

ORAL COMMUNICATION (RECREATIONAL MATHEMATICS)

Mathematical magic in Iberia in old times

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Abstract

In this talk we present some modern mathematical magic tricks related to concepts that appear in old texts. For instance, Gaspar Cardozo de Sequeira wrote a book in 1612 where a stacked deck of cards is described. On the other hand, Juan Caramuel y Lobkovitz wrote on the binary system in 1670. Many of the authors that contributed to the development of “serious” mathematics wrote also on recreational mathematics, since they are a source of examples for more complex concepts. Number guessing tricks are well known as applications of algebra and they appeared in the books from the very beginning.

References

- [1] J. Ares, J. Lara, D. Lizcano et al: *Who Discovered the Binary System and Arithmetic? Did Leibniz Plagiarize Caramuel?*. *Sci Eng Ethics* **24**, 173–188 (2018).
- [2] V. Meavilla: *Historia de las Matemáticas: algunos ejemplos de magia numérica extraídos de viejos libros*. EUREKA. Universidad Autónoma de Querétaro (México). *Revista de la Licenciatura en Matemáticas Aplicadas*, **17**, 24–32 (2001)

Fernando Blasco holds a PhD in Mathematical Sciences and is an Associate Professor of Applied Mathematics at the Polytechnic University of Madrid. Interested in scientific outreach, the relationship between education and dissemination, and the integration of science as part of culture, he has promoted innovative educational initiatives through recreational mathematics and mathematical magic. Since 2020, he has been the president of the Dissemination Commission of the Spanish Mathematical Society and a member of the Outreach and Engagement Committee of the European Mathematical Society.

For over 20 years, he has been a frequent speaker in teacher training courses, training for scientific museum guides, and numerous educational events both within Spain and internationally, especially in recent years in collaboration with the Cervantes Institute. He has built bridges between secondary and high school education and the university, collaborating in the presentation of the Polytechnic University of Madrid in educational centers, conducting activities to promote STEM subjects, and participating in committees developing university entrance exams. He regularly collaborates with the media and is responsible for the "Mathematics for Everyone" section on the program "On the Shoulders of Giants" on Radio Nacional de España.