

Leelavati Prize 2018 to Ali Nesin¹

Gert-Martin Greuel (University of Kaiserslautern, Germany)

Citation

Ali Nesin has been awarded the 2018 Leelavati Prize² in recognition of his outstanding contributions and great achievements in increasing public awareness of mathematics in Turkey, especially his tireless work in creating and developing the “Mathematics Village” as an exceptional, peaceful place for education, research and the exploration of mathematics for a wide range of people.



Fig. 1. Ali Nesin at the Award Ceremony on 9 August 2018.

Short scientific CV (Research)

Hüseyin Ali Nesin was born in Istanbul in 1957; he is a Turkish citizen. After junior high school in Turkey, he went to high school in Switzerland and studied mathematics at Paris VII in France. In 1981, he went to the USA and studied at Yale University, where he received his PhD in 1985. He held positions at several major universities in the United States, namely Berkeley, Notre Dame and Irvine, where he was an associate professor from 1991 to 1996. During this period, his research focused on algebra, in particular on the interplay of mathematical logic, model theory and group theory. In 1996, he became a professor at the newly established Bilgi University in Istanbul, where he founded the Department of Mathematics, which he has chaired until today.

He has published 37 research articles in leading mathematical journals and the highly cited research monograph *Groups of Finite Morley Rank* together with Alexandre Borovik.

Return to Turkey

Ali Nesin's career took a significant turn in 1995 due to the death of his father, Aziz Nesin, a legendary Turkish

writer of over 100 humorous and satirical books. Aziz Nesin had assigned the earnings from all rights from his published works to a charitable foundation, the Nesin Foundation, which he had established for the education of orphans and children from destitute families.

Ali Nesin gave up an academic career in the US and returned to Turkey to ensure the continuation of the Nesin Foundation.

He changed his life in order to realise his vision: the enhancement of understanding of mathematics among the youth as an essential force for the economic, social and cultural development of his country.



Fig. 2. Ali Nesin working with elementary school students.

Nesin's outreach programme

Ali Nesin's activities toward the awareness of mathematics in Turkish society are numerous. He initiated several outreach activities directed at the Turkish public in general as well as students of mathematics at the high school level and beyond.

From 2003 to 2013, he was editor-in-chief of *Matematik Dünyası* (“The World of Mathematics”), a monthly magazine for the popularisation of mathematics, which presented many fundamental notions of mathematics to the public (e.g. foundations of mathematics, theory of limits, graph theory, theory of groups and p -adic numbers). Each issue sold around 20,000 copies, which is very rare for such a journal.

He established his own publishing house, publishing popular mathematical texts, including nine of his own works of popularisation, as well as an ongoing series representing curriculum development at the Mathematics Village.

His materials for an open source courseware in Turkish were made available online through the Turkish Mathematical Society. He also authored many popular mathematical articles in Turkish, which appeared in periodicals aimed at a national audience.

In addition, he developed and taught a supplementary mathematical instruction programme for undergrad-

¹ Modified version of my laudation on Ali Nesin at the Opening Ceremony of the ICM 2018 in Rio de Janeiro.

² See <https://www.mathunion.org/jimu-awards/leelavati-prize>.

uates outside the regular school term. It was designed to bring the students quickly to a competitive international level and developed into the nucleus of the Mathematics Village after 2007.

Approximately 7,000 videos related to the activities of the Mathematics Village have been posted on YouTube, often lectures by Ali Nesin to students in the Mathematics Village, as well as a public lecture given at Gezi Park in central Istanbul. In total, these have been viewed several million times.

Ali Nesin's open source courseware received a prize from the Turkish Mathematical Society for expository excellence in 2010. He has also won prizes for several of his textbooks.

The idea of a Mathematics Village

However, what makes the work of Nesin unique, and what goes beyond all envisaged activities for the Leelavati Prize, is his creation, organisation and development of the Mathematics Village, in the face of considerable financial, bureaucratic and practical difficulties, and against ideologically motivated resistance.



Fig. 3. The Nesin Mathematics Village – a panoramic view.

The Nesin Mathematics Village is located on a physical site south of Izmir, near the village of Şirince in the region of the ancient Greek town of Ephesus. This site is owned by the Nesin Foundation and is dedicated entirely to teaching and learning of mathematics on a non-profit basis. It is fully devoted to the enhancement of understanding of mathematics of gifted students at all levels.

However, it is not in competition with the official education system but a supplement, giving students access to knowledge free from examinations and fear of failure, in the inspiring environment and stimulating atmosphere of a camp.

Construction of the Village

When Nesin first returned to Turkey, he quickly realised that the students in Turkey needed additional preparation for an education in line with international standards. He came to the conclusion that a new model of education was a necessity for the proper development of Turkish mathematics. He first organised addi-

tional lectures in his own house and in tents in various rural locations in Turkey, which soon attracted talented undergraduates from all over Turkey. Mathematically, these lectures were very successful but the organisation of the workshops at varying venues was very difficult, both financially and organisationally. He decided that the programme needed a permanent home.

In 2007, Ali Nesin, together with a close friend, the self-educated architect (and also a prominent Turkish linguist) Sevan Nisanyan, started the construction of the village.



Fig. 4. The Sevan Nisanyan Library, today.

Ali undertook the construction of the village, initially on a small scale. He had bought the land in a nice but remote area adjacent to the small village Şirince near Selçuk, Izmir. It was a great idea but also a daring adventure to start such an endeavour. The architectural challenges were to build a village nestled organically in the landscape of a deserted area and to transform the site into an inspiring environment aligned with the spirit of a new way of conveying mathematical understanding to Turkish youth.

Bureaucratic difficulties

Not counting the numerous practical problems, the bureaucratic difficulties to create the village were even greater.

The authorities refused an official building permit because the village had no officially registered “street”. Ali tried very hard to register the already existing path into an official street, spending a lot of money, but he failed. The building permit was never denied but it was also not granted. After some time, he gave up the idea of getting the permission and started the construction.

He was accused of having founded an illegal educational institution and of “teaching without permission”, contrary to the freedom of teaching of sciences guaranteed by Turkish constitution. However, the Mathematics Village is not an educational institution. Young people come there only for a week or two. There are no exams or grades and no diplomas or transcripts of any kind are issued. Nevertheless, the Mathematics Village was raided by Gendarmes and sealed. Fortunately, the case was dropped and Ali was saved from prison, and the village was reopened.

Part of the resistance to the Mathematics Village stemmed from antipathy to the name Nesin: Ali's father was a well known leftist and an avowed atheist, a very

controversial issue in the religious-conservative part of Turkish society. In 2014, Sevan Nişanyan (also a prominent atheist) was imprisoned on politically motivated made-up charges. He fled the prison in 2017 and now lives in Greece.

Ali just promotes sharing and learning of mathematics, and all his actions are non-ideological. The difficulties still continue, although less than in the beginning.

Support for the Village

The above mentioned difficulties could not stop Ali from realising the dream of a place where mathematical sharing and learning is possible in an informal environment, free from all constraints and only dedicated to enhancing mathematical understanding.

He received support from his colleagues and students, not only within Turkey but also within the international community.

Lectures were initially given in the so-called “Langlands Shed,” named in honour of Robert Langlands, who had generously donated a significant portion of his Shaw Prize and recently also his Abel Prize.



Fig. 5. The Langlands Shed, 2007.

The continuing support of the international mathematics community in giving advanced, intensive lectures on a voluntary basis during the graduate Summer programmes also played an important role in the success of the project.

The operation of the Mathematics Village is now self-sustaining, with public donations used only for the purpose of expansion and development.

Developing the Village

In the first year, only about 100 students participated in the Summer programme at an undergraduate and graduate level, taught by Ali and a few enthusiastic mathematicians.

The building complex expanded and more and more students could be admitted. Turkish graduate students also volunteered to give courses. Moreover, the village has become an important venue for international conferences.

In addition to university students, high school children from the age of 14 have also been admitted to the two-week camps during Summer holidays. The fees for

the high school programme are \$25 per day, reduced or waived whenever there are financial difficulties. The project enjoyed such a good reputation that it was considered an honour to be admitted. Many of the lectures are now viewable as videos on YouTube.

While normal high school education in Turkey is focused on university admission, with the typical focus on memorising, the focus in the Mathematics Village is on communicating, understanding and independent thinking.

Teaching and Learning

All teaching in the village is voluntary and unpaid; in return, the accommodation and meals for the lecturers are free. Most of the courses are in Turkish but some are also in English. The two-week cycles begin and end on Sundays with the departure and arrival of hundreds of students.

The university level courses are organised according to topics. The range of subjects is large. The programme for 2018 lists the following events on the English webpage: Week of Theoretical Physics, Antalya Algebra Days XX, Workshop on Integer Partitions, Randomness in Complex Geometry and Complex Analysis, Categories and Toposes and Non-Commutative Geometry, TMD Undergraduate and Graduate Summer School, High School Philosophy Summer School, International Aegean School of Human Rights.

Moreover, the Turkish webpage lists another 46(!) events, such as computer programming courses and physics schools but also completely different topics like seminars on cinema, architecture, arts, history, politics and a freedom philosophy Summer school.

The village attracts the best Turkish teachers and promoters of mathematics, as well as mathematicians from all over the world. Many lecturers are former students of previous Summer programmes in the village.



Fig. 6. Ali's enthusiasm during open-air lectures is contagious.



Fig. 7. Lecture in an open-air theater.

A few numbers

The village now comprises more than 35,000 square metres, approximately half of it consisting of olive groves. The complex of buildings, at the moment, consists of:

- Sixteen bedrooms, two amphitheatres and four closed and four open-air lecture halls.
- Two Turkish baths, 29 single or double rooms and a fully functional kitchen.
- A cafeteria, a small shop and a wonderful two-storey library.

The village has the capacity to accommodate 150 people, with the option of pitching tents if more capacity is needed. Sometimes the place is overflowing with about 400 students. In 2017, there were 10,379 visits by children of the age 13 or older as part of organised groups.

The holdings of the Sevan Nişanyan Library at the Mathematics Village are currently 15,000 books at a wide range of levels.



Fig. 8. Library conference hall and joint dining area.



Fig. 9. Sign my math book please!

Basic principles

In 2014, Ali Nesin expressed his ideas to expand the Mathematics Village by constructing adjacent Philosophy and Art Villages with the words:

“The whole valley should be dedicated to education – not a standard one but a ‘pirate’ one”.

This idea has been put into action. An independent Theatre School has been established on an adjacent site, also with the assistance of Sevan Nişanyan.

The Nesin Mathematics Village is now a cultural magnet and even a tourist attraction whose architectural principles have become fashionable in Turkey.

The governing aim is: access to knowledge, education and freedom, based on the principles of *safety – independence – responsibility*, derived from his experiences as Director of the Nesin Foundation. Quoting Ali:

“It is not possible to have a proper education in an environment without freedom. You can give an average education in an environment with restricted freedom, but not a proper one.”

Conclusion

According to the statutes of the Leelavati Prize, the prize is awarded to a person *in recognition of outstanding contributions for increasing public awareness of mathematics as an intellectual discipline and the crucial role it plays in diverse human endeavours*”.

It is hard to imagine that someone else has earned this award more than Ali Nesin.



Fig. 10. Sevan Nişanyan and Ali Nesin at the Award Ceremony.

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Furthermore, I have made use of the articles [1] and [2].

Photo credits

Fig. 1: Photo by Alexandre Campbell, ICM 2018. <https://www.flickr.com/photos/icm\2018/>.

Figs. 2, 6-1, 9: Screenshots from YouTube Video *Matematik Köyü* (Mathematics Village) by Ayser Sude Gök (2014). <https://www.youtube.com/watch?v=YUd3HvIQMEc>.

Figs. 3, 4, 8-1, 8-2: Photos by Burak Barutcu, courtesy Aslı Can Korkmaz.

Figs. 5, 6-2, 7: Photos by Alexandre Borovik.

Fig. 10: Photo by Alexandre Campbell, ICM 2018. <https://www.flickr.com/photos/icm\2018/>.

References

- [1] Krishnaswami Alladi, Gabriela Aslı Rino Nesin: The Nesin Mathematics Village in Turkey. *Notices of the AMS*, 62(6), 2015.
- [2] Gizem Karaali: Nesin Math Village: Mathematics as a Revolutionary Act. *The Mathematical Intelligencer*, Springer Science+Business Media, 36(2), 2014.



Gert-Martin Greuel is a professor emeritus of mathematics at the University of Kaiserslautern. He has been director of the mathematics research institute Oberwolfach (2002–2013), Editor-in-Chief of Zentralblatt Math (zbMATH) (2012–2015), and founder and scientific advisor of IMAGINARY, the platform for public awareness of mathematics.