Hungarian mathematical culture:
different interests, common features

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A success story

Hungarian mathematics in the 20th century: a success story without antecedents

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    Proper method: discovery

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A generation of teachers professors and secondary school teachers

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First decade of 20th century: Contributions to set theory (cardinality arithmetic)

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On LEM: it belongs to Gods logic, not to ours we dont have definite answers for every question

Georg Pólya (1887-1985)
classical analysis, heuristics

Pólya's 'return to philosophy'

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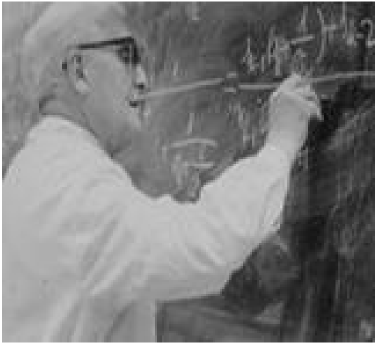
Mathematical intuition is not a mystic ability. It can be developed by the right way of mathematical education

László Kalmár (1905–1976)



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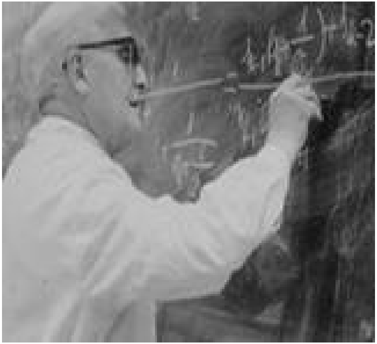

Logic (decision problem, consistency of arithmetics), computer theory

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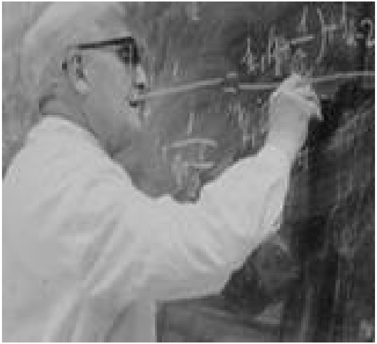

Logic (decision problem, consistency of arithmetics), computer theory

Several philosophical writings, always connected with the problems of teaching mathematics, and always stressing on the first place the fallibility of mathematics

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  - level of model construction (arithmetization)

  This road must not be spared when teaching mathematics. We should teach - on university level - the exact, modern concepts (example: the $\varepsilon - \delta$ definitions in analysis), but we must not forget about the intuitive basis of these concepts and about the reasons why they don't suffice.

The consistency proof

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  Published cca. 30 years later as 'Kalmár's proof' in the 2nd edition of Hilbert-Bernays, *Gundlagen der Mathematik* – although Kalmár insisted that it was just a reformulation of Gentzen's proof.

Hungarian 'new math'

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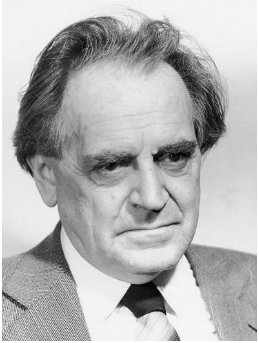
  "[M]athematical rigor can be acquired . . . only by developing the pupil's taste for rigor by starting with the intuitive point of view and showing repeatedly why some degree of rigor becomes necessary for certain problem."

A historian of mathematics



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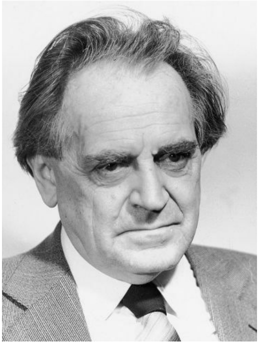

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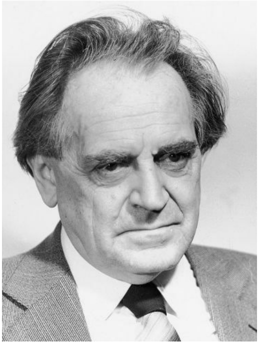

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After the '56 revolution: fellow of the academical institute for mathematical research (Rényi Institute)

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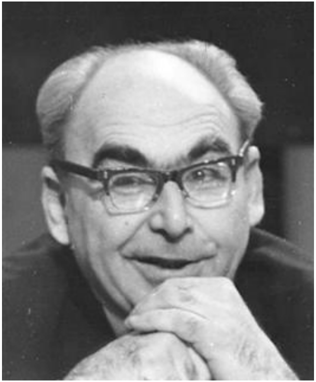
  Dialectics and discovery method of teaching mathematics are intertwined.

A many-sided talent



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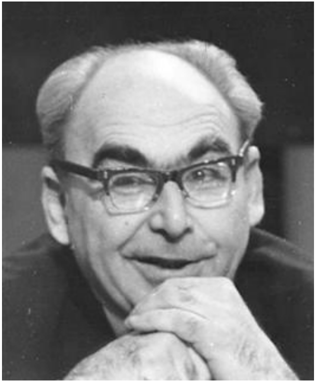

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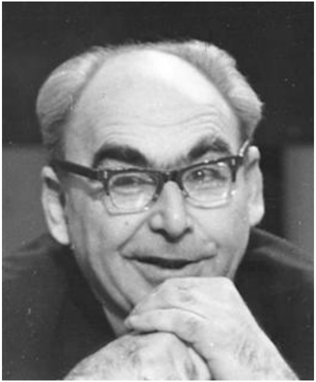

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Philosophical writings in literary form: pseudo-Platonic dialogues, pseudo Pascal letters

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  > 'If we say that Clytemnestra was guilty, it means only that this is how Aeschylus imagined her and presented her in his play. The situation is exactly the same in mathematics. We may be sure that the diagonals of the rectangle are equal because it follows from the definition of a rectangle given by mathematicians.'

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- A different philosophy of mathematics from Pólya, Kalmár and Lakatos - but fits into the 'humanist tradition' (R. Hersh).

The dialectics of mathematics

Imre Lakatos (1922-1974)

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Mathematics is not a shelter for those who want to live among indubitable truths.

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Thank You for Your Attention!