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Mathematics in Mind

Series Ed.: M. Danesi

The monographs and occasional textbooks published in this series tap directly into the kinds of themes, research findings, and general professional activities of the **Fields Cognitive Science Network**, which brings together mathematicians, philosophers, and cognitive scientists to explore the question of the nature of mathematics and how it is learned from various interdisciplinary angles.

The series will cover the following complementary themes and conceptualizations:

- Connections between mathematical modeling and artificial intelligence research
- Mathematics, cognition, and computer science, focusing on the nature of logic and rules in artificial and mental systems
- The historical context of any topic that involves how mathematical thinking emerged, focusing on archeological and philological evidence
- Connection between math cognition and symbolism, annotation and other semiotic processes
- Interrelationships between mathematical discovery and cultural processes, including technological systems that guide the thrust of cognitive and social evolution
- Other thematic areas that have implications for the study of math and mind, including ideas from disciplines such as philosophy, linguistics, and so on.

The question of the nature of mathematics is actually an empirical question that can best be investigated with various disciplinary tools, involving diverse types of hypotheses, testing procedures, and derived theoretical interpretations. Among the questions that will be addressed in the series include:

- Is mathematics a unique type of human conceptual system, sustained by specific and localized neural structures, or does it share neural systems with other faculties such as language and drawing?
- Is it brought forth via the recruitment of everyday cognitive mechanisms that undergird imagination, abstraction, and notation-making processes possible?
- Is mathematics a species-specific trait, or does it exist in some form in other species?
- What structures, if any, do mathematics and language share?
- Does figurative cognition, as many cognitive scientists now claim, provide a clue to understanding how mathematics emerges?
- Is mathematics an innate faculty or is it forged in cultural-historical context?



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