



## Osmo Pekonen (1960–2022)

Johan Stén and Timo Tossavainen

Osmo Pekonen, longtime editor of the Reviews section of the *Mathematical Intelligencer*, died unexpectedly in Uzès, France, on October 12, 2022. He was participating in a culturally inspired biking event in the company of his friends. After a long day on the roads of the French countryside, Osmo went to bed tired yet content; the next morning, he did not awaken.

Osmo's scientific career is unique in its breadth, at least in his native land, Finland. He held four titles of docent, an academic rank equivalent to associate professor. Two of his docentships were in mathematics at the Universities of Helsinki and Jyväskylä, one was in the history of science at the University of Oulu, and one was in the history of civilization at the University of Lapland. He was also a corresponding member of no fewer than four literary and scientific academies in France. In 2021, the president of Finland awarded Osmo the honorary title of professor.

Osmo was born on April 2, 1960, the eldest child of a farmer in Mikkeli, a small rural town in the province of Savo. His father was politically engaged and served as a member of both the local municipality and the Finnish Parliament, representing the Centre Party. He was old enough to have participated in Finland's last pitched battles against the Soviet Union in the Second World War in 1944. Not surprisingly, perhaps, the Pekonen family cherished a humble love of the fatherland.

In school, Osmo excelled in all literary subjects and became fluent in four languages besides his mother tongue, Finnish. Having learned about archaeological findings in the neighborhood of the family's farm, he became interested in the past and devoured history books from an early age. Osmo's true vocation was, however, mathematics, which he began to study at the University of Jyväskylä in 1979. Early on, he also started to long for study abroad. Osmo was probably inspired in this by his teacher at the public school, whose two talented daughters had been awarded ASLA-Fulbright grants for studying in the United States. One of the daughters married the Tunisian-Italian-American mathematician Adriano Garsia, who paid a visit

to his wife's family in Mikkeli on the occasion of the ICM in Helsinki in 1978. During his stay, Garsia visited Osmo's homestead and encouraged the young talent, who had just participated in the International Mathematical Olympiad in Bucharest, to study mathematics in France.

As an exceptionally gifted student, Osmo received a stipend from a Finnish foundation to study at the University of Oxford. However, he asked and was allowed to exchange this for a scholarship at the École Polytechnique. There, he studied under the guidance of Max Karoubi and Jean-Pierre Bourguignon. The years 1984–1989, which Osmo spent in Paris, and the period at the Institut Mittag-Leffler in Stockholm in 1989–1990 were the pivotal years that determined the course of his future. He used to say that he went to France as a mathematical youth but returned home as a changed man. Later, he returned to France for fixed-term positions at the Institut Henri Poincaré, the Université Paris VII, and Université Nancy II.

Having defended his doctoral thesis, "Contributions to and a Survey on Moduli Spaces of Differential Geometric Structures with Applications in Physics," Osmo received his doctoral degree in mathematics at his alma mater in 1988 (see Figure 1). His research focused initially on differential geometry and mathematical physics, and especially on string theory. As he saw it, string theory was an elusive and difficult area, and he realistically considered his achievements in this field rather insignificant. Nevertheless, in 1991, he was a key organizer of the Second International Symposium on Topological and Geometrical Methods in Field Theory, in Turku, Finland. A climax of Osmo's mathematical career was his invitation to a conference on the "Theory of Everything." A group photo of the participants, capturing Osmo among nearly fifty other scientists assembled around Stephen Hawking, appeared on the front page of the German magazine *Der Spiegel* (Nr 30, 26.7.1999) with the headline "Gesucht: Die Weltformel" ["Wanted: The Theory of Everything"].

Besides craving mathematical knowledge, Osmo developed a taste for French culture and for France's rich intellectual history. He was also deeply affected by French Catholicism. In 2010, this finally led to his conversion from the Lutheranism in which he had been raised. Joan of Arc and Olaf of Norway, two Catholic saints, were a special source of inspiration for him. As a manifestation of his spiritual interests, he edited the Finnish translation of a collection of religious poems by Charles Péguy in 2003. For Osmo, there was no conflict between science and religion; religion was more about belonging than about believing.



**Figure 1.** Osmo after his commencement. A sword and a doctoral hat are the traditional insignias of PhD recipients in Finland and Sweden.

Side by side with his mathematical activities, Osmo enlarged the scope of his intellectual and literary endeavors into history and mythology. He used to tell a delightful story about how on one of his numerous conference trips, he saw two doors of adjacent conference rooms labeled “Math” and “Myth.” He was raised in the former, but having become seriously curious about the history of mythology and epics, he entered through the second door. This turned out to be a decisive step, which eventually led Osmo to collaborate with the English philologist Clive Tolley on the 1999 Finnish translation of the epic poem *Beowulf*. That collaboration continued with translations of two shorter Anglo-Saxon poems, *Widsith* (2004) and *Waldere* (2005).

As a historian of science, Osmo made his most valuable research contributions on the famous French geodetic expedition led by the eighteenth-century mathematician and natural philosopher Pierre Louis Moreau de Maupertuis in the Torne valley in Lapland in 1736–1737. Having read more or less everything published on the subject, as well as having visited the actual sites in Lapland and abroad, Osmo composed his second doctoral thesis on an almost entirely forgotten participant of Maupertuis’s expedition, Réginald Outhier. The thesis he defended in 2009 at the University



**Figure 2.** Osmo, a handsome man.

of Lapland was entitled *La rencontre des religions autour du voyage de l’abbé Réginald Outhier en Suède en 1736–1737* and was awarded the Prix Gustave Chaix d’Est Ange of the Institut de France in 2012. The thesis combined profound knowledge of science, semiotics, and the history of culture and religion. As a sequel to the thesis, Osmo wrote, in collaboration with Anouchka Vasak, the book *Maupertuis en Laponie* (2014).

For the readership of the *Mathematical Intelligencer*, Osmo is probably best known as the journal’s longtime Reviews editor. He described his editorial role as “the best of jobs in the best of all possible worlds.” From the beginning, in 2002, he was passionate about his job and actively invited distinguished mathematicians, philosophers, and others to write reviews for the *Intelligencer*. Confident in several European languages and well versed in the history of Western literature, Osmo encouraged reviewers, sometimes rather rigorously, to improve their manuscripts. Irrespective of the notoriety of an author, a mediocre summary was never good enough for Osmo. With the eyes of an Argus Panoptes, he spotted errors, inconsistencies, and deficiencies. Quite often, he made important additions to the texts before he considered them publishable. Regarding style, he liked to cite the Count de Buffon: “Le style c’est l’homme lui même” [“The style is the man himself”] (Figure 2).

Breadth of interest does not always lead to success in the competition for permanent positions in modern universities, however. That was the case with Osmo. After receiving his first PhD, he held, for some years, various temporary positions at the University of Jyväskylä, but for the last two decades of his life, he was not employed in academe but was rather an unsalaried independent scholar. Still, the university provided him with a free office, which was soon filled with books from floor to ceiling. On the wall, there was a large poster of Erasmus of Rotterdam, one of his great humanist heroes.

Osmo was both a sought-after speaker in cultural fora and an organizer of all kinds of events related to the history of mathematics, science, and nonfiction literature. He always prepared himself well for his talks, interviews, and



Figure 3. Osmo as Maupertuis and Johan Stén as Celsius.

performances and never underestimated the knowledge of his audience. Depending on the situation, he applied seriousness, piety, subtle humor, or wit to his presentation. His phenomenal memory allowed him to read and cite poems and hymns at will and in many languages. Many times, he truly left his audience in awe.

On the theatrical side, Osmo's favorite character, which gradually evolved into his alter ego, was Maupertuis.<sup>1</sup> He even starred in a documentary film in the role of Maupertuis, caparisoned in wig, cape, sword, and white gloves (Figure 3).

The short movie was directed in 2014 by Axel Straschnoy and has been shown in theaters around the world. Perhaps, following the Count de Buffon's principle, Osmo enjoyed dressing up on other occasions in his historical costume, which was made by a Parisian tailor (see Figure 4). As routine preparation for a talk as, or about, Maupertuis, Osmo would pop into a grocery store to pick up a lemon and a mandarin orange as props to illustrate the two alternative shapes of the Earth, the elongated and the flattened.

Osmo not only traced historical artefacts and biographical material, but with his vivid imagination and sense of drama, he knew how to picture himself and other people in the chain of events and the history of our time. He documented his own life meticulously, a routine he allegedly learned from one of the supervisors of his second thesis, Juha Pentikäinen, professor of religious studies. The three diaries, which he published in Finnish in 2015, 2017, and 2019, are rich testimonies to his at times breathtaking activity and journeys. For example, he would travel in as many as thirty countries in a year, and wherever he went, he somehow managed to get an audience with the scientific and diplomatic elite. He participated regularly in the International Congresses of Mathematicians from 1981 on and in the award ceremonies of the Fields Medals and Abel Prizes.



Figure 4. Osmo, with his portrait and the artist, in the studio of the Finnish portrait painter Svetlana Ruoho.

The last congress in which he participated as an invitee was the Heidelberg Laureate Forum in 2022.

For Osmo, another important way to express himself was through essays in the spirit of Michel de Montaigne. Many of his reviews of and forewords to books were written in such an essayistic style, filled with learned remarks, quotations, and footnotes. He valued aphorisms in the style of Blaise Pascal or Simone Weil and used to compare poems to mathematical formulas, since they capture the essence of a thought, an idea, or a feeling in a few carefully composed lines. As a poet, Osmo was proficient in metrical lines and one of the very few in his homeland who also could use them in practice. One of his latest translations into Finnish was the Swedish pastoral poem *Atis och Camilla* (1762/2019), in Alexandrine verse, by Count Gustav Philip Creutz. Osmo's translation of the medieval *Nibelungenlied* will be published in Finnish posthumously in 2023.

Also in his private life, Osmo was an exceptionally multifaceted person. On the one hand, he was the courteous and articulate cosmopolitan, a brilliant companion with a characteristic smile. On the other hand, in the company of ordinary people, he made an effort to share his knowledge

<sup>1</sup>See Osmo Pekonen. "My Life in the Shape of Maupertuis." In *Imagine Math*. Vol. 6, edited by M. Emmer and M. Abate, pp. 63–74. Springer, 2018.





Figure 5. Osmo and Kristóf Fenyvesi.

with his counterparts in their own language, making them feel equal and important. Similarly, he loved various physical activities such as cycling and cross-country skiing, but he also spent many periods in the silence of a monastery. An example of his creatively wandering mind is an essay from the 1990s that begins with Osmo describing an encounter with Dolly, the Finnish Dorset sheep that resulted from the first successful mammal cloning from an adult somatic cell, made by the associates of the Roslin Institute in Scotland. The essay continues with some reflections on the existence of a soul and the limitations of the natural sciences to answer the ultimate questions about life and our existence. After discussing some cleverly chosen examples, Osmo ends by proposing, for example, that the function of the human brain may be better understood by studying the products of the human mind than by scans in the laboratory. A somewhat unusual proposition from a string theorist, perhaps? Related to this, a question that Osmo was especially puzzled by is the mystery of human genius and creativity. What is the secret behind extraordinary talents such as Newton, J. S. Bach, Goethe, Gödel, or Claude Lévi-Strauss? With his mathematical mind and his understanding of the theories of semiotics, Osmo perceived hidden patterns in nature as well as in human life and societies.

One may ask whether he was a true Platonist. Osmo defied such labels, but for sure, he took the reality of his Creator seriously.

Osmo remained an unmarried man, but he enjoyed his time with his brother's family, which now takes care of their homestead. And he was highly motivated to share his enthusiasm for mathematics and science with children other than his nieces and nephews. Around 2015, Osmo joined the educational team of Kristóf Fenyvesi (Figure 5), a Hungarian-born philosopher and STEAM-pedagogue based at the University of Jyväskylä.<sup>2</sup> Together with Johan Stén, they visited schools across the country, talking about mathematical problems, playing mathematical games, and combining language education and history in their lectures. Dressed in his historical costume, Osmo made a lasting impression on the children. His essay *Pro liitutaulu* [Pro Blackboard], published in 2009 in the leading Finnish newspaper *Helsingin Sanomat*, is one of his most popular writings and even today is regularly cited in public debates on the quality of mathematics education.

One may wonder how Osmo found time for all that he was involved in. The most likely answer is that he was driven by a strong internal obligation. Osmo knew that he was unique and sometimes perceived himself as irreplaceable. Mother Nature—or God in Osmo's worldview—had equipped him with many great talents, and Osmo took it as his responsibility to share them for the good of society. An alternative explanation is that when he entered the door labelled “Myth,” he found his true character in Wonderland as an ageless boy, despite being six feet and three inches tall. Or in his case, in Arcady. With his curious and inexhaustible mind, he was surely much more of an adventurous boy than a laid-back old man. Yes, a boy he was, yet taller than most of us. He is deeply missed!

### Acknowledgments

Figures 1, 2, and 5 are from Osmo Pekonen's family photo album (Figure 2 was also published on the homepage of the Bridges 2018 conference). We thank Osmo's family for permission to publish them. Figure 4 is courtesy of Svetlana Ruoho. Figure 3 was taken by Axel Straschnoy, whom we thank for permission to publish.

<sup>2</sup>STEAM = Science, Technology, Engineering, Arts, and Mathematics.

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