desirable at this time. Several strands that have been created need to be woven together, though a definitive 'closure' of how this is to be done would be premature. Two of these strands are the cognitive and the empirical. Two more are:

1. That core part of IS concerned with human information-seeking or response to information supply. Associated with this is a need for methodologies to study such behaviour and for a philosophy or a calculus to describe the activities.

2. The formal, scientific study of files of stored messages (eg sequence of signs) and the technology and economics of file-handling. This requires study of languages employed by users and authors as well as users in interacting with files and one another.

In sum, this group appreciated the work of the organizers for raising the questions and the chance for grappling with them. It agreed that no closure on the question about the kind of science IS should be could be reached at this time.

M. KOCHEN

FORMALISMS

We tried to work within the framework drawn up by the Reporting Group on Phenomena. We found that most of the existing formalisms in Information Science lay within the micro-level activities occurring along the transmission channel (traditional documentation activities). In trying to diverge from this area to the outer edges of the matrix we felt we were entering a "fuzzy region" which exists because of the very weak nature of the laws of Information Science. There was a general consensus of opinion that there is no necessity to construct new formalisms to cover this region because there are many formalisms in other disciplines (computer science, operational research, management science, statistics, "fuzzy mathematics", etc.) which

can be employed.

In addition to the levels shown in the phenomena matrix we felt that we would:

1. restructure the macro-level to include just libraries, files and data-banks;

2. add a super-macro level to include complete information systems;

3. add an ultra-macro level to include systems at an econometric, international level.

At the lower end of the scale we added a nuclear level which would consist of the basic units of information science (bit, symbol, etc.)

We agreed that the following areas should be considered in depth:

1. Scaling factors:- try to find equivalents of M,L,T in order to get a more qualitative idea of our field.

2. Standardization:- eg in data collection

3. Rhetoric:- structures of inter-personal communication

4. Limits of precision:- eg use of probability theory.

To conclude, we constructed a list of areas in which we would: expect an Information Science student to have some experience:

1. General science background (maths, physics)
2. Statistical inference (decision theory)
3. Properties of statistical distributions
4. Concepts of game theory
5. Shannon signalling theory

J.M. GRIFFITHS