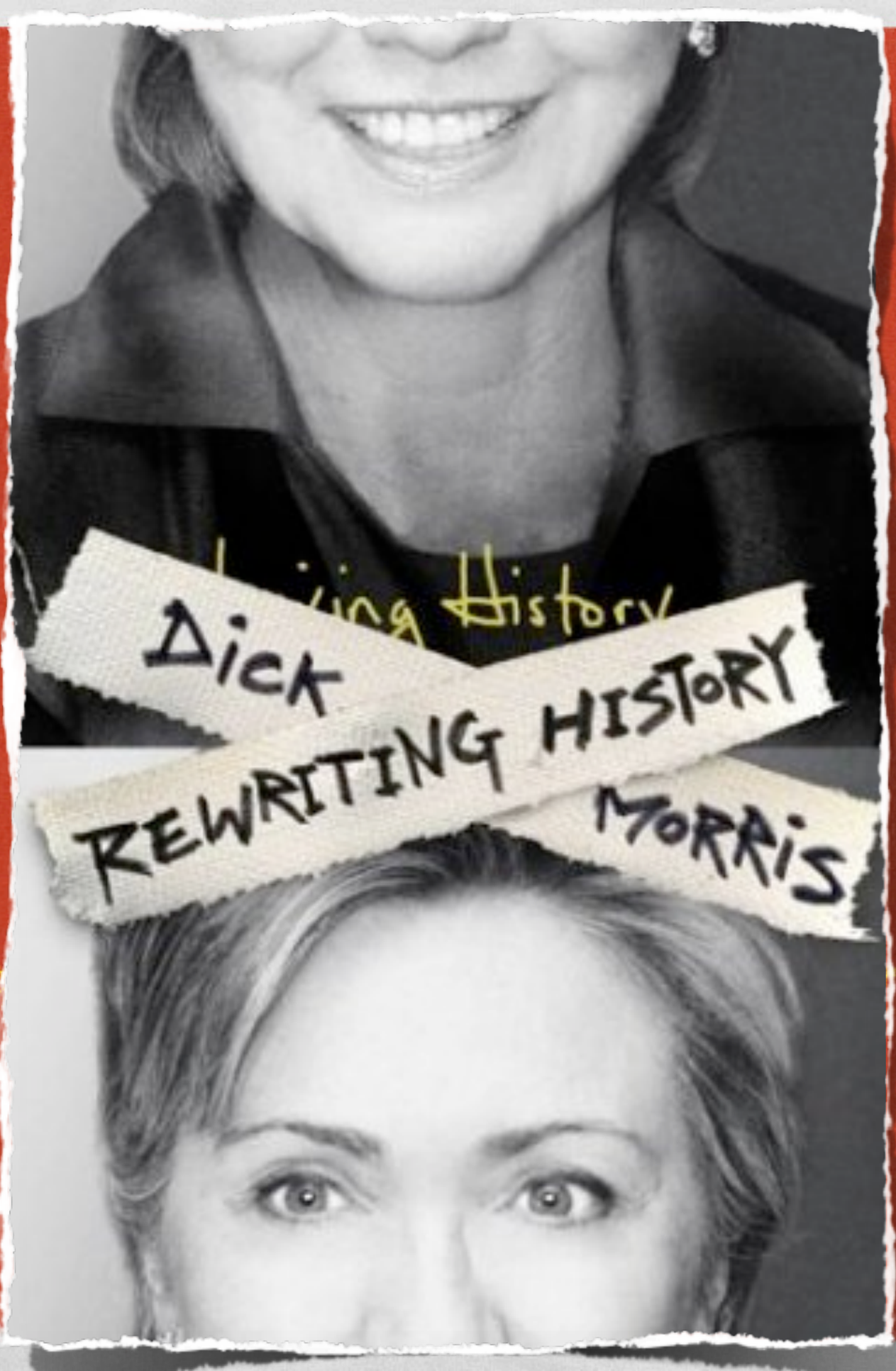
Shakespeare

- I can no other answer make but thanks/ And thanks...
- What's to do? Shall we go see the reliques of this town?
- To-morrow, sir: best first go see your lodging.
- I am not weary, and 'tis long to night: I pray you, let us satisfy our eyes/ With the memorials and the things of fame/ That do renown this city.

History

Histories

- Martin Davis
- Wolfgang Bibel
- Peter Andrews
- Ewing Lusk
- ...


Dick
REWRITING HISTORY
MORRIS


roots

Agenda

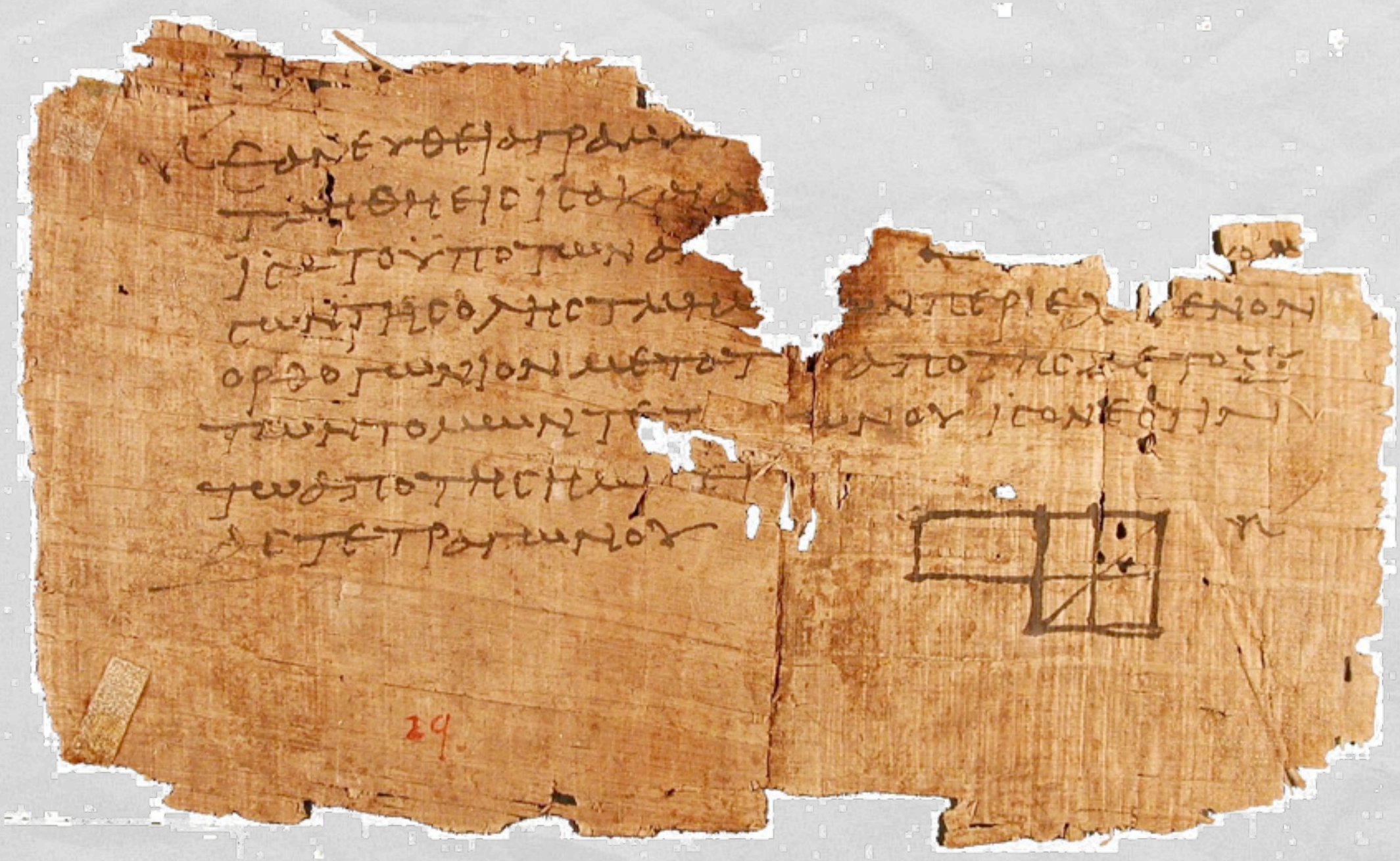
- Much have I learned from my teachers,
- more so from my colleagues,
- but most of all from my students.

- Talmud

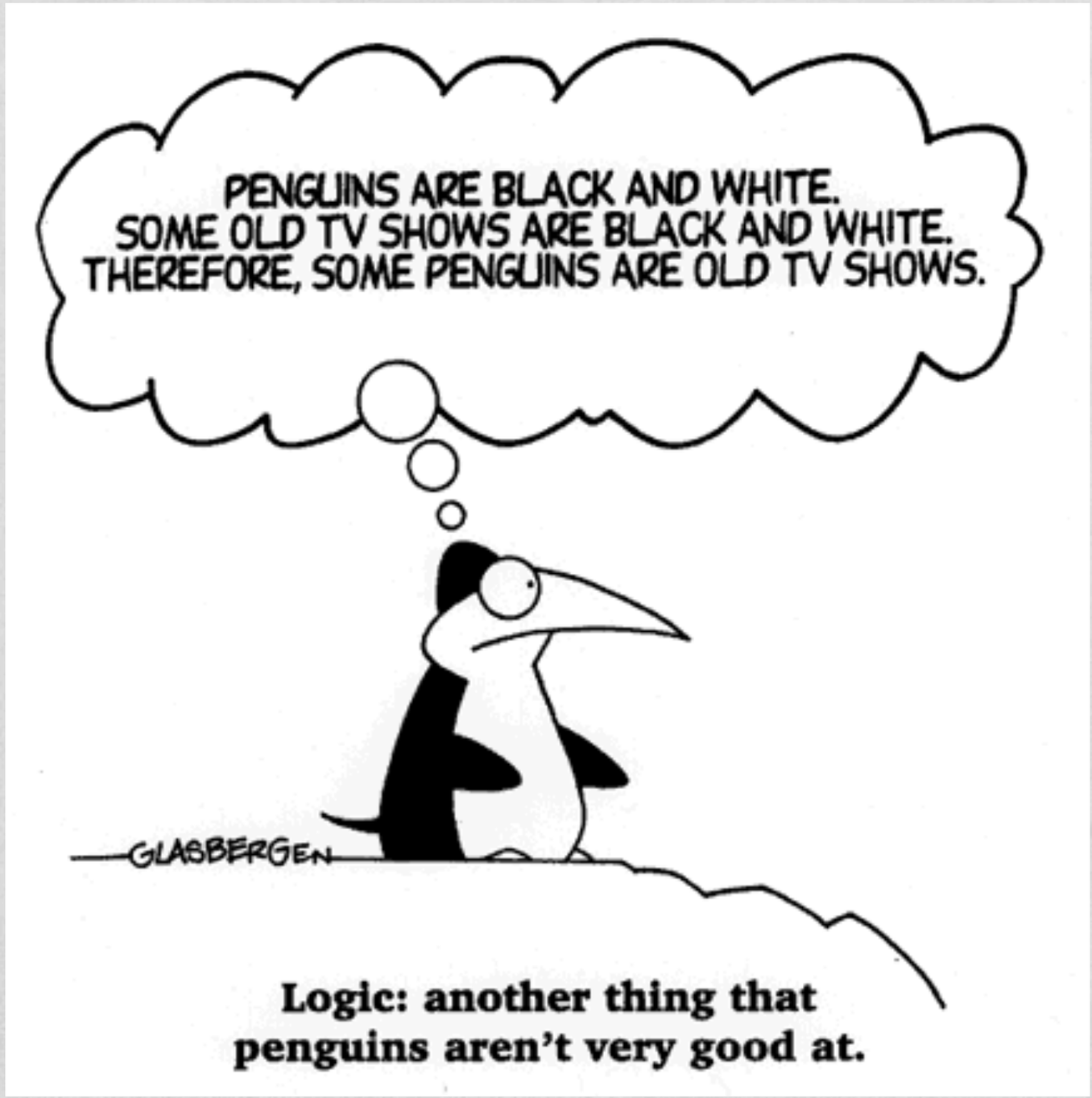
My Teachers

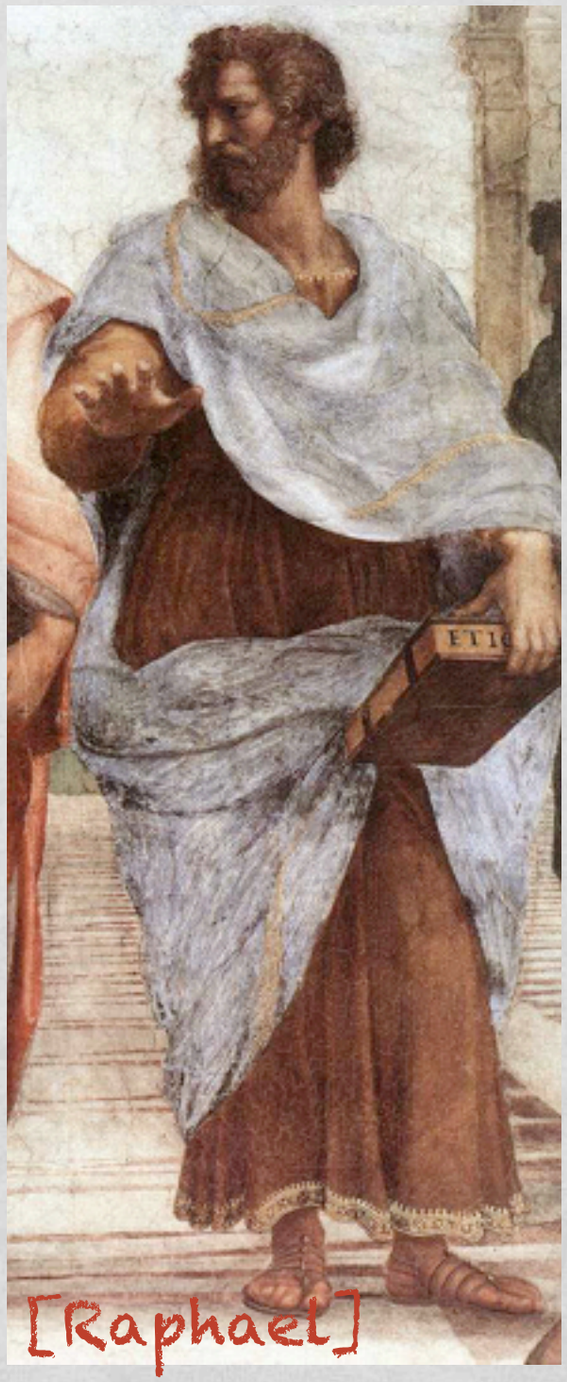
Natural Deduction

Euclid (-400)



Aristotle (-350)





Human Deduction

Zeroth-Order Logic

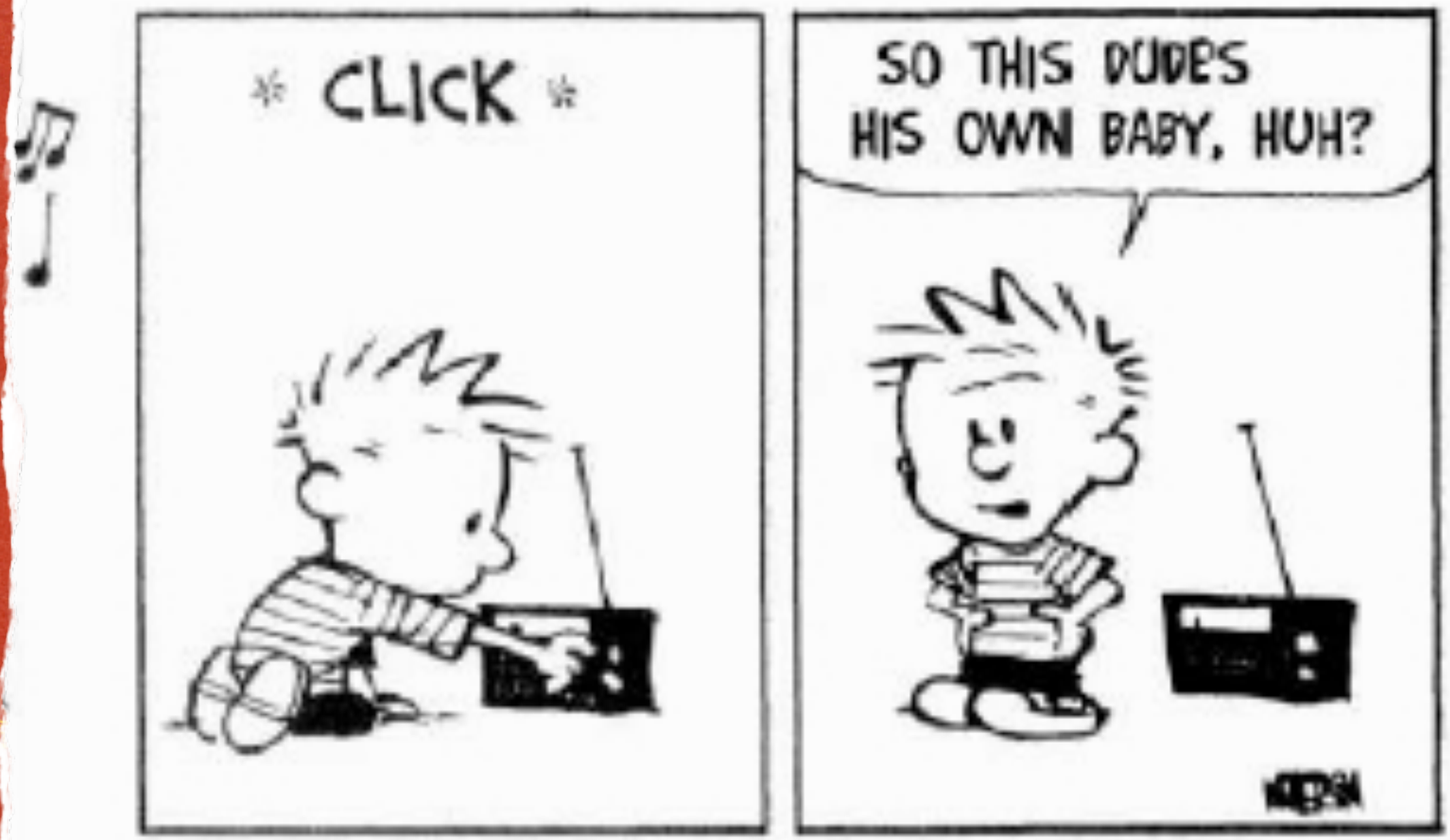
First-Order Logic

"Everybody Loves My Baby
(But My Baby Loves Nobody But Me)"

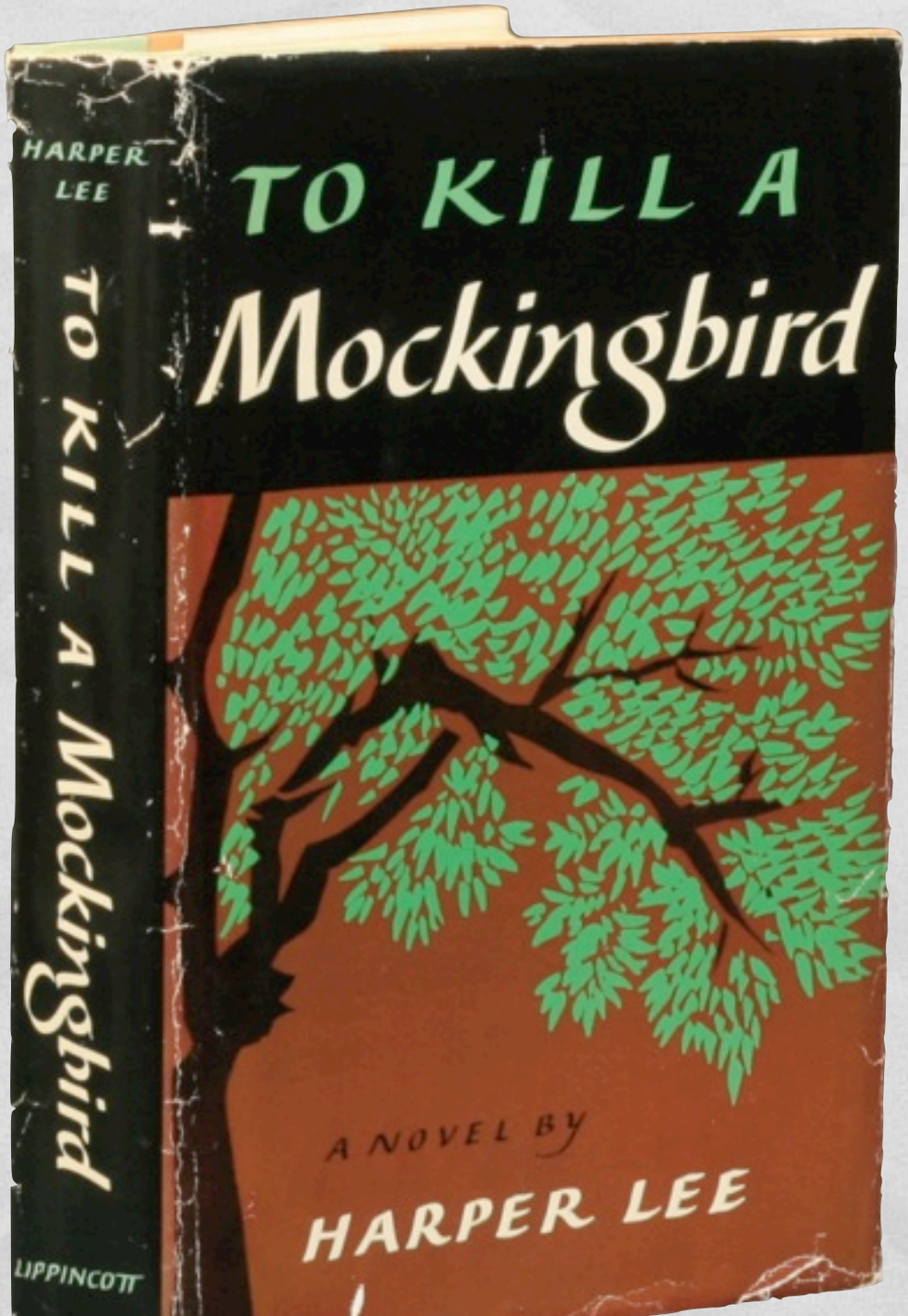
-- Jack Palmer & Spence Williams, 1924

EVERYBODY LOVES
MY BABY

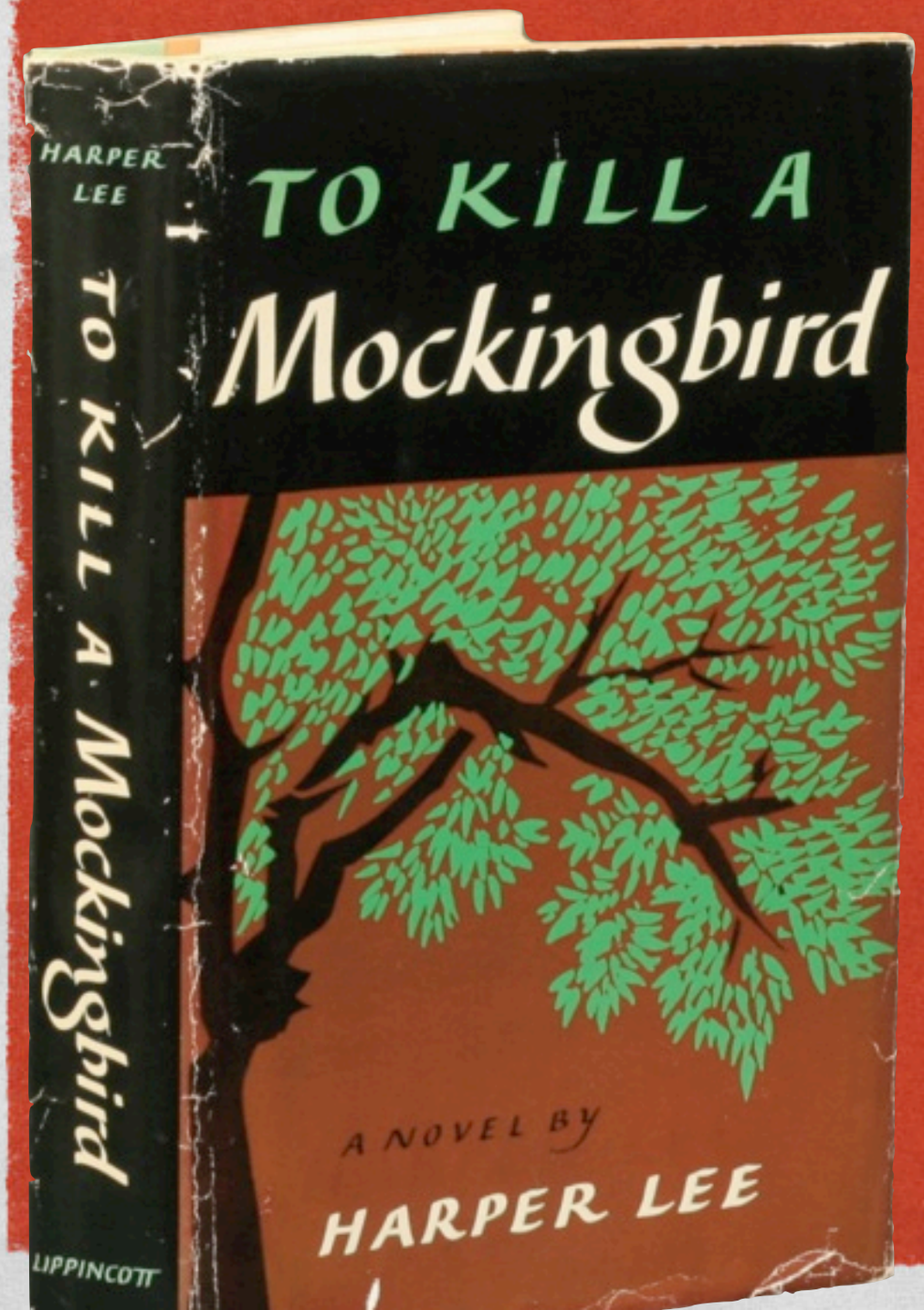
BUT MY BABY
LOVES NOBODY
BUT ME


* CLICK *
SO THIS DUDES HIS OWN BABY, HUH?

Higher Logic



There is no man living who has never looked upon a woman without desire.



There is no man living who has never looked upon a woman without desire.

Robert Lowth

1762

abolished double negatives in English as "illogical"

BEYONCÉ

BEST THING I NEVER HAD

You turned out to be the best thing I never had.

And I will always be the best thing you never had.

Polish:

Nikogo nie widziałem

(I didn't see nobody)

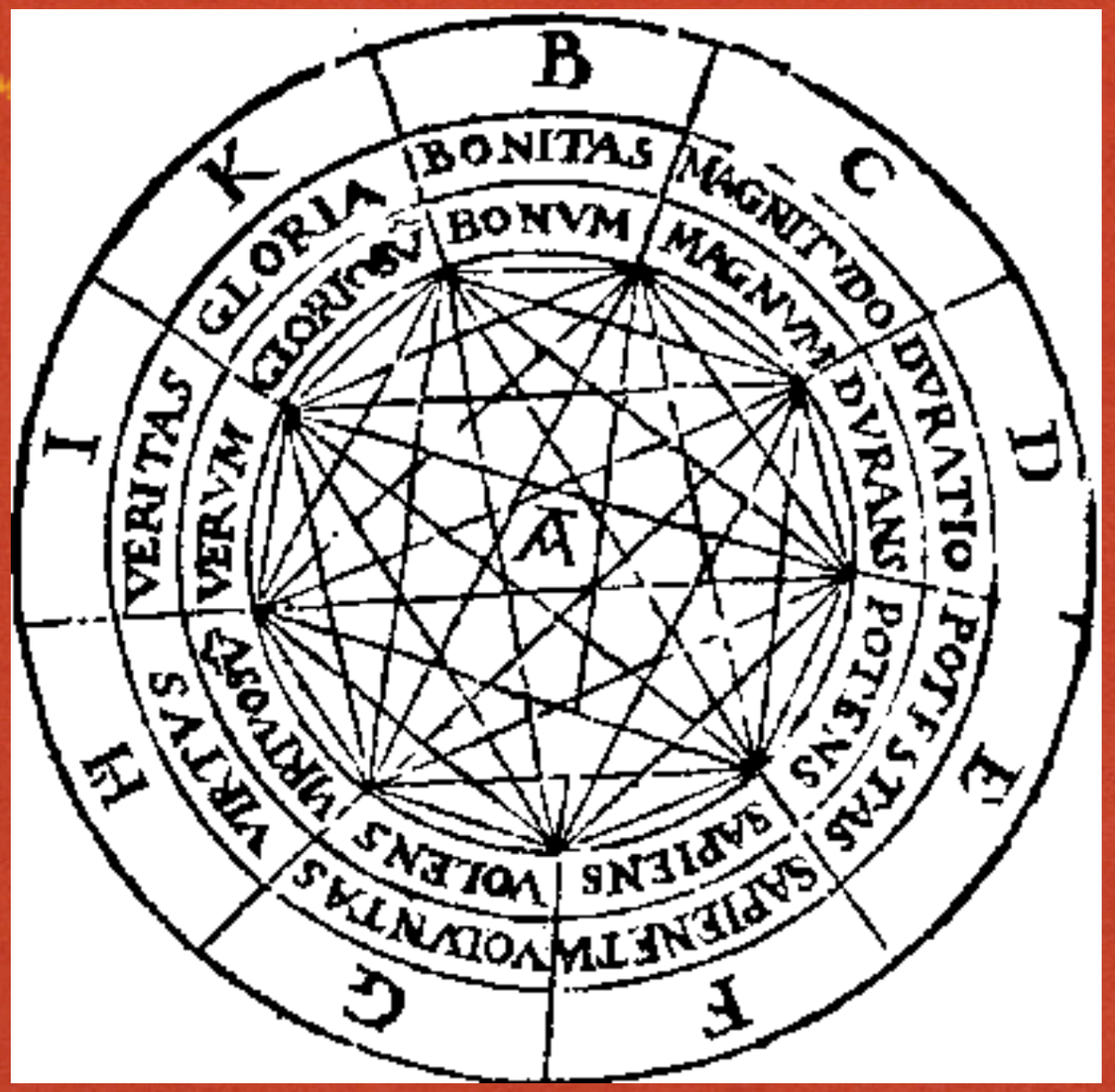
Serbian:

Niko nikada nigde ništa nije uradio

(Nobody never didn't do nothing nowhere)

Automated Deduction

Ramon Lull (1274)



Raymondus Lullus

Ars Magna et Ultima

Georg Ferdinand Ludwig Philipp Cantor on Lull

Eine Gemenge von Logik, kabbalistischer und eigener Tollheit, unter welches, man weiss nicht wie einige Körner gesunden Menschenverstandes geraten sind.

Gottfried Wilhelm Leibniz (1666)

The only way to rectify our reasonings is to make them as tangible as those of the Mathematician, so that we can find our error at a glance, and when there are disputes among persons, we can simply say: Let us calculate, without further ado, in order to see who is right.

Ada Lovelace

Many persons ... imagine that because [Babbage's Analytical Engine] give[s] its results in numerical notation, the nature of its processes must ... be arithmetical and numerical rather than algebraical and analytical.

This is an error!

David Hilbert's Entscheidungsproblem

#2. Provide an effective method to determine whether a formula is valid.

David Hilbert's "Lost" Problem

#24. Criteria of simplicity, or proof of the greatest simplicity of certain proofs.

Jules Henri Poincaré

We might imagine a machine where we should put in axioms at one end and take out theorems at the other, like that legendary machine in Chicago where pigs go in alive and come out transformed into hams and sausages.

Jacques Herbrand

1908 - 1931

UNIWERSYTET WARSZAWSKI

DOWÓD OSOBISTY
AKADEMICKI

Student Wydz. Filozof.-matem.

Presburger Mojżesz

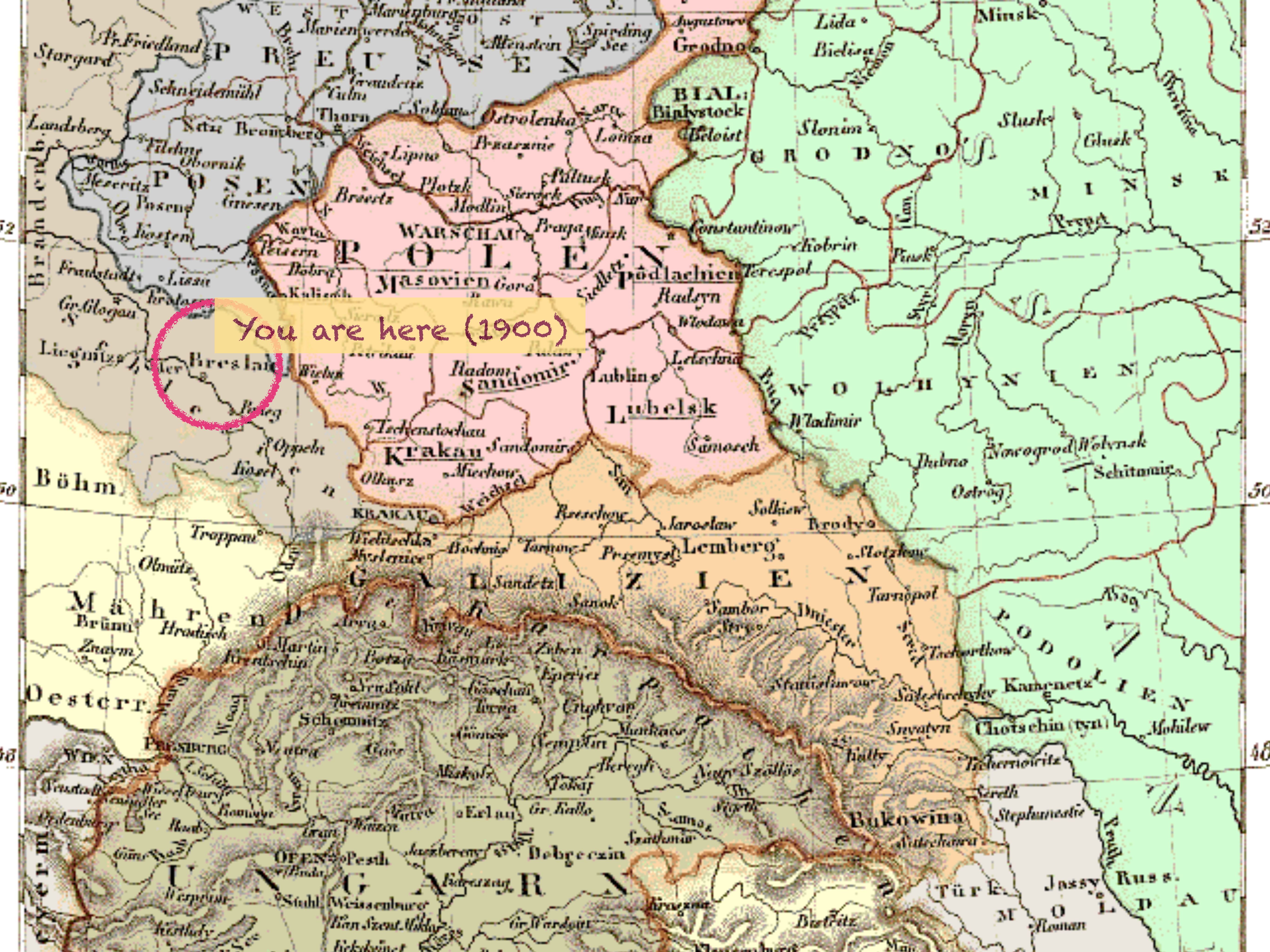
jest zapisan. *w Albumie Uniwersytetu Warszawskiego pod L.* 16495

t. cz.
REKTOR

Mojżesz Presburger

1904 - 1943

My Family


You are here (1900)
PREUSSEN
POSEN
POLEN
WARSCHAU
Masovien
Podlachien
Sandomir
Lubelsk
Krakau
GALIZIEN
WOLHYNIEN
PODOLIEN
MINSK
GRODNO
BIAL:
Bialystock
Böhm.
Mähren
Oesterr.
UNGARN
MOLDAU
Bukowina
Türk.
Russ.
Breslau
Oppeln
Troppau
Olmütz
Brünn
Znaym
Posen
Gnesen
Bromberg
Thorn
Culm
Graudenz
Schneidemühl
Stargard
Landsberg
Liegnitz
Gr. Glogau
Fraustadt
Lissa
Kalisch
Lublin
Radom
Lemberg
Jaroslaw
Brody
Tarnopol
Czortkow
Kamenetz
Chotschin
Mohilew
Jassy
Roman
Schitomir
Ostrog
Dubno
Nowograd Wolynsk
Wladimir
Kobrin
Pinsk
Slonim
Sluck
Gluck
Minsk
Lida
Grodno
Augustowo
Lomza
Ostrolenka
Pultusk
Modlin
Plotzk
Lipno
Praga
Siedlce
Radzyn
Terespol
Constantinow
Czenstochau
Miechow
Sandomir
Rzeszow
Bochnia
Tarnow
Przemysl
Sambor
Stryj
Stanislawow
Sniatyn
Czernowitz
Sereth
Suczawa
Schemnitz
Kaschau
Eperies
Munkacs
Tokaj
Erlau
Debreczin
Pesth
Ofen
Wien
Pressburg
Gr. Wardein
Bistritz
Weichsel
Bug
San
Dniester
Pruth
Bog
Prypet
Odra
Warta
Narew
Niemen
Beresina
52
50
48

Galicia c. 1880

Kielce
Zawichost
Sandomirz
Radomysl
Koperzewnica
Tarnobrzeg
Polaniec
Baranow
Pacanow
R. Vistula
Opatowiec
Dembick
Mielec
Kolbuczow
Soltolow
Lezajsk
Dombrowna
Radomsyl
Zabno
Uscie Solne
Dembica
Tarnow
Pilsno
Czudec
Brzesko
Tuchow
Brzostek
Frysztak
Jaslo
Czchow
Limanow
Gorlice
Neu Sandec
Alt Sandec
Grybow
Rabe R.
Jaslisko
Rzeszow
Lancut
Przeworsk
Jaroslaw
Tyczyn
Stryszow
Dubiecko
Dynow
Przemysl
Brzozow
Krosno
Rymanow
Sanok
Dukla
Zawigrod
Osiek
Riecz
Zakszewczyn
Czarnkowice
Tarnogrod
Rudnik
Ulanow
Bilgoray
Zamosc
Tomaszow
Blazow
Soltolow
Lezajsk
Grodzisko
Oleszyce
Wielkie Oczy
Jaworow
Janow
Sadowa Wisznia
Mosciska
Grodek
Sambor
Starasol
Stare Miasto
Dobromil
Felsztyn
Drohobycz
Boryslaw
Turka
Skole
Bolechow
Lubaczow
Niemirow
Rawa
Lubicza
Augustow
Belz
Luskow
Poryk
Sokal
Kristinopol
Radziechow
Dobrodwor
Strzamilowa
Kamionki
Zolkiew
Kulikow
Buk
BRODY
Oleszyce
Dresznow
Stojanow
Kozin
Szczurowice
Choiojow
Stanislawczyk
Krementz
Ostrog
Rovno
Lutsk
Wlodzimierz
Markopol
Nowemiasto
Lanowce
Wiszgrudek
Zbarasz
Zaloscz
Zloczow
Glinany
Gologory
Zborow
Pomorzany
Przemyslany
Bobrka
Nawarja
LEMBERG
Mikolajow
Brzozdowice
Narajow
Bonatyn
Brezany
Kozowa
Mikulince
Trembowla
Grzymalow
Tarnopol
Skalat
Janow
Podhayce
Bursztyn
Bulszowice
Hahez
Woynilow
Zarawna
Hurnie
Lutowiska
R. San
R. Stry
Ustrzyki
Mariampol
Usciac
Buczacz
Monasterzysk
Budzanow
Kopyczyniec
Hussiatyn
Czorikow
Jezierzany
Thuste
Zarye
Stanislawow
Lisiec
Tysmienica
Thlumacz
Chochmierz
Dolina
Roznialow
Smorza Salza
Solotwina
Otynia
Borodenka
Zaleszczyki
Kolomea
Pezymaszne
Jablonow
Tlumacz
Dolatyn
Nadworna
Gwozdziec
Pruth R.
Sniatyn
Czernowitz
Wischnitza
Krzywobrzeg
Stroschenetz
Pistyn
Kossow
Buty
Jablonica
M. Rusky
M. Pietrosz
Bambo
Kaluszna Gora
Berezna
Nagy Ag
Veresmarth
Bisztalud
N. Karasfalva
Mihalkocs
Kusznica
Volova
Polyana
Holubina
Szerdahely
Ungvar
Szobrancz
Turia R.
Kaschau
Satoralja Ujhely
Beregh Szasz
Tokaj
Bazar
Visk
Tarcza R.
Trihusa
N. Szigeth
Petrovo
Rozsnyo
Torna
Moldau
Boldva
Nemethi
Szendro
Putnak
Kaza
Szanto
Tiszkolcz
Kereszthur
MISKOLCZ
Gesztely
Apathfalva
Borsany
Tisza Lok
Namesty
Muda
Jaslinka
Swidnik
Bartfeld
Sztropko
Eperies
Leutschau
Kesmark
Podolin
Lublau
Felsoes
Sigmunden
Kapi
Jakabfalva
Handsfalva
Szinna
Somos
Hommona
Varana
Sztara
Dobsina
Schwedler
Szomajnok
Rosenau
Iglo
Hernad R.
Budamer
Vagy Almaly
Fasahely
Gal Szes
Vera
Toke Jerebes
N. Kapos
Ung R.
Szerdahely
Holubina
Mihalkocs
Kusznica
Volova
Polyana
Poszok
Turia R.
N. Berezna
Lytha R.
M. Verecze
Nagy Ag
Veresmarth
Bisztalud
N. Karasfalva
Mihalkocs
Kusznica
Volova
Polyana
Holubina
Szerdahely
Ungvar
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Turia R.
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Dobsina
Schwedler
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Rosenau
Iglo
Hernad R.
Budamer
Vagy Almaly
Fasahely
Gal Szes
Vera
Toke Jerebes
N. Kapos
Ung R.

1888-1973

1882-1955

45 - 90 „ „ „ „ „

90 & over „ „ „ „ „

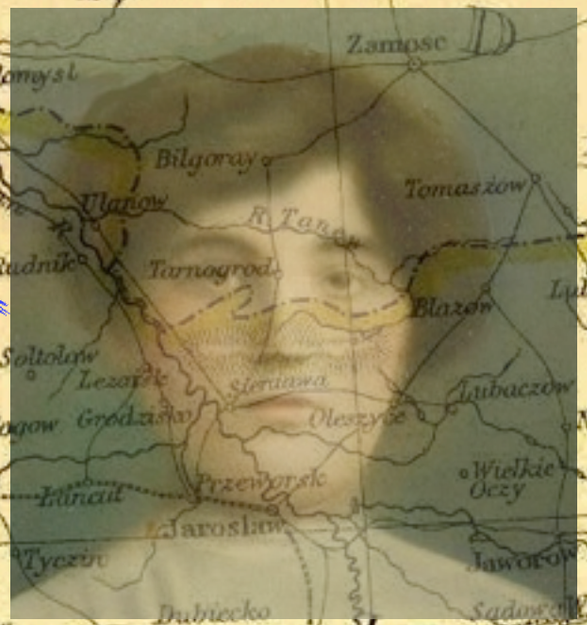
Cities with over 8000 inhab are shown in solid colour in circles proportionate to their population.

The centre of population at each decennial census shown thus + 1890.

IN 1900

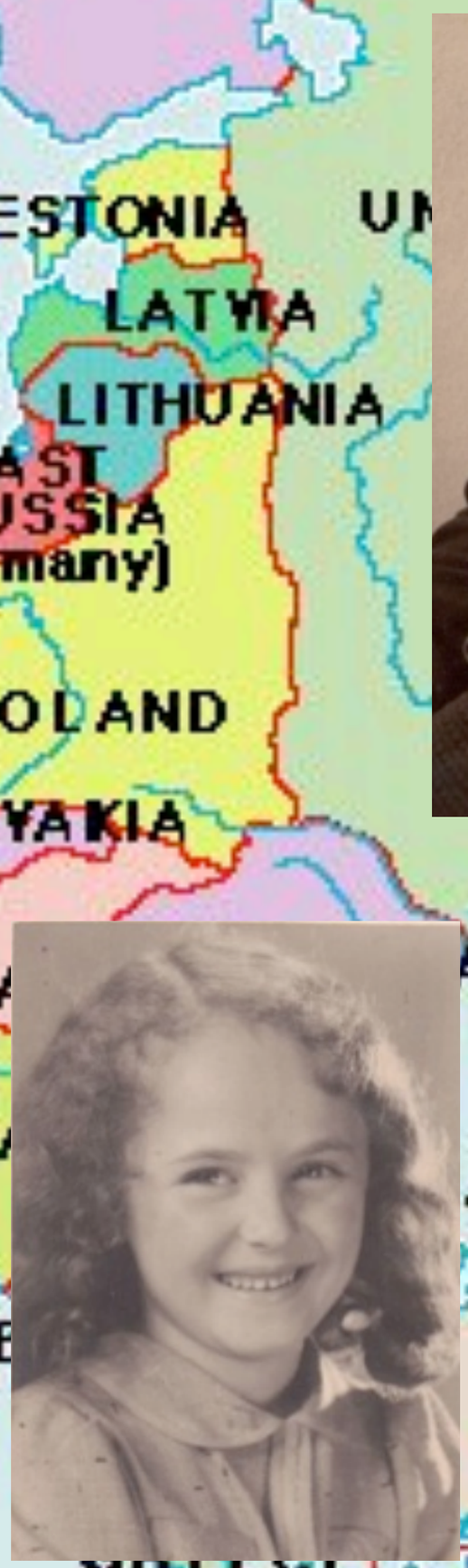
English Miles

1925-



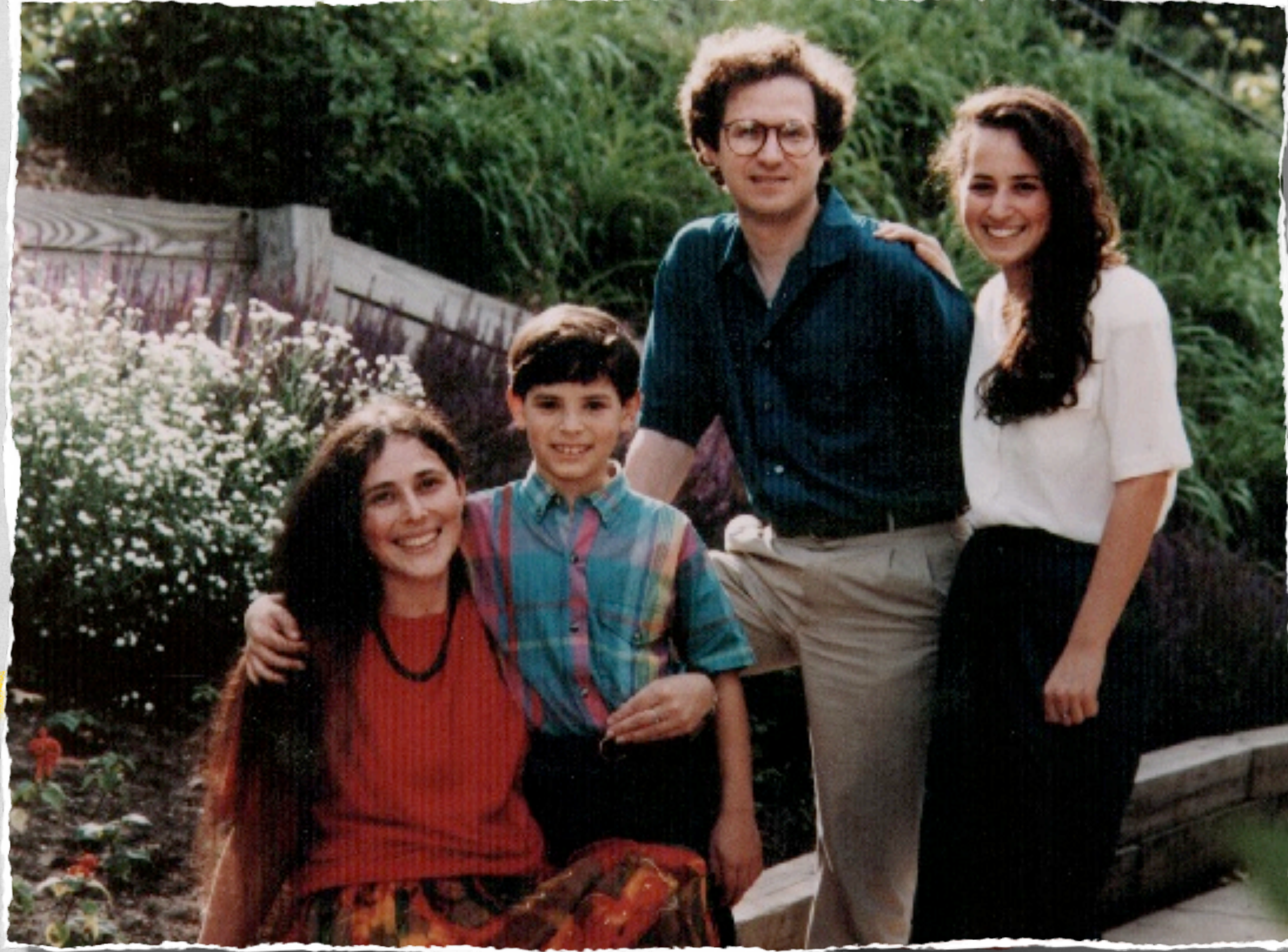
1903–1980

1897–1986



1932-

1951

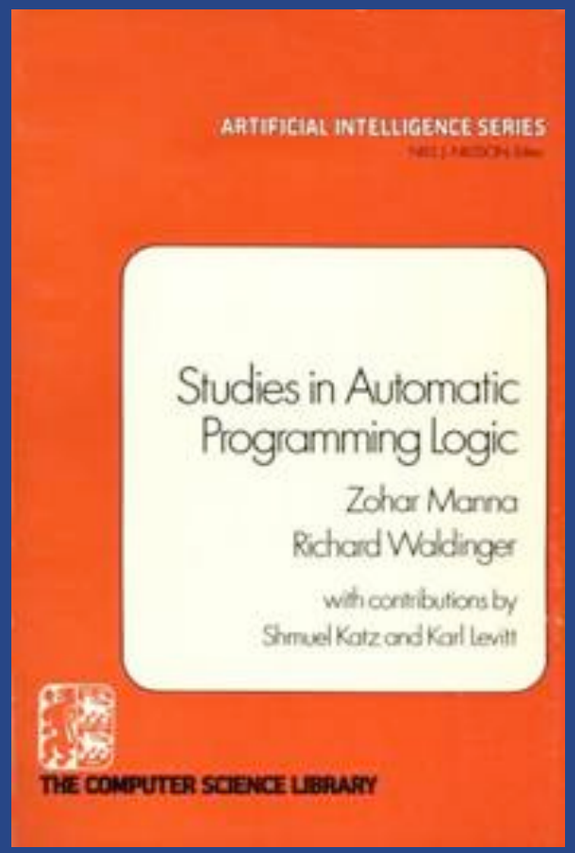


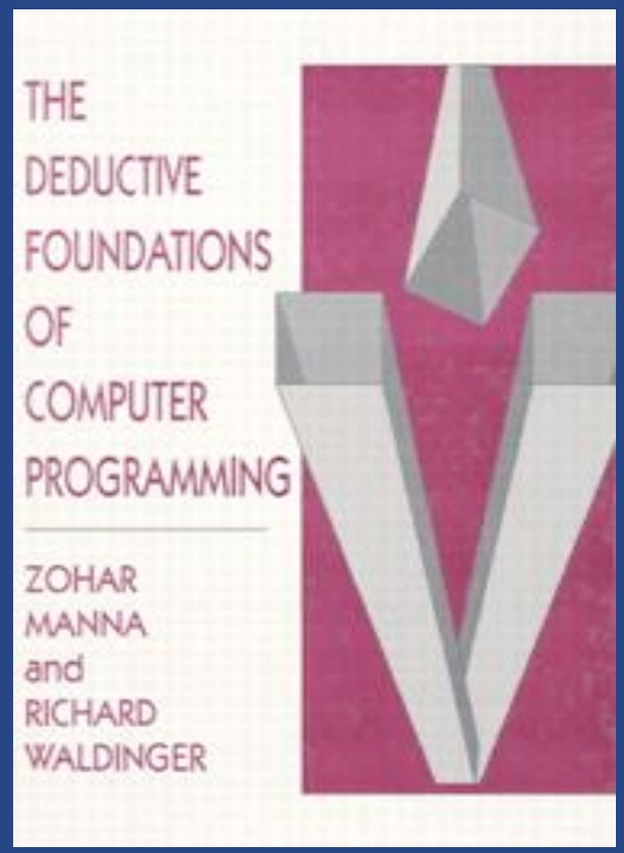
My Teachers

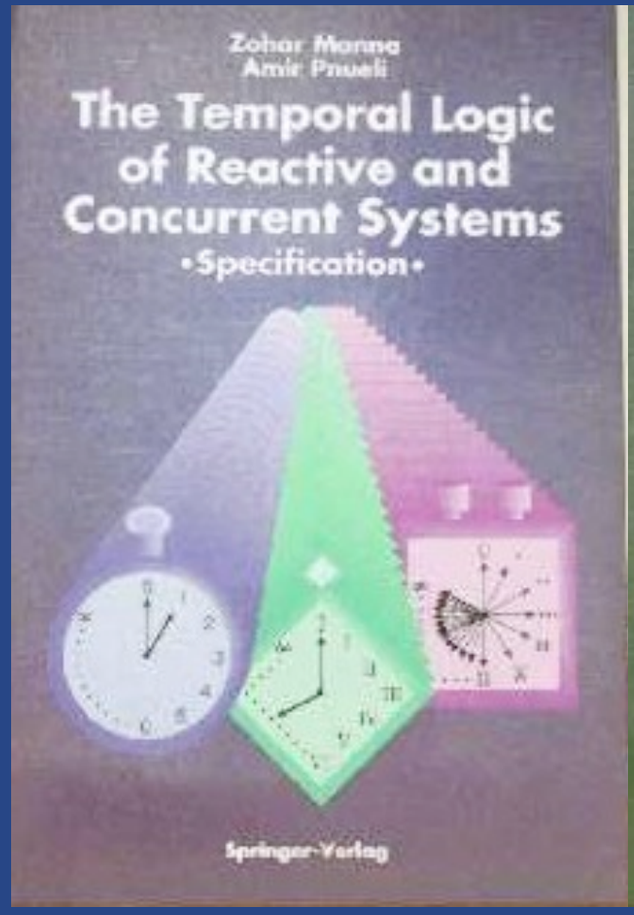

[Uribe]

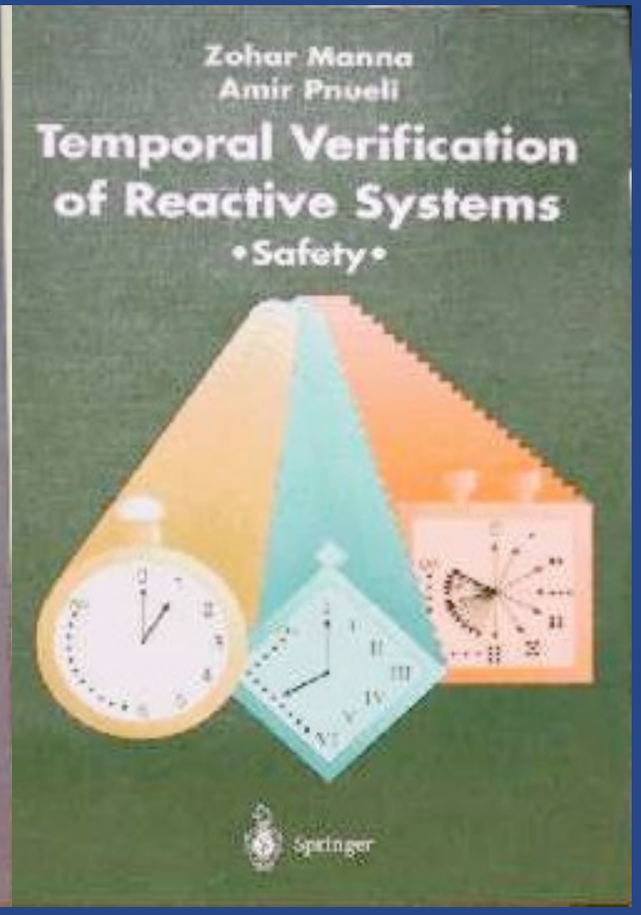
Zohar Manna


MATHEMATICAL THEORY OF COMPUTATION


ARTIFICIAL INTELLIGENCE SERIES
Studies in Automatic Programming Logic
Zohar Manna
Richard Waldinger
with contributions by
Shmuel Katz and Karl Levitt
THE COMPUTER SCIENCE LIBRARY


THE DEDUCTIVE FOUNDATIONS OF COMPUTER PROGRAMMING
ZOHAR MANNA and RICHARD WALDINGER


Zohar Manna
Amir Pnueli
The Temporal Logic of Reactive and Concurrent Systems
•Specification•
Springer-Verlag


Zohar Manna
Amir Pnueli
Temporal Verification of Reactive Systems
•Safety•
Springer

Amir Pnueli
Richard Waldinger

termination ideas

automated deduction

John McCarthy
Don Knuth

AI lab

completion

My Teacher's Teachers

Zohar Manna

CMU 1968

"Termination of Algorithms"

Manna & Pnueli

STeP

Robert W Floyd

Chicago

Zohar's advisor

Loop invariants

Termination

Dave Plaisted was his student

Saul Gorn
U Penn

Bob Floyd

Zohar Manna

Steve Ness

Amir Pnueli

Renato Iturriaga

- addressed termination of rewriting

Gorn's Termination Question On Floyd's CMU Qual Exam

$$Dx \rightarrow 1$$

$$Dy \rightarrow 0$$

$$D(\alpha + \beta) \rightarrow (D\alpha + D\beta)$$

$$D(\alpha \cdot \beta) \rightarrow ((\beta \cdot D\alpha) + (\alpha \cdot D\beta))$$

Alan Jay Perlis

MIT 1950

Zohar's advisor

One man's constant is another man's variable.

A Lisp programmer knows the value of everything, but the cost of nothing.

CONTRIBUTIONS TO MECHANICAL MATHEMATICS

by

Renato Iturriaga

May 27, 1967

Perlis' student

Carnegie-Mellon University
Pittsburgh, Pennsylvania

A MARKOV ALGORITHM FOR TRANSFORMING LOGICAL FORMULAE INTO DISJUNCTIVE NORMAL FORM

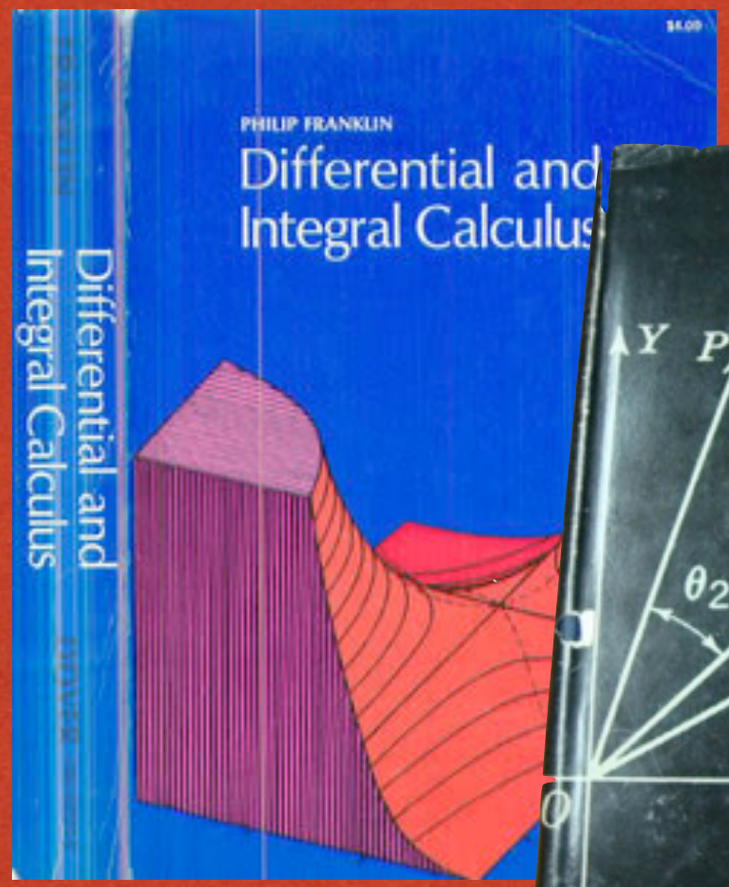
```
001:   11002     BEGIN FORM A, B, C, R, X;
002:   11016     SYMBOL S,Y1;
003:
004:   11023     Y1←/[OPERATOR:∧][COMM:TRUE];
005:   11053     A←A:ANY; B←B:ANY; C←C:ANY;
006:
007:   11104              S ← [[
008:   11107              ¬ (A ∧ B)     →    ¬.A ∨ ¬.B,
009:   11144              ¬ (A ∨ B)     →    ¬.A ∧ ¬.B,
010:   11202              ¬ A ¬= B      →    .A   = .3,
011:   11234              ¬ A   = B     →    .A ¬= .3,
012:   11266              ¬ A ¬< B      →    .A   < .3,
013:   11320              ¬ A   < B     →    .A ¬< .3,
014:   11352              ¬ A ¬> B      →    .A   > .3,
015:   11404              ¬ A   > B     →    .A ¬> .3
016:   11417              ],
017:   11440              (A∨B) [Y1] C  →  .A∧.C ∨ .3∧.C ];
018:
019:   11517     R ← ¬(¬(X<8∧X>-10)∧X=5)∧¬(X¬<15);
020:   11576     PRINT( R, R.↓S);
021:   11606     END
```

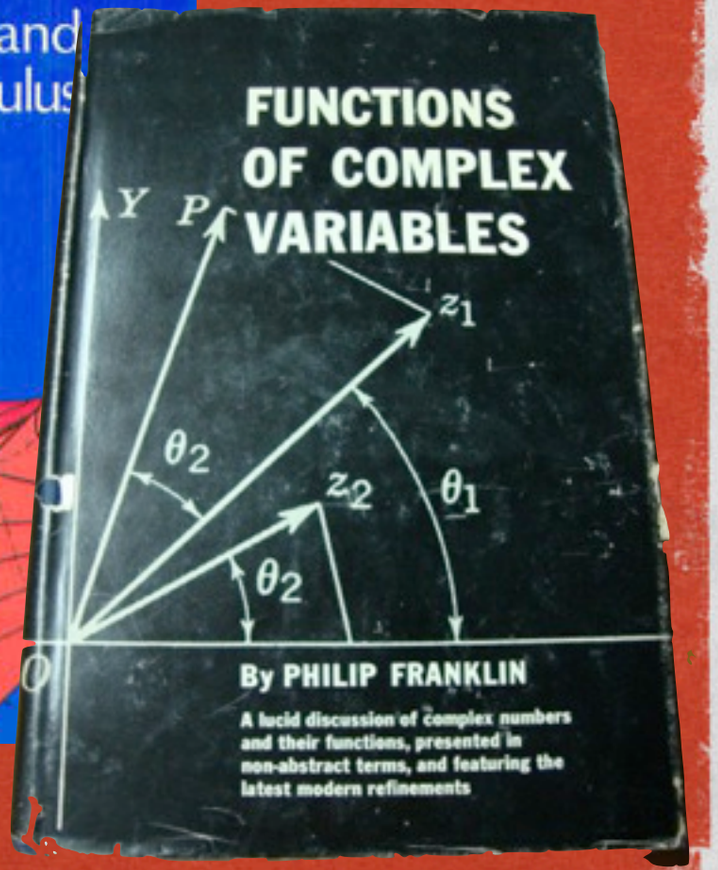
Philip Franklin

Princeton 1921

Perlis' advisor

"The four color problem"





Oswald Veblen

Chicago 1903

"A system of axioms for geometry"

Veblen ordinals

Alonzo Church

student of Veblen

Peter Andrews
Martin Davis
Leon Henkin
Stephen Kleene
Michael Rabin
Hartley Rogers
John Rosser
Dana Scott
Raymond Smullyan
Alan Turing
...

Eliakim Hastings Moore

Yale 1885

Veblen's advisor

"Extension of certain theorems of Clifford and Cayley in the geometry of n dimensions"

George Birkhoff was his student

Hubert Anson Newton

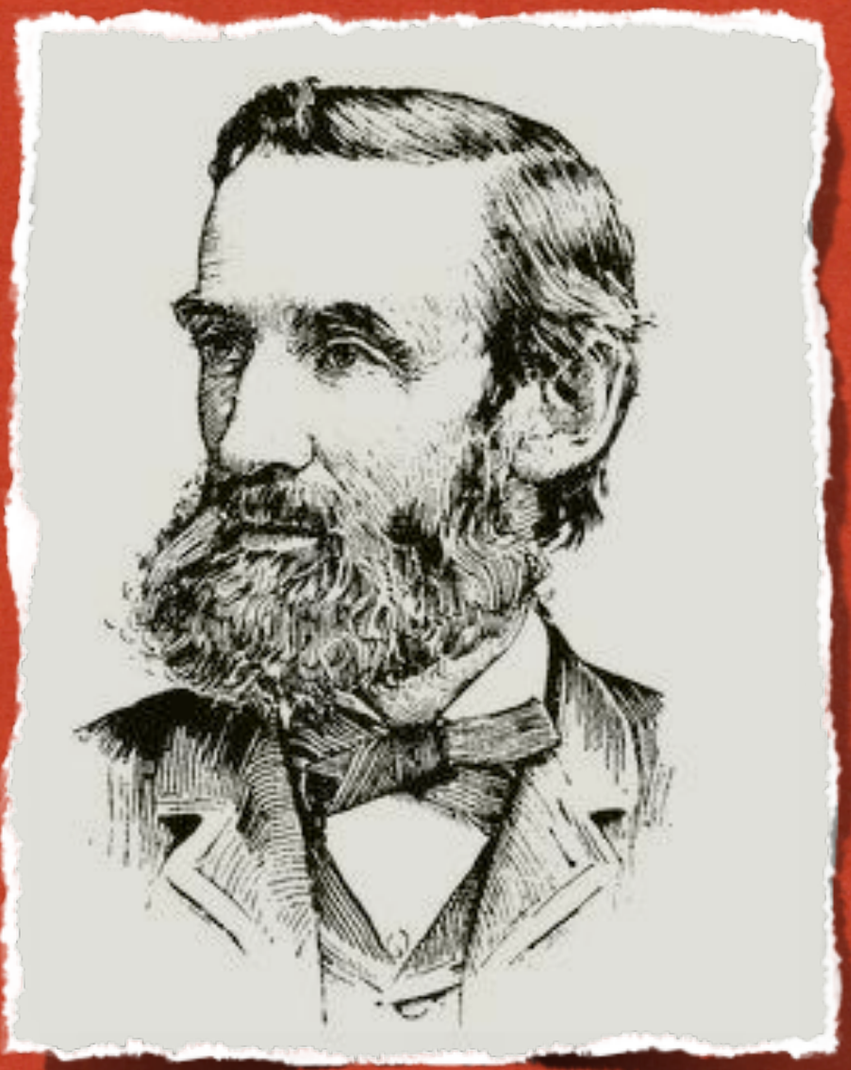
Yale 1850

Mathematician

Astronomer

Meteors

Comets



Michel Chasles
Polytechnique 1814

"Historical view of the origin and development of methods in geometry"

Acquired thousands of forged letters from Aristotle, etc.

Chasles' Descendants

H. A. Newton

E. H. Moore

Oswald Veblen

Philip Franklin

Alan Perlis

Zohar Manna

*

Gaston Darboux

C. Emile Picard

Ernest Vessiot

Herbrand

Simeon Denis Poisson

Polytechnique 1800

Poisson's equation

Definite integrals

Poisson spot

Poisson distribution

Joseph Louis Lagrange

Giuseppe Lodovico Lagrangia

Mathematics

Mechanics

Astronomy

Lagrange inversion

Leonhard Euler

Basel 1726

Mathematics

Function

Calculus

Astronomy

Graph theory

Logic

Euler diagrams

Johann Bernoulli

Basel 1694

Catenary

Jacob Bernoulli

Basel

e

Gottfried Leibniz

Altdorf 1666

Calculemus!

Christiaan Huygens

Leiden 1655

Discovered Titan

Invented pendulum clock

Wave theory of light

Frans van Schooten

Leiden 1635

Popularized
Descartes

Jacobus Golius

Leiden 1621

Arabic and Persian lexicons

Taught math to Descartes

Willebrord Snell van Royen

Leiden 1607

Willebrord Snellius

Mathematician

Discoveries by telescope

Rediscovered law of refraction

Rudolph Snellius

Ruprecht Karls, Heidelberg 1572

Humanist

Taught Logic

Professor of Hebrew

Valentine Naibod

Luther U., Halle-Wittenberg

Mathematician

died on account of his
astrological prediction of his
own demise


SYMBOLVM
VALENTINI NAIBODÆ.
PROCVL A IOVE NEC

Erasmus Reinhold

Luther U., Halle-Wittenberg 1535

Gerhard Gerhards

Satirist

Renaissance scholar

Jakob Milich

Wien 1524

Professor of math

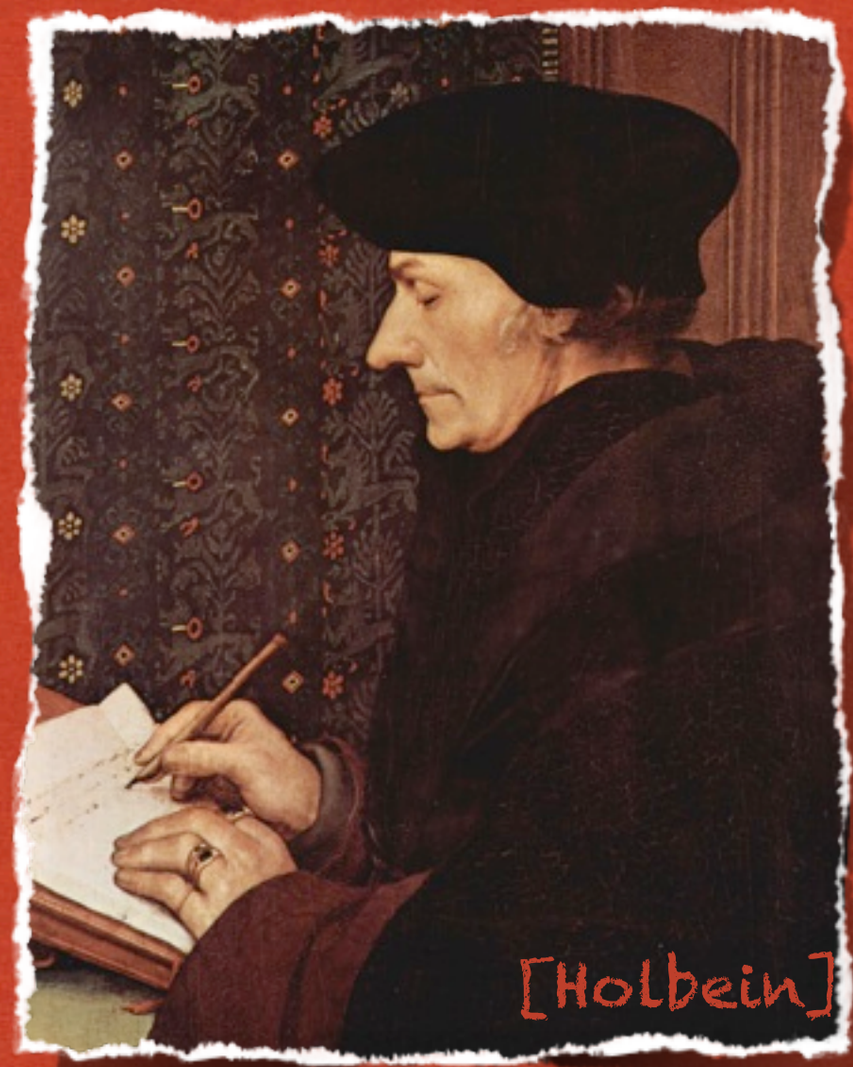
Commentator on Pliny the Elder

Desiderius Erasmus

Turin 1506

"Prince of the humanists"

Encomium Moriae
(The Praise of Folly)


[Holbein]

Ulrich Zasius

1 DESIDERIUS ERASMUS (b. 1467)

Jakob Milich

Erasmus Reinhold

Valentine Naibod

Rudolph Snellius

Ludolph van Ceulen

Willebrord Snellius

Jacobus Golius

Marin Mersenne

Frans van Schooten

Jan Jansz Stampioen Jr.

Bartholomäus Leonhard Schwendendörffer

5 CHRISTIAAN HUYGENS (1629)

6 GOTTFRIED WILHELM LEIBNIZ (1646)

Nicolas Malebranche

7 JACOB & JOHANN BERNOULLI (1654, 1667)

8 LEONHARD EULER (1707)

Giovanni Battista Beccaria

9 JOSEPH-LOUIS LAGRANGE (1736)

Jean-Baptiste Joseph Fourier

Karl Christian von Langsdorf

11 MARTIN OHM (1792)

Peter Gustav Lejeune Dirichlet

Rudolf Otto Sigismund Lipschitz

Jean Le Rond d'Alembert

10 PIERRE-SIMON LAPLACE (1749)

Simeon Denis Poisson

12 CARL FRIEDRICH GAUSS (1777)

Christian Ludwig Gerling

Julius Plücker

Christian Felix Klein

2 NICOLAUS COPERNICUS (1473)

3 GEORG JOACHIM RHETICUS (1514)

4 GABRIELE FALLOPPIO (1523)

Valentin Otto

Sebastian (Theodoricus) Dietrich

Caspar Peucer

Hieronymus Fabricius

Andreas Schato

Salomon Alberti

Melchior Jöstel

Ernestus Hettenbach

Ambrosius Rhodius

Christoph Notnagel

Johann Andreas Quenstedt

Michael Walther Jr.

Johann Pasch

Johann Andreas Planer

Christian August Hausen

Abraham Gotthelf Kästner

Georg Christoph Lichtenberg

Bernhard Friedrich Thibaut

Johann Tobias Mayer

Enno Heeren Dirksen

Carl Gustav Jacob Jacobi

Otto Hesse

Friedrich Julius Richelot

Carl Gottfried Neumann

William Edward Story

Solomon Lefschetz

Albert William Tucker

14 MARVIN LEE MINSKY (1927)

13 SEYMOUR AUBREY PAPERT (1928)

15 GERALD JAY SUSSMAN (1947)

Alexander Hegius

1474

Humanist

Generous to a fault

Rudolph Agricola
Ferrara 1478

Introduced dialectics

Humanist

Hebrew scholar

Pioneer in teaching the deaf

Theodoros Gazes

Mantova 1433

Translated Aristotle

Vittorino da Feltre

Padova 1416

Educator

School field trips

Guarino da Verona

Rome 1408

Collected
manuscripts

Manuel Chrysoloras
~1390

Μανουὴλ Χρυσολωρᾶς

Translated Greek classics

Demetrius Cydones
~1340


DEMETRII CYDONII

DE CONTEMNENDA MORTE

ORATIO

HENRICUS DECKELMANN

(RECAP)

When someone comes along and says the Pope is in error and everyone ought to abjure such error, we really have been given no proof for such an allegation, and it makes no sense for anyone to pass judgment on what has first to be proven.

Nilus Cabasilas

Salonika ~1320

Νεῖλος Καβάσιλας

90,373 descendants

Nilus Cabasilas

Salonika ~1320

Νεῖλος Καβάσιλας

90,373 descendants

Read about him in Polish

My Peers

Larry Wos (1992)

Resolution proofs

Set of support

"We don't just prove theorems. We look at conjectures, we design circuits, we solve puzzles, we prove properties of other programs."

Woody Bledsoe (1994)

Non-resolution theorem-proving

Inequalities

"It taught me that 'if we have to do it, then we DO IT.' Nothing seems to have delayed me much since that day, even some very challenging times when we crossed the Rhine River."

Alan Robinson (1996)

Resolution principle

Unification

"Part of the point... of the logical analysis of deductive reasoning has been to reduce complex inferences, which are beyond the capacity of the human mind to grasp as single steps, to chains of simpler inferences, each of which is within the capacity of the human mind to grasp as a single transactiom."

Wen-Tsun Wu (1997)

Geometry as algebra

"During the cultural revolution I was sent to a factory manufacturing computers. I was initially struck by the power of the computer.... I began to understand what Chinese ancient mathematics really was.... It was under such influence that I investigated the possibility of proving geometry theorems in a mechanical way."

Gérard Huet (1998)

Rewriting theory

Higher-order unification

"Le traitement de la langue naturelle, ce qu'on nomme linguistique computationnelle, se situe au carrefour entre la linguistique, la logique et l'informatique."

Bob Boyer & J Moore (1999)

Induction

Generalization

"With the aid of automatic theorem-provers, it is now often practical to do mathematics formally."

Bill McCune (2000)

Otter & EqP

Indexing

Robbins' Conjecture

"In a sense, I have a feeling that the computer has been creative."

Don Loveland (2001)

DPLL

Model elimination

"The most grandiose applications, such as full program synthesis, the mechanized mathematician, or the general reasoning machine, are not yet within view.... However, such automated deduction applications clearly can and will be developed, and they will be enormously beneficial."

Mark Stickel (2002)

Unification

Indexing

PTTP

"Automated deductive program synthesis has been studied for many years but has never been used in practice."

Peter Andrews (2003)

Higher-order

TPS

Mating

"Logical reasoning plays such a fundamental role in the spectrum of intellectual activities that advances in automating logic will inevitably have a profound impact on many intellectual disciplines."

Harald Ganzinger (2004)

Superposition

Conditional rewriting

"Developers of state-of-the-art SAT solvers would need relatively little work to turn their solvers into DPLL(X) engines."

Martin Davis (2005)

Davis-Putnam

"How can we ever exclude the possibility of our being presented, some day (perhaps by some extraterrestrial visitors), with a device or "oracle" that "computes" an uncomputable function?"

Wolfgang Bibel (2006)

Applications of first-order proving

Connection method

"Those who transformed from Logic to Informatics... became sort of banned, in any case kept in low regard."

Alan Bundy (2007)

Induction heuristics

"[A review] is something that will ruin your day."

Ed Clarke (2008)

Incremental model checking

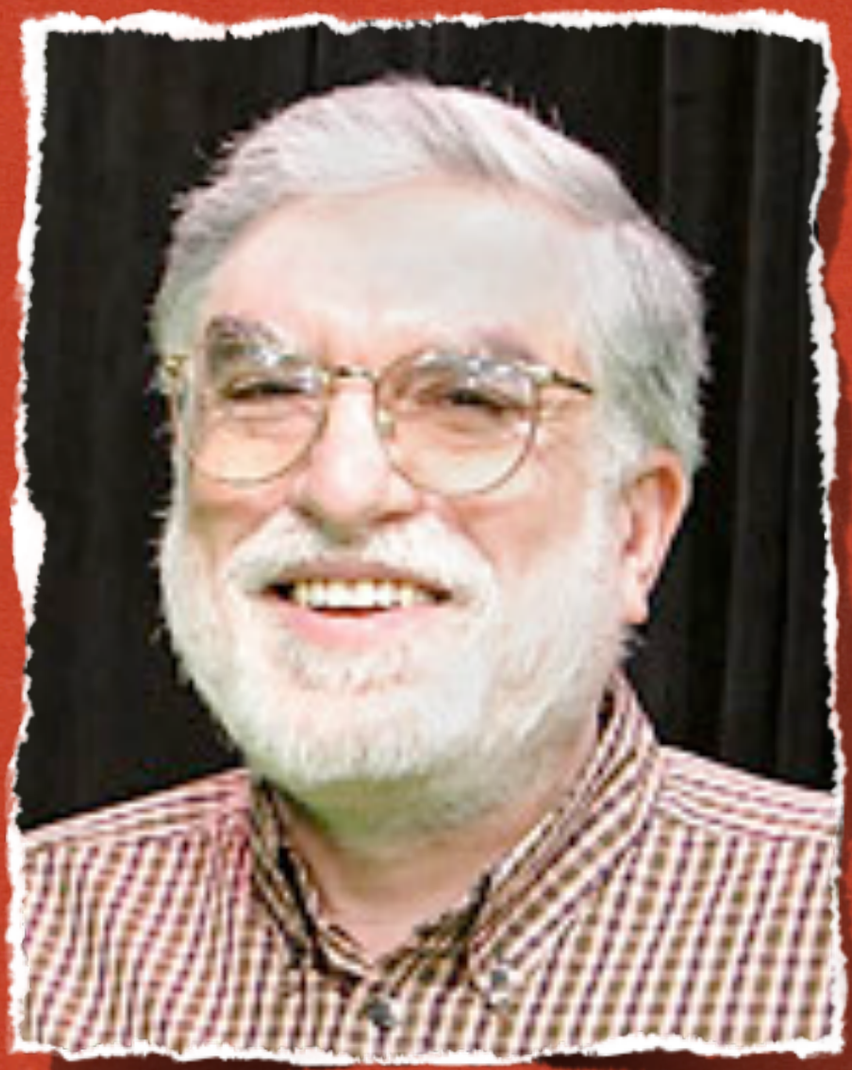
"We found several errors that had been previously undetected. Apparently, this is the first time that formal methods have been used to find nontrivial errors in an IEEE standard."

Deepak Kapur (2009)

Algebra & Geometry

Equational

Invariants



"We analyze the perceptions of male and female CS/CE undergraduate students with regard to gender-related issues and show how they are articulated."

Dave Plaisted (2010)

Strategies

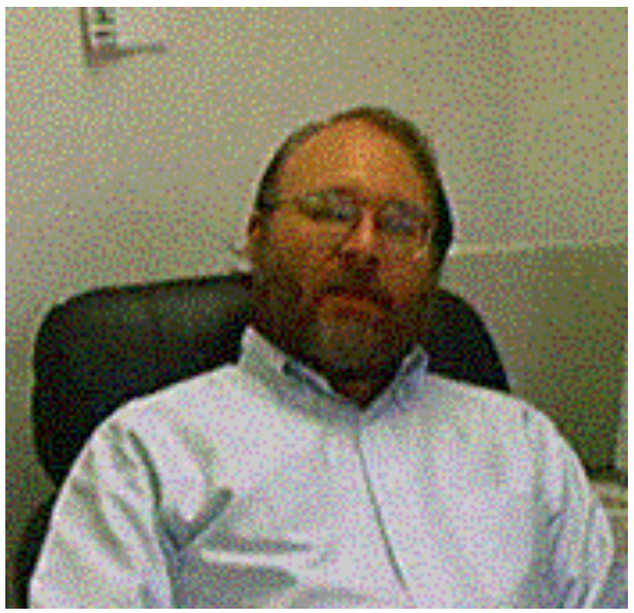
Abstraction

Instance-based

"We are interested in the sizes of the search spaces produced by clause form refutational theorem proving strategies for first-order logic. This interest is different from that of most logicians who are interested in provability or the length of proofs."

My Students
(of deduction)

G Sivakumar



Charles Hoot

Naomi Lindenstrauss

Jieh Hsiang

Leo Bachmair

Subrata Mitra

Yuh-jeng Lee

Alan Josephson

Fei-Pei Lai

Ely Pinchover

Iddo Tzameret

Alex Nadel

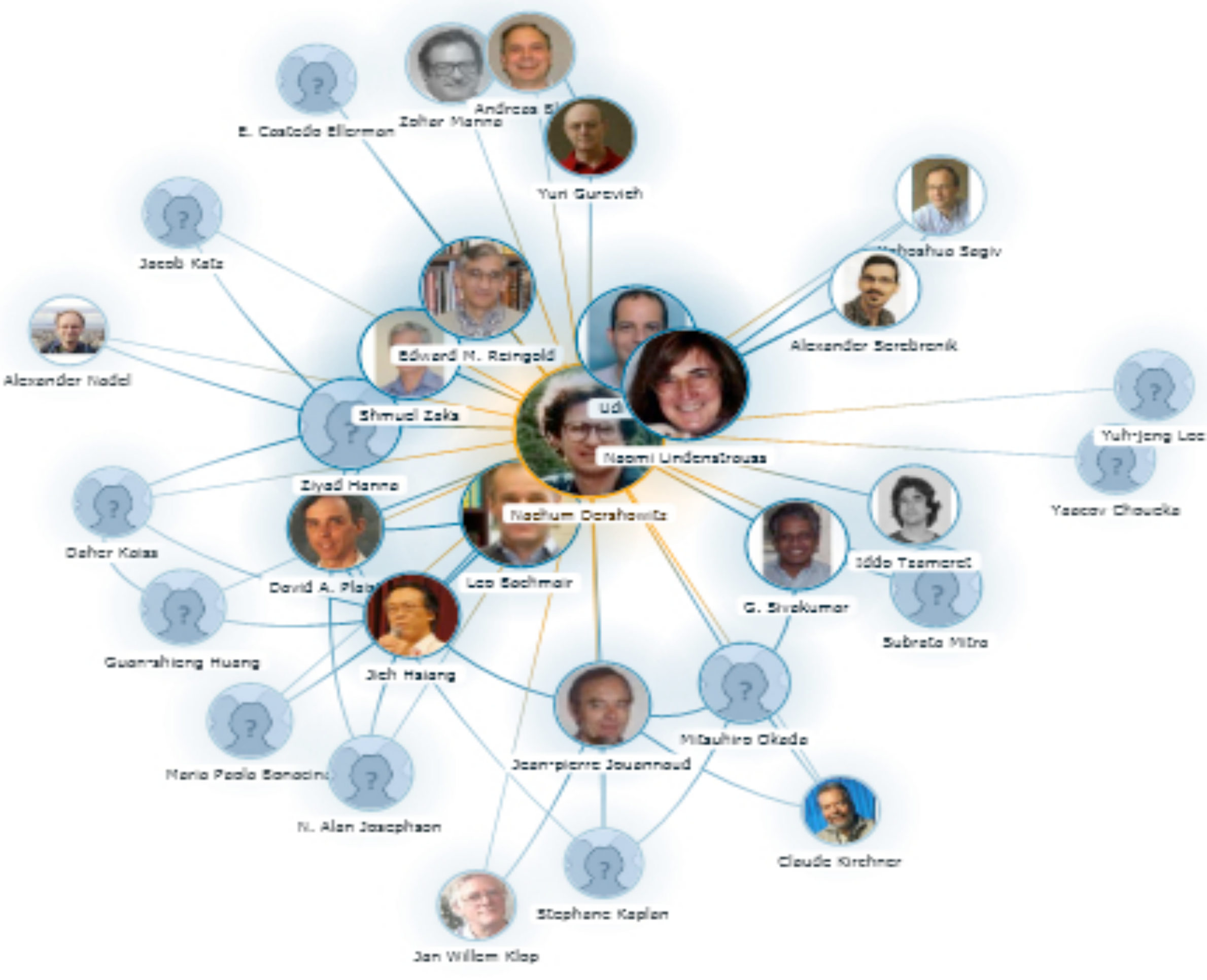
Daher Kaiss

Jacob Katz

Mitch Harris

Yulik Feldman

My Circles


E. Costedo Ellerman
Zohar Manna
Andreea S
Yuri Gurevich
Jacob Katz
Edward M. Reingold
Alexander Nadel
Shmuel Zaks
udi
Alexander Serebrenik
Yuh-Jeng Lee
Naomi Lindenstrauss
Ziyad Hanna
Nachum Dershowitz
Zohar Kolax
David A. Plai
Lee Bachmair
G. Sivakumar
Idde Tsamoret
Subrata Mitra
Guanrshiong Huang
Jieh Hsiang
Mitsuhiro Okada
Jean-pierre Jouannaud
Mario Paolo Bonacin
N. Alan Josephson
Claude Kirchner
Stephane Kaplan
Jan Willem Klop

CADE cfp

- Logics of interest include, but are not limited to
  - propositional, first-order, equational, higher-order, classical, description, modal, temporal, many-valued, intuitionistic, other non-classical, meta-logics, logical frameworks, type theory and set theory.
- Methods of interest include, but are not limited to
  - saturation, resolution, tableaux, sequent calculi, natural deduction, term rewriting, decision procedures, model generation, model checking, constraint solving, induction, unification, proof planning, proof checking, proof presentation and explanation.
- Applications of interest include, but are not limited to
  - program analysis and verification, hardware verification, mathematics, natural language processing, computational linguistics, knowledge representation, ontology reasoning, deductive databases, functional and logic programming, robotics, planning, and other areas of AI.

CADE cfp

- Propositional
- Equational
- Term rewriting
- Unification
- Saturation
- Program verification
- Functional & logic programming
- Synthesis

Propositional

- Alex Nadel
- Guan-Shieng Huang
- Ziyad Hanna
- Daher Kaiss
- Yulik Feldman
- Jieh Hsiang
- Mitch Harris

Rewriting

- Leo Bachmair
- Jieh Hsiang
- G Sivakumar
- J-P Jouannaud
- David Plaisted
- Alan Josephson
- Stephane Kaplan
- Naomi Lindenstrauss
- Mitsu Okada
- Jan Willem Klop
- Leo Marcus
- Andrzej Tarlecki
- Ralf Treinen

Saturation

- Leo Bachmair
- Claude Kirchner
- Jieh Hsiang
- Maria-Paola Bonacina
- David Plaisted
- Mitsu Okada

Unification

- Subrata Mitra
- G Sivakumar
- Claude Kirchner
- Alan Josephson

Verification

- Zohar Manna
- Jay Jayasimha
- Jacob Katz
- Seungjoon Park
- Ziyad Hanna

Termination

- Zohar Manna
- Charles Hoot
- G Sivakumar
- Subrata Mitra
- Mitsu Okada
- Georg Moser
- Leo Bachmair
- Jieh Hsiang
- Naomi Lindenstrauss
- Shuki Sagiv
- Alex Serebrenik
- Iddo Tzameret
- Ed Reingold
- Castedo Ellerman

Programming & Synthesis

- Zohar Manna
- Uday Reddy
- David Plaisted
- Alan Josephson
- Yuh-jeng Lee
- Ely Pinchover
- Naomi Lindenstrauss

Surveys & Problems

Circles & Stars

Shmuel Zaks

Technion

coauthored

"Patterns in trees"

Paul Erdős

"Minimum-diameter cyclic arrangements in mapping data-flow graphs onto VLSI arrays"

Peter Salamon

San Diego

"The solution to a problem of Grunbaum"

Lars Kai Hansen

TU Denmark

"Neural network ensembles"

Nicholas T. Lange

McLean Hospital (Harvard)

"Plurality and resemblance in fMRI data analysis"

Bruce M. Cohen

McLean Hospital (Harvard)

"Structural brain magnetic resonance imaging of limbic and thalamic volumes in pediatric bipolar disorder"

Abigail A. Baird

Dartmouth

"Functional magnetic resonance imaging of facial affect recognition in children and adolescents"

Natalie Hershlag

Harvard

"Frontal lobe activation during object permanence: Data from near-infrared spectroscopy"

Natalie Portman

Harvard

"Frontal lobe activation during object permanence: Data from near-infrared spectroscopy"

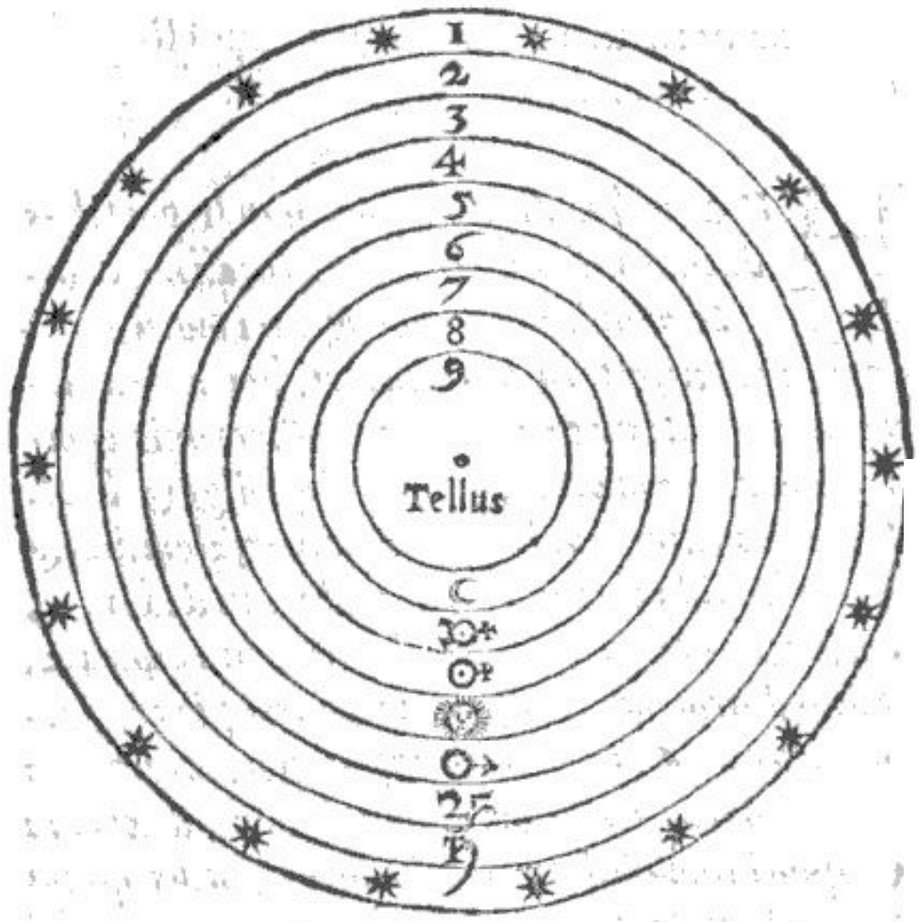
Freedom

Intellectual

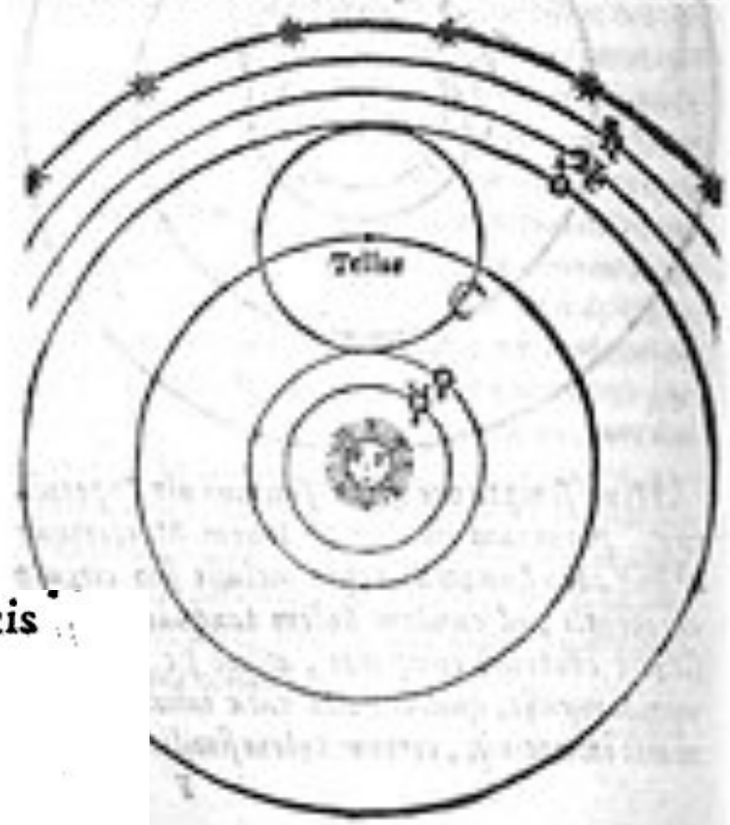
Academic

Mikołaj Kopernik

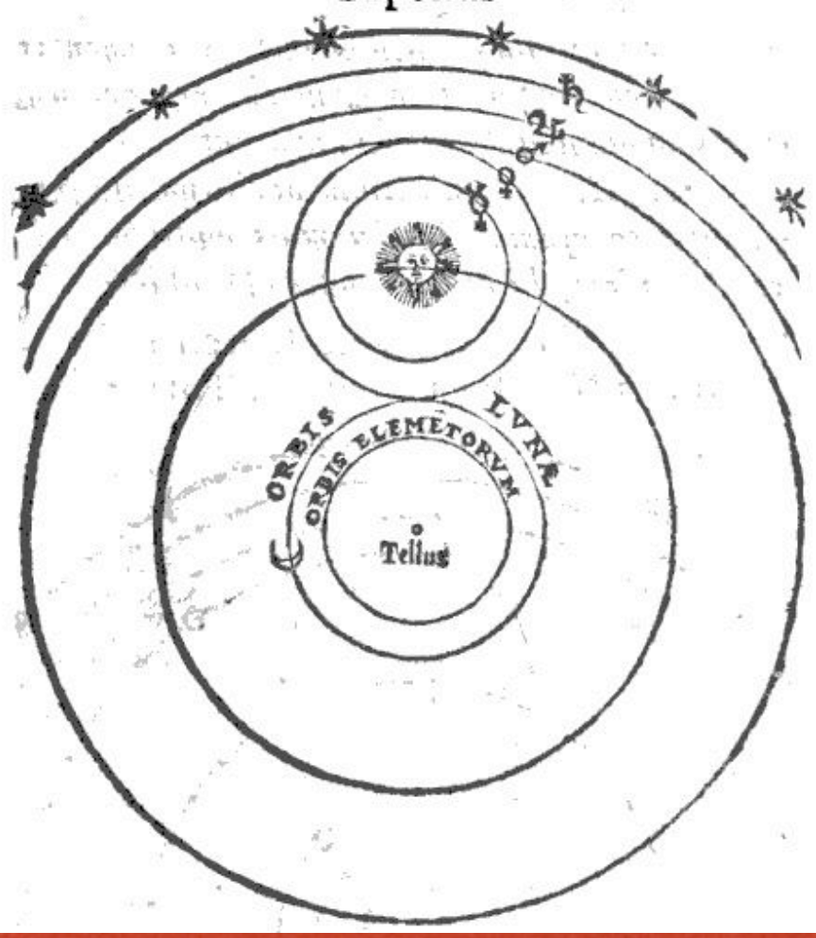
Systema maximarum mundi partium, quibus totam rerum vniuersitatem connexam esse tradiderunt communiter authores.



Systema vniuersitatis de sententia summi viri Nicolai Copernici Torinensis.



Systema maximarum vniuersitatis partium ex sententia Martiani Capellæ.



Naibod

Boaz Trakhtenbrot

"Idealist of the Carnap Species"

Bad Reviews

Theory conference:

But where's the implementation?

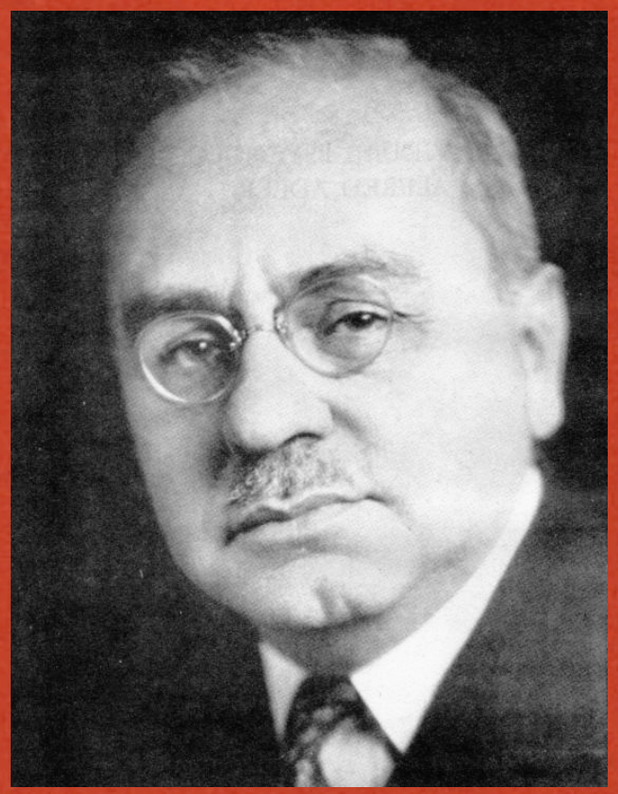
Applications conference:

But there are no theorems!

Review of Toby Walsh

I don't find the phase transition experiments of much value at this stage. So, there may be a phase transition, so what?

Motto



One good definition
is worth three theorems.

- Alfred Adler
"Mathematics and creativity"
The New Yorker (1972)

In Memoriam

Millions in WWII

Stéphane Kaplan

Ron Book

Harald Ganzinger

Bob Floyd

Amir Pnueli

Bill McCune