

# **OBSERVING SYSTEMS**

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## **AIMS**

As researchers we observe the dynamics of learners and groups of learners in communication with one another. Learners in communication can be said to form a social system. We will explore the differences and similarities in the three perspectives on the observation of social systems of Bateson, Maturana and Varela and Luhmann. In a reading which participants will get before meeting the author states:

Gregory Bateson defines information, or the basic unit of information in communicational and mental processes, as "a difference which makes a difference" (e.g. Bateson, 1972:453). And in Niklas Luhmann's terminology, observation means nothing more than handling distinctions - making a difference in this context involves an observing system (Alrøe, 2000).

Maturana and Varela deal with the issue of observers making distinctions within systems of which they are a part. All three perspectives bring a systems view to the making of distinctions and cognition. The aim of this working session is for us to understand more fully the differences in these approaches, and their use in observing cognition in individuals and in social systems.

## **ACTIVITIES**

The work of the session will revolve around analysis of a video-tape segment and associated transcript. Relevant selections from the literature will be distributed ahead of time to prospective participants, to establish a basis for our work. Multiple viewings of the video, small and whole group discussion of it from perspectives guided by the three approaches, and sharing interpretations of the data seen from these perspectives will be the main activities during the two 90 minute programme slots. Participants will be invited to continue our collaboration via email after PME25.

## **REFERENCES**

- Alrøe, H.F. (2000) Science as systems learning: some reflections on the cognitive and communicational aspects of science, in *Cybernetics and Human Knowing*, Vol 7, No 4, pp 57-78.
- Bateson, G. (1972) *Steps to an ecology of mind*. Ballentine Books, New York.
- Luhmann, N. (1995) *Social Systems*. Stanford University Press, Stanford, California
- Maturana, H. R. and Varela, F.J. (1992) *The tree of knowledge - the biological roots of human understanding*. Shambhala, Boston.

