

# Between the East and the West: The Life and Work of Alfred Zauberman

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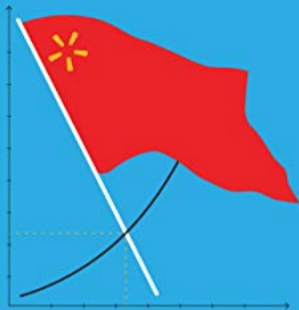
## Motivation and research questions

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# Motivation

- Due to the recent advances in artificial intelligence, there is a (surprising?) renewed interest in the possibility of central planning.
- The argument is that now, thanks to artificial intelligence and increased computational power, we might be able to run a planned economy.
- Morozov (2019) has called this idea “digital socialism.”
- Argument was rekindled first by those researchers most critical with market economies and journalists.
- But it is increasingly being mentioned even by elite economists.

Leigh Phillips & Michal Rozworski



# PEOPLE'S REPUBLIC OF WALMART

HOW *the* WORLD'S BIGGEST  
CORPORATIONS ARE LAYING *the*  
FOUNDATION *for* SOCIALISM

Opinion **Big Data**

## The Big Data revolution can revive the planned economy

Some, notably in China, think oceans of information will refloat  
centralised systems

JOHN THORNHILL

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**Daron Acemoglu**

@DAcemogluMIT



Coming back to Hayek's argument, there was another aspect of it that has always bothered me. What if computational power of central planners improved tremendously? Would Hayek then be happy with central planning?

9:00 AM · May 21, 2023

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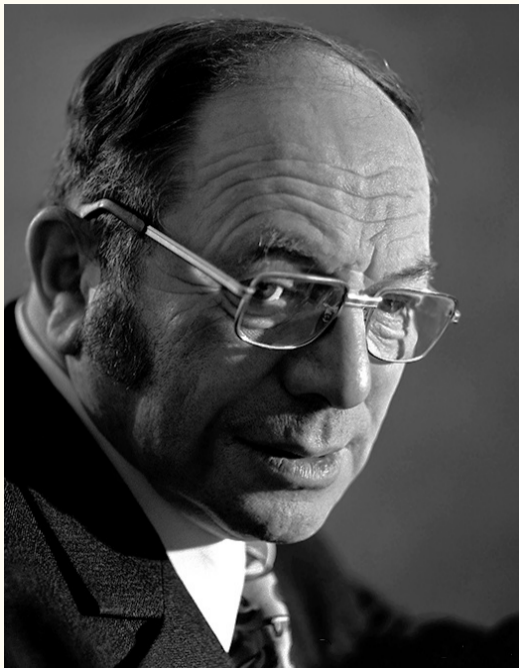
**Daron Acemoglu** @DAcemogluMIT · May 21



Impossible to know the answer to this, but some believe that advances in AI are taking us towards this type of supercharged computational power. In my mind, this does not make central planning anymore attractive (whether it is in the hands of the Communist Party or Google).

## Going back in time, I

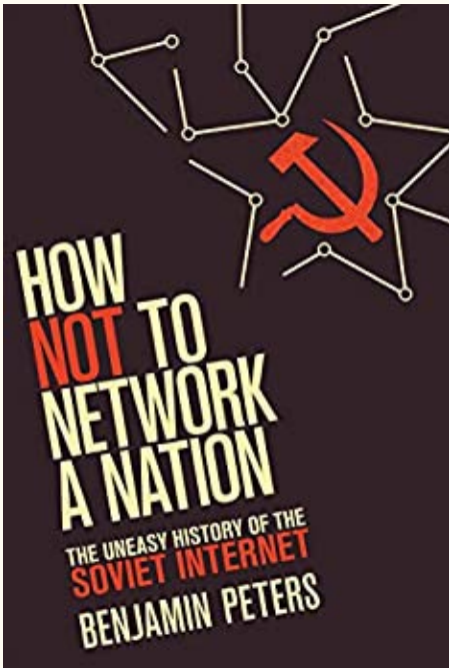
- The idea that mathematical methods and computational power can implement central planning and circumvent the shortcomings of “actually existing socialism” is not new.
- Grigory Feldman (1884-1958), Leonid Kantorovich (1912-1986), Wassily Leontief (1905-1999), and many others pioneered these ideas.
- However, during Stalin’s reign, nothing much is done. Stalin has a deep suspicion of economists in general and of mathematical economists in particular.
- More deeply: Stalin believes on the supremacy of politics over economics and mathematical planning is incompatible, in his assessment, with this supremacy.



## Going back in time, II

- After Stalin's death, some new possibilities are opened.
- Research program championed by Vasily Nemchinov (1894-1964).
- Practical implementation:
  1. Victor Glushkov (1923-1980) proposed the construction of a "National Automated System for Computation and Information Processing" (OGAS), a Soviet "internet" that would allow the transmission of information from thousands of production units to a center, which in turn would send instructions back to these units.
  2. The "System for Optimal Functioning of the Economy" (SOFE), led by Nikolay Fedorenko (1917-2006), and the Central Economic Mathematical Institute in Moscow.





# The research question

- What was the impact of the ideas of Nemchinov, Glushkov, Fedorenko, and others in “mainstream” Western economics?
- Is there something of interest in the exchange of ideas from that period that we should remember? For example, are there lessons to understand the constant failure of financial regulation?
- Most of the human capital involved in the exchange of ideas was lost after the fall of the Soviet Union (e.g., chairs and centers on Soviet economics discontinued, researchers retired/died, etc.).
- We want to draw attention to a key researcher on that exchange: Alfred Zauberman (1903-1984).
- Not very well-known economist, little documentary record left.
- We argue that his life helps us to frame the evolution of economics in the 20th century, and his work teaches valuable lessons.



## Zauberman's life

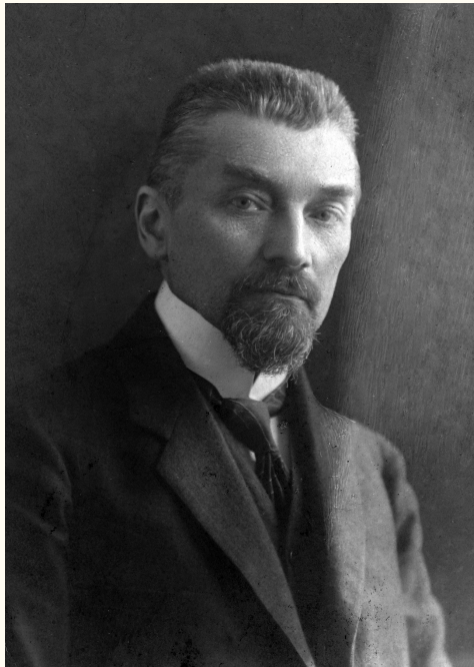
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## Family background

- Born in Łódź, Poland, on April 21, 1903, when it was part of Imperial Russia, into a Jewish family.
- His father, Samuel [Shmuel] Zauberman, a merchant, son of Abram-David, was born in 1873. He married Sara Jelenkiewicz, born in 1878, and they had three children: Pola, born in 1902 (died 1923), and Eugenja in 1905.
- Well-off family: “Either they had money or education or both. Everybody was either a doctor, a solicitor or had a factory.”
- Married Irena Goldblum, born 1901 in Łódź, in 1925. The New Cemetery in Łódź, the largest Jewish Cemetery in Europe, has a grave for the name Zauberman, son of Alfred, date of death Jan 4, 1936.
- It seems that all his close relatives die in the Holocaust. The only other relative who survived the war was Jerzy Bielski, born in 1921 in Stockholm. During the war, he was imprisoned in the Auschwitz concentration camp and later testified at the Nuremberg trials.

## Education and early career

- Zauberman received a doctorate in Law and Economics from the University of Cracow in 1928.
- His supervisor was Adam Krzyżanowski (1873-1963), the founder of the Cracow School of Economics.
- The thesis title was **Russian money in years 1914-1924**. It was reprinted in a volume of theses of Krzyżanowski's students, including Oskar Lange (extent of Zauberman's relationship with Lange?).
- Zauberman's only other pre-WWII publication appeared in a journal of the Warsaw Bar and dealt with the inheritance of enterprises.
- Involved in legal work –Lawyer of the Association of Merchants of The City of Łódź in 1935– and journalism on economic topics.



- Mobilized in 1939(?) and serves as reserve second lieutenant of the 23rd infantry Regiment in Łódź.
- Following the Russian and German occupation of Poland in 1939, he escaped to Japan and finally traveled to Britain in 1941. Helped by Chiune Sugihara (1900-1986).
- Zauberman served in the Polish government in exile. However, no information about his role has been ascertained.
- His wife Irena died in Edinburgh in 1944 and is buried at Corstorphine Hill Cemetery. They published together an article, **“Some components of the national wealth of East Prussia and Opole Silesia”** in 1945.





## After World War II

- Enrolls at LSE as a graduate student. Publishes three papers at *ReStud* in 1948 on Soviet economic thought.
- In 1949, he starts working as a part-time scriptwriter in the Central European Service of the BBC. He is offered a permanent contract in 1956.
- He also regularly contributed to the *Polish Daily* published in London. He also wrote for the *Harvard Journal*, *Chatham House*, and *The World Today*.
- In the summer of 1948, he marries Evelyn Mary Jones (Feb 1/9, 1906-September 23, 2001), and soon after, they settle down in Notting Hill (London) with a simple middle-class life (area had not been gentrified at the time).
- Evelyn becomes a central part of his life: RA, typist, administrator,...
- In January 1958, he is naturalized as a UK citizen.



## A late academic career

- He joins the LSE as a part-time Lecturer in Soviet Economics in 1958 or 1959 and full-time in 1964.
- Promoted to Reader in Economics in 1967.
- He teaches Techniques in Normative and Indicative Planning, Problems of Planning Techniques, Soviet Economic Structure, and Economic Problems of the Communist World (Seminar) (the last three with Peter Wiles), Control-Theoretic Approach to Planning since 1969/70, System-, Information- and Control-Theoretic Approach to Planning 1971/2, Modeling Controls in a Dynamic System 1978/9.

## A productive retirement

- He retired in 1970 and continued to lecture, holding the post of visiting professor or senior fellow at several American (Berkeley, Columbia, Harvard, NYU, Santa Barbara in Spring 1971), Canadian (Toronto), and West German universities (Konstanz), and the Vienna Institute for Comparative Economic Studies.
- Zauberman died on April 17, 1984, and was survived by his wife Evelyn Mary Zauberman.
- She donated funds to create a graduate fellowship in his name at the LSE.

## Zauberman's work

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## Two main topics

### 1. The economies of the Soviet Union and Eastern Europe:

- The CMEA: A Progress Report (1960).
- Industrial Progress in Poland, Czechoslovakia, and East Germany 1937-1962 (1964).

### 2. Mathematical economics in the Soviet Union and its use in central planning:

- Aspects of Planometrics (1967).
- The Mathematical Revolution in Soviet Economics (1975).
- Mathematical Theory in Soviet Planning (1976).
- Differential Games and other Game-theoretic Topics in Soviet Literature: A Survey (1975).

# Aspects of Planometrics

ALFRED ZAUBERMAN

with contributions by

A. Bergstrom

T. Kronsjö

and E. J. Mishan



## Aspects of Planometrics (1967)

- “Planometrics” is a term Zauberman borrows from Nemchinov.
- Collection of essays, including chapters coauthored with A. Bergstrom and E.J. Mishan (1917-2014).
- Follows the laconic style of Soviet mathematical economics at the time. Often hard to follow because the notation is not fully spelled out and some inconsistencies.
- Interest in defining efficiency and comparing normative and indicative planning.
- Fundamental lesson: efficiency is harder to determine than it seems. Math or computers will not adjudicate among competing values in a society.

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# MATHEMATICAL THEORY IN SOVIET PLANNING

Concepts, Methods, Techniques

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*Published for*

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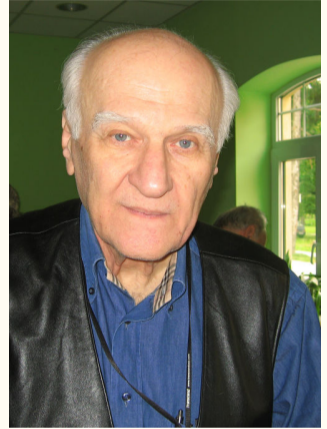
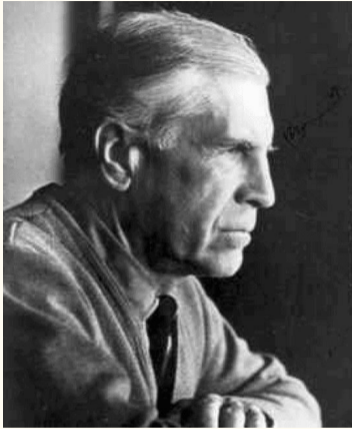
OXFORD UNIVERSITY PRESS  
LONDON NEW YORK TORONTO  
1976

## Mathematical Theory in Soviet Planning, 1976

- Survey of mathematical methods.
- Companion, easier book: [The Mathematical Revolution in Soviet Economics \(1975\)](#).
- Zauberman admires deeply Soviet mathematical economics and he believes Soviet and Western economics are converging.
- Much material on control theory.
- Interesting observation: roughly at the same time, dynamic programming is becoming mainstream in macro (Lucas, Sargent, Prescott). Lucas takes a year off to learn functional analysis and dynamic programming.
- Continuous vs. discrete time.

# The development of “dynamic programming”

- Calculus of variations: Issac Newton (1687), Johann Bernoulli (1696), Leonhard Euler (1733), Joseph-Louis Lagrange (1755).
- 1930s and 1940s: many problems in aerospace engineering are hard to tackle with calculus of variations. Example: minimum time interception problems for fighter aircraft.
- Closely related to the Cold War: two different approaches
  1. Lev S. Pontryagin, Vladimir G. Boltyanskii, and Revaz V. Gamkrelidze (1956): Maximum principle.
  2. Magnus R. Hestenes, Rufus P. Isaacs, and Richard E. Bellman at RAND (1950s):
    - 2.1 Distinction between controls and states.
    - 2.2 Principle of optimality.
    - 2.3 Dynamic programming.



**Figure 1:** Lev S. Pontryagin, Vladimir G. Boltyanskii, and Revaz V. Gamkrelidze



**Figure 2:** Magnus R. Hestenes, Rufus P. Isaacs, and Richard E. Bellman

## Some lessons

- No, Western and Soviet economics did not converge.
- Soviet central planning turned out to be inherently flawed.
- No amount of control theory was going to defeat the incentives and political economy constraints faced by planners.
- In the short run, dynamic programming à la Bellman turned out to be much more convenient for economics than optimal control à la Pontryagin. Why?
  1. Much easier to handle stochastic shocks. Itô's lemma is a blessing and a curse.
  2. Recursive structure of Bellman equation often provides deep economic insights.
- Paradoxically, continuous time methods are experiencing a revival in macro because they scale up better against the curse of dimensionality.

## Concluding remarks

- One generation of economists who worked hard on what central planning could and could not do has been forgotten.
- Part of it was purely institutional, as the interest in socialist economies waned.
- But part of the problem is more fundamental: we do not think enough about what policymakers can and cannot achieve and often focus on pure “technocratic” approaches to concrete problems instead.
- Zauberman and his generation (Tinbergen, Malinvaud, Ellman, ...) spent much effort struggling to understand these issues. We should not forget them.