Human Reasoning:
An Analysis of the Mathematical Problem-resolution Strategies

Manoel CAETANO
LCC/CCH/UENF
Av. Alberto Lamego 2000
28015-620 Campos RJ Brazil
T: 55 22 27261589 / F: 55 22 27261589
manoelcaetano@hotmail.com

Adriana SOARES
UNIVERSIDADE GAMA FILHO
Mestrado em Psicologia
Rua Manuel Vitorino 625 Prédio CP
20748-900 Piedade Rio RJ Brasil
T: 55 21 22748407 F: 55 21 22748409
mespsi@ugf.br

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.