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In this paper we investigate the human reasoning applied to the mathematical problem-resolution process. Our approach is based on two main settings: *a.* the investigation of mental processes involved in the human reasoning applied to problem resolution; *b.* the analysis of differences in the categorization and resolution of mathematical problems by novicesrs and experts.

In *a.* we sought to contribute for the rupture of the logical-formal reasoning paradigm. In fact, we sought to contribute for the rupture of the idea that identifies the human as a completely rational entity, which invokes a thinking way that adheres the rules of an explicit form. Our results show that the human reasoning is not determined exclusively by logical-formal guidelines, but is rather determined by characteristics and pragmatics aspects of the context.

In *b.* we sought to analyze more effectively the problem-resolution process. We concentrated our discussion on the differences in the categorization and resolution of mathematical problems by novices and experts. Our results indicate for a problem categorization and subsequent resolution: experts are guided by organized logical principles, and novices are guided by superficial elements found in its enunciation.