



HOME ASSIGNMENT

GST/PCC++ SUMMER SCHOOL 2003

”COMPARATIVE FORMATION OF KNOWLEDGE: THEORY OF SCIENCE AND SCIENTIFIC METHOD”

The assignment

The first group discussion during the course week focused on the research context (i.e. culture, organization, heroes, journals, etc.) for each specific discipline participating in the Summer School. The second group discussion focused on the content of the different research disciplines, links and gaps between them.

The purpose of the home assignment is to help you increase your understanding of the fundamental aspects of *your own* research (sub-)discipline/tradition and research topic. You are to formulate and discuss some of the concepts and ideas that have been presented during the course, but in your specific context. You should use all the material used during the week including the course literature. You may of course also use additional sources such as other books, articles etc. Use as many examples as possible.

The task is to write a short ”report” (4-6 pages) in which the issues posed below under the heading ”Questions” are treated and discussed.

The assignment is to be carried out in groups of 2 – 3 people from the *same* (sub-)discipline/tradition/research group, that is: (1) Signal Processing/Communication Theory, (2) Radio Communication Systems, (3) Computer Networks or (4) Computer Science. It is preferred that all the participants in the group have the same advisor. Before the report is submitted, it shall be discussed with the advisor(-s).

Submit the report by e-mail no later than on *September 15* to Bo Karlson, Wireless@KTH. In addition you shall send a short statement from your advisor(-s) saying that he or she has read and discussed the report with you. Without this statement, we will not read the report.

Good Luck!

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QUESTIONS

0. Which is your research discipline?
Which research group do you belong to?
Who is your advisor?
1. Looking back at Group Work II, describe the *context* of your research topic. Which are the neighboring (sub-)disciplines/traditions if any? Is there a direct connection between your topic and topics researched in industry? Which is the purpose of your study?
2. Underlying all research is a number of “fundamental points of departure”. Some of these are quite explicit and easy to identify (even though they might seldom be discussed or questioned), whereas others are implicit and never discussed, and still others are not even formulated. Focus on your own discipline and try to find and formulate the most fundamental *suppositions* (known assumptions explicitly expressed or implied). In addition, discuss the concept of *presuppositions* (implicit assumptions, not necessarily known, that you are immersed into) and compare with Toulmin’s *Ideals of natural order* (see “Foresight and Understanding”).
3. An important part of the TRE model is the schematization of the object(-s) under study. The schemata and the relationships between them can be described as a “bare model”. Sketch at least one *bare model* central to your discipline and describe the *schematization process* (i.e. how you reasoned when sketching it). Which is for example the object under study? Which are the qualities (referring to the reality) that you replace with attributes in the schemata? Which simplifications are made?
4. What is considered *scientific* varies between disciplines as well as over time. Discuss what makes your research project or topic scientific? How is this determined and by whom?
5. During the course we have discussed an important distinction between three forms of knowledge:

Propositional knowledge (cf. explanations, explicit knowledge)

Knowledge of familiarity (cf. understanding)

Practical knowledge (cf. doing)

Try to identify and discuss a few situations/instances/cases in your research tradition when the scholar (e.g. you) needs *knowledge of familiarity*. Also, try to identify and discuss a few situations/instances/cases in your research tradition when the scholar (e.g. you) needs *practical knowledge*.

When discussing the questions, be as explicit as possible. Use examples and concrete “cases”. Above all, we want you to discuss *your* research, not the concepts and ideas in general!