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On behalf of the Organising and Programme Committees, we would like to warmly welcome you all to the 17th International Conference of the System Dynamics Society, which is being held in conjunction with the 5th Australia and New Zealand Systems Conference. We are very pleased that you are here in Wellington, New Zealand to share in Victoria University’s Centennial Year celebrations. We would also like to celebrate that this is the first time that the System Dynamics Society has held its international conference in the Southern Hemisphere, and this is also the first time that the Australia and New Zealand Systems Conference has been held in New Zealand. We hope that these events will occur a little more frequently in the next millennium!

As you all know, we are here to discuss/debate the conference theme of ‘systems thinking for the next millennium’. Sub-themes will examine the applications, contributions of and linkages between systems thinking, scenario planning and strategic simulation. These themes will be addressed through the perspectives of:

- System dynamics
- Hard, soft and critical systems
- Adaptive and strategic planning
- Organisational learning and research
- Chaos and complexity
- Philosophy of systems thinking
- Action learning and research
- Community and soft OR
- Management science methodologies
- Cognitive processes in systems thinking and learning
- Systems methodologies

In other areas of interest, parallel sessions and some plenary sessions will cover the range of work being done by systems thinking and system dynamics practitioners worldwide. There will be over 200 paper presentations, workshops and tutorial sessions over the 3 ½ day conference, and participants are from 40 different countries...
from around the world. Among the keynote speakers we are pleased to welcome:

**Professor Richard Bawden** from Michigan State University, USA, a leading figure in systemic development, who will give the Fred Emery Memorial Address entitled “Systems Thinking (and Action) from the new Millenium: Learning from the Future”.

**Professor Peter Checkland**, Professor of Systems from Lancaster University, UK, who will give a keynote address on “Soft Systems Methodology: a 30-year Retrospective”.

**Professor Geoff Coyle**, currently a visiting Professor of Strategic Modelling at the University of South Bank, UK, who will give keynote address entitled “Qualitative Modelling in System Dynamics or What are the Wise Limits of Quantification”.

**Professor Bob Flood**, currently a visiting Professor at Monash University, Australia and Lincoln University Campus, UK, who will be giving a keynote address entitled “No More Problems, Solutions, or Normal Organisational Life”.

However, the success of a conference depends on the contributions of all the participants – the presenters, the session chair persons, the discussants, the delegates, and the administrators. We welcome you all here to Wellington and wish you a tremendous conference – an opportunity to learn and share your experiences, and hopefully enjoy the hospitality that we have organised for you and what ever else you may find that Wellington and New Zealand can offer you!

However, before we pass you over to Professor Eric Wolstenholme, the organiser of the 1994 International System Dynamics Conference in Stirling, Scotland, that also involved the wider systems community; and then to the current President of the System Dynamics Society, Dr Jack Pugh, one of the founding fathers of the field of System Dynamics and designer of the DYNAMO, the original dynamic simulation software for system dynamics models, we would just like to say a few words of thanks to our Conference Sponsors.
This conference would not have been possible without the generous support of our sponsors. In particular, we would like to thank our hosts the Graduate School of Business and Government Management at Victoria University (VUW) and in particular, we would like to thank John Greenwood for doing such a tremendous job with our conference web site, and our Australasian Conference Manager, Margaret Stevenson-Wright and Conference Assistant, Joy Candlish. Without their untiring work over the past couple of years, this conference would not have been organised as smoothly or as well, and we are very grateful for the sponsorship of the Executive Development Programme at VUW for sponsoring two of our keynote speakers, Professors Richard Bawden and Geoff Coyle. We would also like to thank Professor Pat Walsh and the School of Business and Public Management at Victoria University for their assistance with the preparation for this conference and for sponsoring another keynote speaker, Professor Peter Checkland.

We are also extremely indebted to all the international and other New Zealand sponsors. In particular we would like to thank Arthur Andersen for their extremely generous support in hosting our Welcome Reception to be held in our new national museum, Te Papa. We hope you will be able to take some time out from the busy conference schedule to spend some time browsing around our new museum (which is the envy of most Aucklanders!). We would also like to take this opportunity to thank HVR Consulting Services from the UK for sponsoring the special edition of the Journal of the Operational Research Society of UK on System Dynamics (that is provided in each of your conference satchels). We apologise that we have only provided you with a hard copy of the abstracts to read while you are here, although there are over 150 conference papers on the CD that you can browse through at leisure when you return to your home countries.
We would also like to thank our New Zealand sponsors for providing the New Zealand consultants’ wine and cheese reception (ie The University of Auckland Business School; High Performance Learning Systems Ltd; and the New Zealand Organisational Learning Centre). And finally, but certainly not least, we would like to thank all the other sponsors who have generously supported this conference (ie Pugh-Roberts Associates, Inc.; A.T. Kearney, Inc.; High Performance Systems, Inc.; Powersim, Ventana Systems, Inc, Pegasus Communications, Inc, and John Wiley & Sons, Ltd, and the New Zealand Ministry of Health).

We would also like to express our warmest gratitude to the endless efforts of Roberta Spencer, and her colleagues, at the Executive Office of the System Dynamics Society in Albany, USA. Roberta has been extremely helpful in her role as International Conference Manager for this conference.

Finally we would like to thank the other members of the Organising and Programme Committees for their help and all the referees that refereed the Plenary Papers, to help maintain the high international standard for this conference.

We wish you all a very stimulating and interesting conference, and we hope you have a very enjoyable time while you are here in Wellington and New Zealand.

Best wishes from

Bob Cavana
Conference Chair

Jac Vennix
Programme Chair
Linking Systems Conferences: Feedback as Baggage

Eric Wolstenholme

An Opportunity

By combining the 1999 International System Dynamics Conference with the Australian and New Zealand Systems Conference, the organisers of the event have signalled a timely return to the theme of the relationship between two distinct strands of systems concepts. These are, US systems thinking, as defined by qualitative system dynamics, and UK systems thinking, as defined by soft operational research (soft OR). Exploration of this theme was begun by myself at the 1994 International System Dynamics conference in Stirling, Scotland and referred to as “System Dynamics – Exploring the Boundaries”.

The conference organisers have kindly given me the platform here to present some thoughts to assist the conference in making the most of this opportunity to further explore the linkages between these strands of systems thinking.

A Little History

Let me start by explaining why I think this exploration is important.

In 1979 when I had studied system dynamics for about three years, I was involved in teaching for the Open University in the UK using the first soft operational research approach, which was that of Peter Checkland’s Soft Systems Methodology (SSM). My contribution to this teaching was, to the amazement of the Open University, to incorporate causal loop maps into the creation of rich pictures. Here was a significant UK systems faculty who limited their ‘diagramming’ to Venn diagrams and the nearest they got to dynamics was to create flow diagrams. They had never seen causal loop maps. In fact, the use of system dynamics within SSM was later suggested by
Peter (Checkland, 1981). In general there existed a distinct lack of appreciation of the power of system dynamics in the UK and likewise there was a similar ignorance of soft OR in the US.

This disparity between the UK and US versions of systems became a research strand of mine and I started to pose the question as to whether system dynamics was a technique of computer simulation or systems methodology in its own right like SSM (Wolstenholme, 1982). I later proposed qualitative system dynamics as a free standing concept (Wolstenholme and Coyle, 1983; Wolstenholme, 1985) on the grounds that, even in qualitative form, it advanced thinking further than some other systems methods. During the 1980s there was a surge of further thinking about systems in the UK and a number of other strands of soft OR emerged, including Strategic Choice, Critical Systems Heuristic, Strategic Options Development and Analysis, Strategic Assumption Surfacing and Testing and Total Systems Intervention. Also during this period, systems thinking was used by Senge in the US to mean qualitative system dynamics (Senge, 1990) and qualitative system dynamics was proposed as a formal part of system dynamics (Wolstenholme, 1990).

The 1994 SD conference brought together proponents of many of the above strands of systems thinking and a broad range of views were aired. However, many misunderstandings still persist between the UK and US strands of systems ideas which should be debated whenever a mixed conference of systems practitioners, like the one here, meet.

A Personal View

My own conclusion about the links between system dynamics and soft OR is much clearer today than prior to the Stirling conference and is very similar to what Peter Checkland has always intimated. I will share these here to provide a baseline for your thinking during the conference.

This view is that Peter Checkland’s original SSM was not only the first attempt, but the definitive 'shell' for true systems thinking. In
summary (and in my own words with apologies to Peter for any omissions or shortcuts) it simply says that:

- systems do not exist in the real world, there are only messes in the land of "what is".

- systems thinking takes place in the systems world, which is a place across a systems boundary where "what should/might be" is designed from entirely new premises.

- there is a need in a systemic design to be specific enough to be useful, whilst being vague enough to be relevant and unbiased.

- any attempt to take worldly concepts (such as a feedback paradigm) into the systems world can cause bias.

- if you take any baggage you should recognise that you have (warning to system dynamicists).

- having designed a new relevant system in the systems world, you then return to the real world and, by comparison with the original mess, establish appropriate change.

BUT, there is nothing wrong with using any techniques (systems or otherwise), either within the real world to demonstrate ‘what is’ or within the systems world to design ‘what might be’, as long as you recognise their bias and limitations.

On this basis, I believe that the original SSM subsumes all other forms of system thinking, although this might not be true of the secondary literature in SSM, which tends to be much more prescriptive and to carry its own baggage.

Conference Thoughts and Baggage

So what are the thoughts to leave you with?

When you apply methods of systems thinking, be aware of your baggage. This is often deep seated. Your baggage can be ageism, religion, sexism, diversism…or feedback. The really big question for system
dynamicists to ask themselves, is still the question I posed in 1982. That is:

“is feedback a piece of baggage that you do not even realise you carry, or is it such an endemic and integral part of the life that it cannot be left behind?”

Hint. This question perhaps requires a breakdown of feedback into different types. For example, there is sub conscious feedback in our bodies that we can never leave behind and there is learned feedback that we could unlearn. But there is also ‘conscious choice’ feedback that can certainly be left behind, just like we could shake off all those ‘isms’ if we really wanted to.

Finally, a word to put the whole thing into ultimate perspective, which was beautifully summed up by the after dinner speaker we had at the Stirling conference:

“All systems methods are systemic and are a long way from piecemeal thinking. To an outsider

like me all these systems methods seem the same and does it matter if there are slight differences”.

You decide it really matters and if you can honestly answer my question. Good luck with the conference and may you have profound thoughts. Please also integrate by attending sessions in systems methods outside your own wherever possible – let’s not have two, parallel conferences.

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