The MMDR and Machine Learning methods were developed in parallel in the West and in Russia [Int. J. of Pattern Recognition and Artificial Intelligence, 1989] for two decades. Due to many historical reasons, the work in Russia was not well known in the West.

The research was concentrated in Pattern Recognition and Applied Logic laboratories in the Institute of Mathematics of the Russian Academy of Sciences (Akademgorodok, Novosibirsk). What is the difference of MMDR, developed in Russia, from other data mining learning methods dealing with first-order logic [Mitchell, 1997, Russel and Norvig, 1995]?

From our viewpoint, the main emphasis in other first-order methods [Mitchell, 1997, Russel and Norvig, 1995] is on two computational complexity issues: how wide is the class of hypotheses tested by the particular data mining algorithms, and how does one construct a learning algorithm to find deterministic rules limiting a search space.

The emphasis of MMDR is on probabilistic first-order law-like rules and measurement issues for numerical relational methods i.e., how can one move from a real measurement to a first-order logic representation. This is a non-trivial task [Krantz et all, 1971, 1989, 1990]. MMDR uses hypothesis/rule generation and selection processes, based on fundamental representative measurement theory [Krantz, Luce, Suppes and Tversky, Foundations of measurement, 1971, 1989, 1990.] The original challenge for MMDR was the simulation of discovering scientific laws from empirical data in chemistry and physics. There is a well-know difference between black box models and fundamental models (laws) in modern physics. The latter have much longer life, wider scope, and a solid background. There is reason to believe that MMDR caught some important features of discovering these regularities (laws). As was already mentioned, this is an area of extensive research during the last decades.