

ICM 2006

CLOSING ROUND TABLE

*Are pure and applied
mathematics drifting apart?*

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I am not an applied mathematician, and the viewpoint I will present is that of a fascinated outsider.

I will argue that one can recognize three basic modes of how mathematics helps us to understand the world: models, theories and metaphors.

- Models involve measurements. Guesses, computing power, and in the final count, practical use.
- Theories sometimes develop from models. They differ from models basically by being more ambitious, but there is also a qualitative leap between the two modes.
- Metaphors ("man-machine", "invisible hand", "artificial intelligence" ...) can generate models and theories, but their principle function is to inject a flavor of human values into an abstract cognitive discourse.