

The Magazine of the Polish Academy of Sciences

No. 2 (34) 2012

Quarterly

ISSN 1731-7401

Edited by:

Polish Academy of Sciences

© Polska Akademia Nauk 2012

Editor Address:

Polish Academy of Sciences
Office for Popularizing and Promoting Science
PKiN, pl. Defilad 1, 00-901 Warsaw, Poland
e-mail: academia@pan.pl
www.academia.pan.pl

Subscription:

academia.prenumerata@pan.pl

Editorial Staff:

Jan Strelau
Editor-in-Chief

Anna Zawadzka
Deputy Editor
Humanities

Katarzyna Czamecka
Managing Editor

Patrycja Dolowy
Biomedical Sciences

Agnieszka Pollo
Mathematics, Physics,
Chemistry, Technology

Kinga Malecka
Earth Sciences

Daniel Sax
English Language Editor & Translator

Caroline Stupnicka
Translator

Paweł Adamów
Art Director

Scientific Council:

Chairman:
Michał Kleiber
President of the Polish Academy of Sciences

Aleksander Posem-Zieliński

Jerzy Duszyński

Henryk Szymczak

Lucjan Pawłowski

Jacek Zaremba

DTP by Studio J.PJ.

Printed by Edit Sp. z o.o.

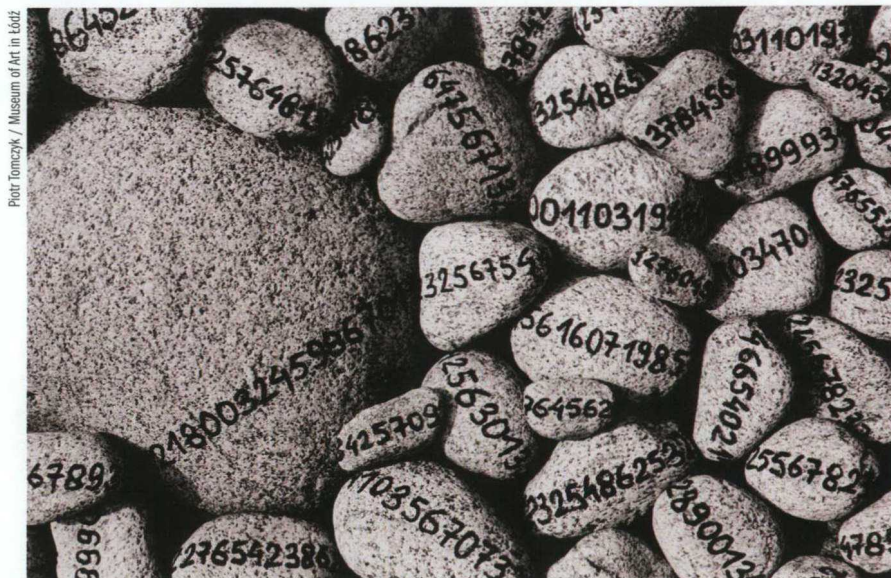
Numbers, Numbers Everywhere

„Numbers rule the universe,” Pythagoras is thought to have once said. They also dominate this latest issue of *Academia* magazine, which talks about how researchers are turning raw numerical data into knowledge: tracking **lynx populations** using telemetric data (p. 16), quantifying **social trends** (p. 12), creating **geochemical maps** through statistical analysis of surface samples (p. 36), drawing up **sea maps from satellite** calculations (p. 20), and taking an **infrared catalog of the sky** containing more than a million objects (p. 30). Imaging of a different kind has been used by astrophysicists studying the **limits of the heliosphere** (p. 8), and map-making is also going on at the Nencki Institute, where **3D brain atlases** are being compiled (p. 4). The calculations made by a team of female researchers at the PAS Institute of Geophysics in Warsaw have quantified how **polluted the dust** in our homes is (p. 28). Financial calculations, on the other hand, are a specialty of publishing houses trying to earn a **fortune from researchers' unpaid work** – the outrage at this state of affairs and rebellion against it within the academic community is aptly described in Prof. Włodzimierz Zawadzki's essay on p. 50.

For the issue's featured interviewee, **Prof. Andrzej Schinzel**, doing number theory can be a concrete and intellectual, but also esthetic experience (p. 40). In this sense a proof can be considered something beautiful, and numbers themselves something limitless, unbounded. Although **medieval art** tried to use symbols to pin down and tame that which is invisible and infinite (such as time, p. 38), modern art instead goes looking for such infiniteness. For the recently-deceased Polish artist **Roman Opalka**, for instance, the boundless progression of numbers illustrates life itself, taking on a nearly mystical import (p. 32). The myths of Europe and its coming to grips with totalitarianism, in turn, are described in the essays of Czesław Miłosz, analyzed in this issue by Prof. Grażyna Borkowska from the PAS Institute of Literary Studies (p. 24).

Let the number-crunching (and understanding) begin!

ACADEMIA staff



Continuity of Infinity

Zygmunt Rytka (born in Warsaw, 1947) is an inter-media artist, linked to the neo-avant-garde. He works mainly with photography, but also video and installations. He has won prestigious awards, including the Katarzyna Kobro Prize (2011) and the Gloria Artis silver globe (2009).

His most well-known cycles are Dynamic Objects, Supplementary Objects, and Continuity of Infinity, in which the artist photographs stones taken from the mountain river Białka, which symbolize the infiniteness and eternity of nature