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### **Learning Together: Exploring systems thinking – with Dr Russ Ackoff**

*How can we learn new ways of thinking?*

Ah, the board up here, if I can call it that, has a quotation out of the New York Times of a few years ago, which says something that's been said by many others in many different ways, that we are in the critical stage of cultural change, called the "change of age".

A change of age doesn't occur very often. The last one was called the Renaissance and that was 400 years ago.

But it seems apparent, to those who reflect on these things, that shortly after World War II we began to go through cultural transformations that constitute a change of age. Now that change involves a lot of other contributory changes, the most important of which is: that our way of thinking changes.

That was recognised perhaps most acutely and with greatest brevity by Einstein, when he made this famous statement that "you can't solve the problems created by our current pattern of thought using our current pattern of thought."

The interesting thing about this quotation is I've never found a manager or a professional who disagreed with this statement, but I found dam' few that ever knew what it meant. It's very easy to agree with something the meaning of which is completely vague.

In the Renaissance, when science as we know it today was born, naturally they had to have a way of inquiry that you can call "the scientific method". It's a method of inquiry which comes perfectly naturally to us. You can see it today in a child. You take a child, not an infant, somebody between 2 and 5 years old, and give them an object they have never seen before, and leave them alone with it: they are curious. What process will they go through?

Well it's a 3-step process, and not surprisingly it's called analysis: first thing you do is take it apart; then you try to understand what the parts do; and then finally assemble the understanding of the parts into an understanding of the whole.

Our entire culture is built on analytical thinking. If you go to a university to study any subject, say Business, you don't take courses in Business: Business is broken down into its parts – Production, Marketing, Finance, Personnel. And you study each of the parts, and the assumption is that you when you know the parts taken separately you will be able to integrate the understanding of the parts into an understanding of the whole. It's analytical thinking.

Now analysis permeated all of our institutions. It permeates corporations: how do you run a corporation? Divide it into parts – either functionally, or by product, or by geography – then you arrange to run each part, then you try to aggregate or integrate the running of the parts into the running of the whole – it's an analytical process. Organisational structure is a complete reflection of analysis, just as a university structure is. Every subject is broken up into pieces, and the studies that are conducted are the studies of the parts, hopefully leaving the student (or somebody to help them) to synthesise the parts at the end into an understanding of the whole.

Now all of this started to get us into trouble in the 1950s, for an interesting reason.

A German biologist by the name of Ludwig von Bertalanffy migrated from Germany to Canada because of persecution by Hitler. And when he got there, he took a number of the articles he had written in German and translated them into English, and put them into a book. The book appeared in 1954, and the book itself is not so important, but the concept on which he focussed turned out to be incredibly important. The book was called "General Systems Theory" and it was the concept "system" which was essentially the camel that broke the back [*sic*] of the previous era.

"How" and "why" requires that we understand what a "system" is, and the problems of analysis

cannot answer the critical questions about systems.