

The economist Asha Badlani describes how chaos theory influences her work

Interviewer = I

Asha Badlani = A

I: Asha, chaos theory seems to be a branch of physics or mathematics. You're an economist, so how does it influence your line of work?

A: Well, in a number of ways. I'm responsible for financial development programmes in many parts of the world, so forecasting long range trends and making predictions on the basis of present evidence is what I do. Chaos theory was developed by scientists trying to explain the movement of the planets and changes in environmental conditions. Both of these things are also about making long term predictions on the basis of present evidence.

I: Are many economists involved in this field?

A: An increasing number. In the 1990s a lot of economists began to look at chaos theory as a way of providing models for forecasting.

I: What kind of "models" are we talking about here?

A: Well, that's a good question, because of course the basic idea of chaos theory is that there aren't any "models" as such – there aren't guaranteed forms, but rather patterns of change and development.

I: Doesn't that mean that forecasting is impossible?

A: No, but it certainly makes it more of a challenge. Mandelbrot, who did the experiment with stock exchange prices, for example, noted that although the outcomes were variable, there were in fact certain constants. What we have to do is make sure we know what these are and take into account all the possible variables.

I: But do economics and finance work in the same way as weather conditions or the movement of plants?

A: Well, no, of course not – but there are certain underlying similarities. In the past, people thought of these things as "linear systems", now we know they're not.

I: What do you mean by "linear system"?

A: Well, for example, in a classic linear system, if I do *a*, then I know that *b* will happen and *c* will occur as a result of this, and so on. But according to chaos theory, a number of variables can change what will happen between *a* and *b*, and then between *b* and *c*.

I: Sounds complicated!

A: Yes, well, it *is* complicated, there's no escaping that! However, a lot of what chaos theory teaches us is simply about accepting uncertainty. We have to accept uncertainty. We can't guarantee that things will turn out as we planned them when working with complex, non-linear systems - nor sometimes with simple systems!