Re: Epistemology 201: The Science of Science

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From: robert j. kolker (*nowhere_at_nowhere.net*)
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Albert Wagner wrote:
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>
> *An algorithm is an algorithm and data is data. So fuck you and your*
> *'mathematicians stock and trade'.*

And a postulate is a postulate and a theorem is is theorem. Why are you so hostile to what mathematicians do?

In point of fact it is mathematical analysis that has produced the numerical methods frequently implimented as programs. Long before the first computing machine was ever designed, algorithms for solving differential equations (ordinary and partial) were developed and show to converge to the correct solutions. Algorithms for find roots of equations existed long before computers. Isaac Newton himself made the earliest contributions to the application and solution of finite difference equations. Effective methods of finding definite integrals with definite limits were developed long before computers. For example, Simposon's Rule.

Computers and programming have been more of a force multiplier to mathematical algorithms than a replacement. The only area in which computers and programming techniques have constituted breakthoughs is in the area of graphics and other visual representations and real time control. Ray graphics cannot really be done effectively except with a computer. Bitmapped graphics along with dithering and aliasing tricks have produced dazzling displays and motion picture fx would be very backward without computers. Computerized realtime control has made fly−by−wire and hands off flying possible and safe.

Even so, the underlying theory of these dazzling techniques were developed well in advance of and distinct from programs. Bellman and Wiener developed cypernetical applications on a purely mathematicatial basis for example.

Bob Kolker