EXPERT JUDGMENT

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LECTURE 1

Introduction

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What is expert judgment?

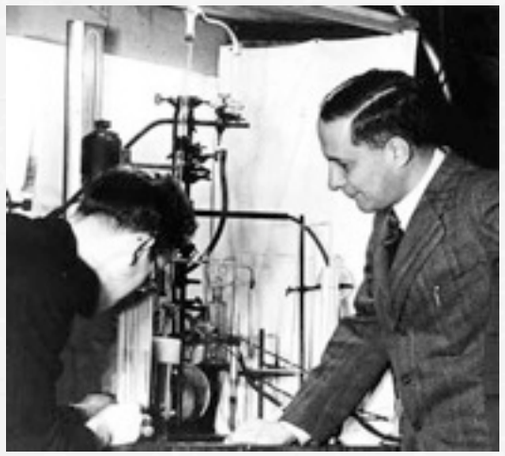
✓ Expert judgment is a type of judgment that is based on the personal knowledge of an “expert”.

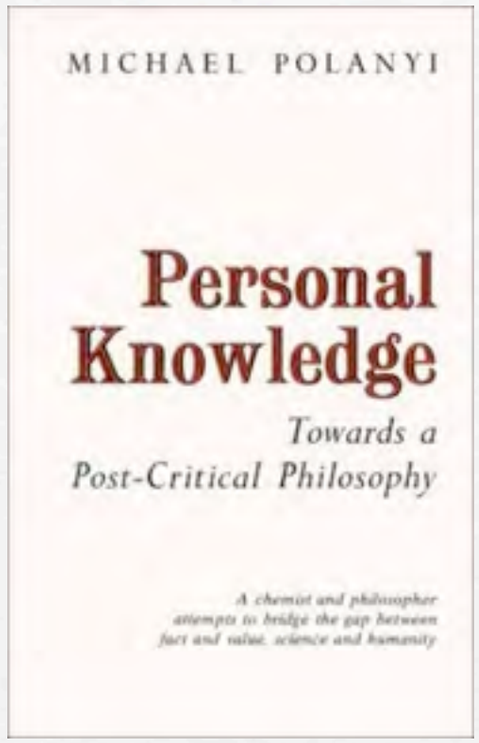
✓ Expert judgment is opposed to: statistical judgment, model-based judgment, theorems, etc.

✓ Expert judgment is based on knowledge of a specific kind, called “personal knowledge”, or “tacit knowledge”.

Michael Polanyi

(1891 - 1976)





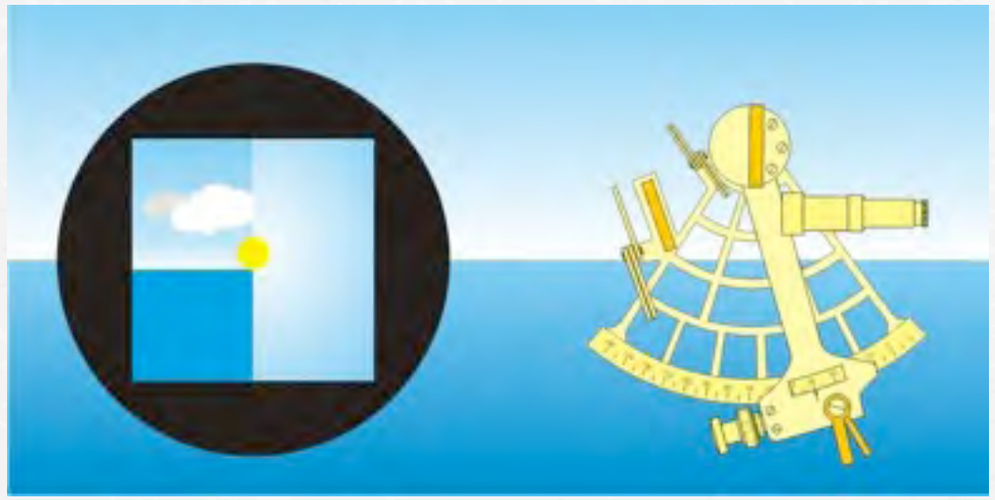
✓ Polanyi was a chemist, physicist, economist and philosopher.

✓ Realization: the knowledge we apply everyday at all levels of our society does not derive from a fully articulated source as the scientific textbooks would make it seem.

✓ Expertise, from engineering to medicine, even to more theoretical fields of research, is largely based on what Polanyi calls “tacit knowledge”.

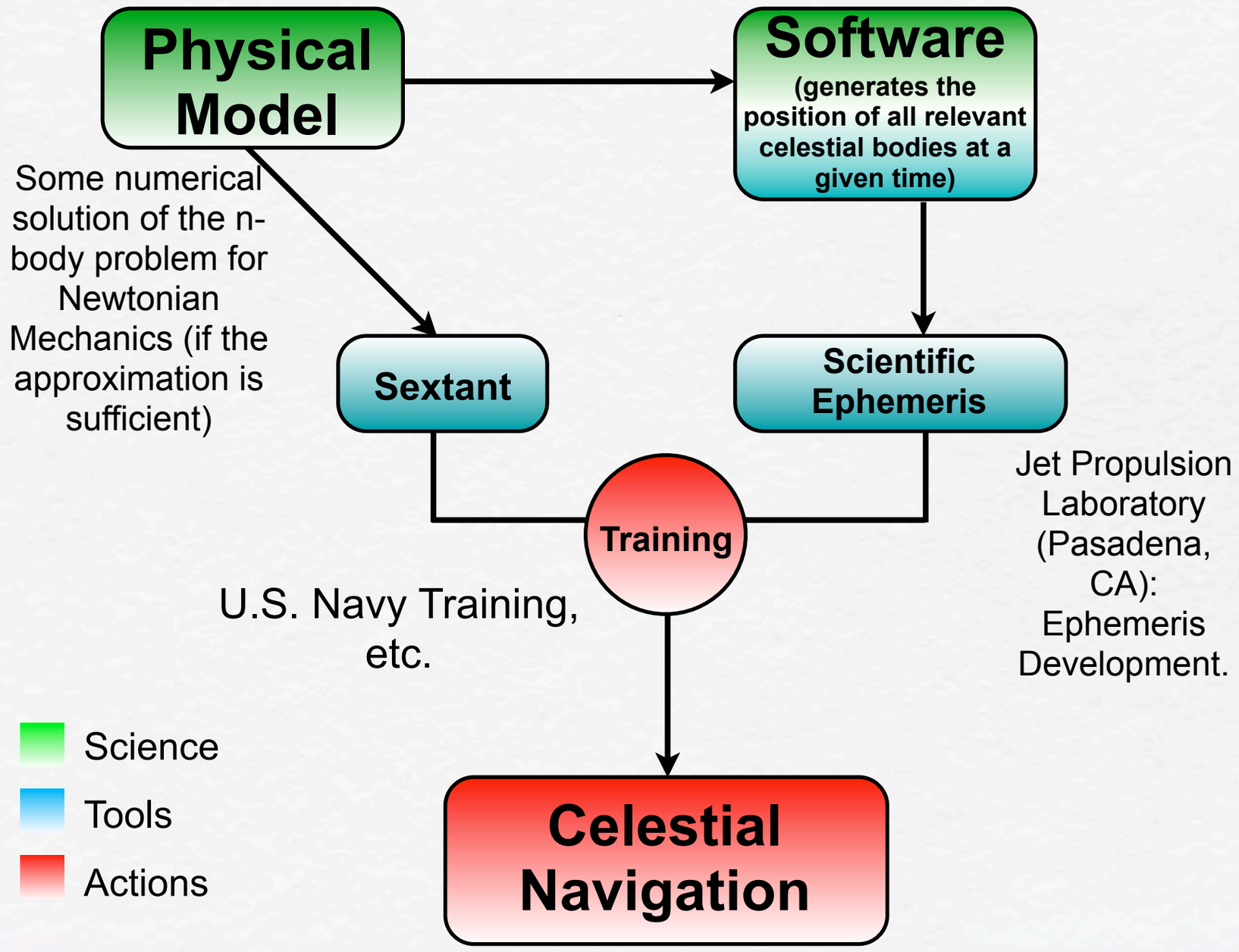
✓ *Tacit* is opposed to *explicit*.

An example: celestial navigation



QUESTION: What type of information related to a scientific or technical problem, can or cannot be explicitly rendered?

This is a model for predicting the position of a vessel with respect to a system of coordinates and fixed reference points.



CONTRAST BETWEEN A FULLY (OR ALMOST SO) EXPLICIT MODEL AND A MODEL WHERE TACIT KNOWLEDGE IS INVOLVED

explicit knowledge	tacit knowledge

EXAMPLE 1: PATIENT'S REACTION TO A CERTAIN DRUG

1) Medical statistical data 2) Chemical models of a drug's reaction with other drugs or chemical substances 3) Biological models of the working and effects of the drug	1) Treating doctor's past experience 2) Patient's past medical history 3) Doctor's knowledge of salient conditions that could affect the patient's reaction to the drug

EXAMPLE 2: NUCLEAR PLANT SAFETY ASSESSMENT

1) Physical models of the reactions and processes involved in a nuclear plant 2) Statistical data on safety of components and designs 3) Record of local conditions and context	1) Experience with the design of nuclear plants 2) Knowledge of the territory where the plant is to be built 3) Knowledge of plant management and security procedures

Characteristics of tacit knowledge

✓ Loosely speaking, tacit knowledge is a type of knowledge that builds up in our minds, in the background of our conscious learning.

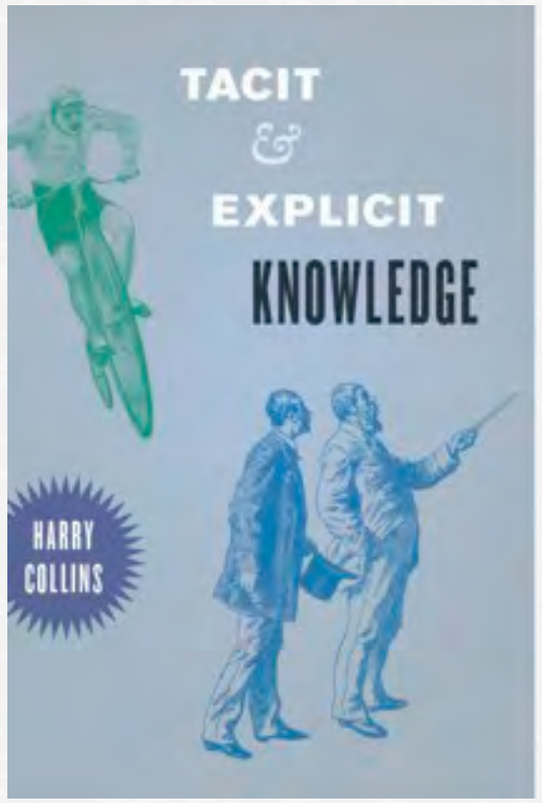
✓ It is *not* necessarily *know-how* knowledge, it can be theoretical knowledge as well, that is knowledge of facts, implications, etc.

✓ Tacit knowledge is
- ✓ Hard to transmit
- ✓ Hard to apply
- ✓ Hard to aggregate
- ✓ Highly subject to failures

✓ On the positive side, tacit knowledge is flexible; it can be applied to different contexts, starting from different settings, eliminating or adding initial conditions and so on.

Harry Collins

(1943 - *Cardiff University*)



✓ Harry Collins, and several others in the field of social studies of science, have shown that the idea of tacit knowledge is far more widespread than it is at times thought.

✓ In *Rethinking Expertise*, Collins takes up the task of developing a new approach to expertise, he calls it ‘relational approach’.

...FROM THE GENERAL PICTURE TO EPISTEMOLOGY

✓ We can run some calculations, and find the mathematical solution to a problem, but how can we believe the solution that the expert gives us? This is the problem of **testimony**. (WEEK 2)

✓ When we are thinking and acquiring knowledge in isolation we need only be worried about being deceived by evil demons, but in a social setting we can be deceived by the so-called experts as well. This is the problem of **trust**. (WEEK 3)

✓ When we are asked to rely on expert judgment, whose judgment should we select? Who are the experts and how should we discriminate between experts and laymen? This is the problem of **selecting experts**. (WEEK 4)

✓ When the judgment we are relying on is our own, the epistemology we refer to is often the one of the "analytical tradition". But viewing knowledge from the point of view of the many *may* imply that we need to change our theoretical framework as well. This is one of the problems of **social epistemology**. (WEEK 5)

✓Finally there is a difference, in practice, between sitting at a table and using our own judgment in order to resolve a problem, and using expert judgment(s) to do the same task. What does talk about expert judgment changes, in practice, for our problem-solving practices? This is the problem of the **application** of expert judgment. (WEEK 6)

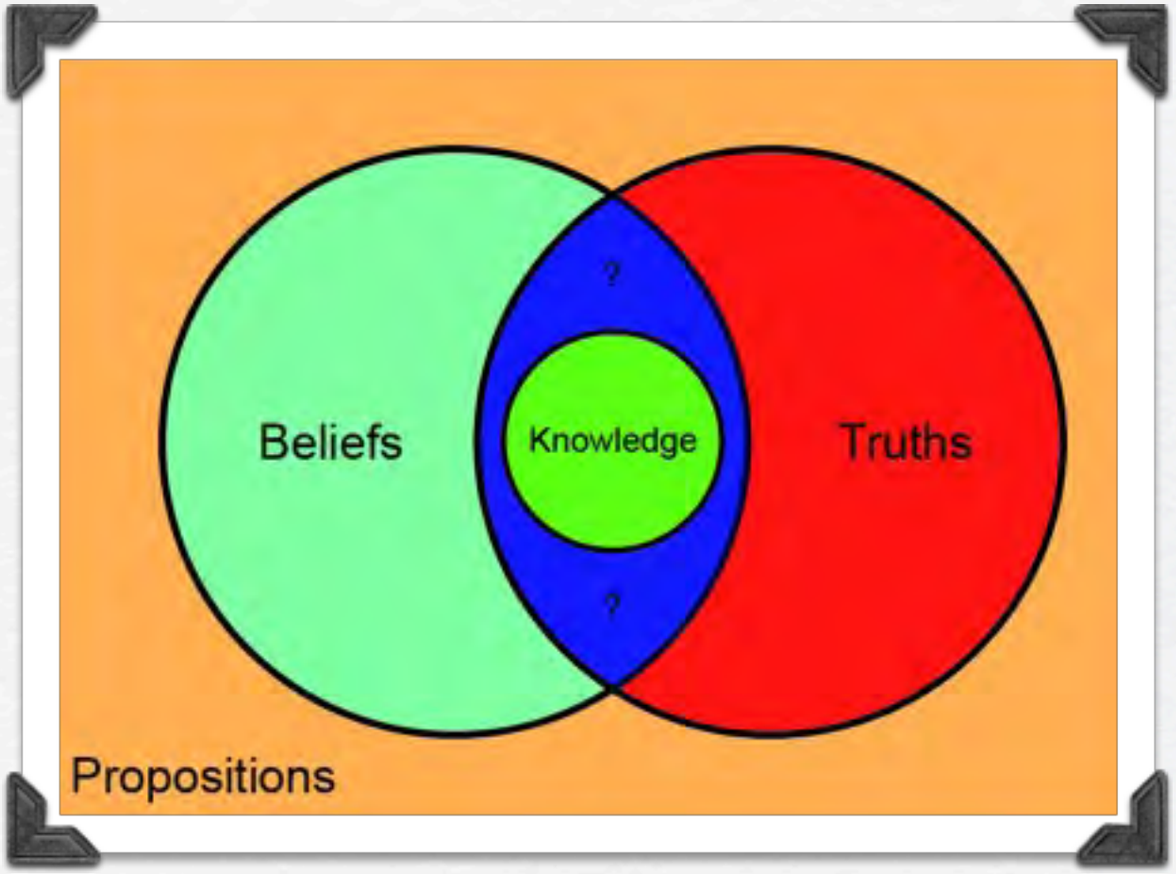
Epistemology, an essential intro:

The JTB account of Knowledge

✓ Propositional Attitudes (e.g.: ‘Believe that__’ = *B*(P); ‘Know that__’ = *K*(P).)

✓ What are the necessary and sufficient conditions for proposition *P* to be regarded as a member of the class of “known propositions”?

✓ *P* is known *iff* ‘*P* is believed by person *A*’ & ‘*P* is true’ & ‘*A* is justified* in believing *P*’.



* What is justification? - Are there alternatives? (e.g. reliability, rationality, etc.)

Evidence vs. Reliability

✓ What is it that makes a belief justified?

✓ Possession of evidence: Evidentialism

✓ Dependence on a reliable process or mechanism: Reliabilism

✓ EVIDENTIALISM: evidence is something that one possesses, at a certain time in her experiential life; moreover, evidence can be of different types (cf. Coady, in the readings next week): it can come from perception, introspection, memory, etc.

✓ RELIABILISM: a process through which we acquire knowledge can be reliable, that it it can yield (or *tend to* yield) true beliefs, or unreliable. As for evidentialism, there are different ways of checking whether a certain process is reliable or not. Reliabilism splits into different stances on the issues of whether processes can be analyzed *only* externally (naturalized epistemology?), or whether there is a mix of internal and external verification of knowledge processes.

Internalism vs. Externalism

✓ How are the facts that determine whether we are justified or not in believing a certain proposition *P* known?

✓ INTERNALISM: 1) the facts that make a belief justified are always accessible by pure reflection 2) the facts that make a belief justified are always mental states.

✓ EXTERNALISM: there may be cases in which the reliability of a certain process through which I have obtained knowledge cannot be checked by reflection only (e.g. knowledge of the process itself, its past performance, its functioning, etc.)

✓ EXAMPLES: a-priori reasoning vs. movement perception

W1 - ASSIGNMENTS 1 - Coady

- What is Hume's Reductionist Thesis, according to Coady?

- What are the terms of the two-horn dilemma, which Coady highlights with respect to Hume's Reductionist Thesis?

- In replying to one of the possible rebuttals of his criticism of Hume's thesis, Coady claims that one can interpret Hume's words "kind of report" as indicating either the "kind of speaker" the report comes from, or the "kind of content" (see p. 151, right-hand column). Why is the former interpretation still problematic, for Hume's Reductionist Thesis? Why does Coady argue that we cannot define testimony on the concept of 'expertise'?

- Describe the Martian world that Coady hypothesizes. Why, in such a world, could there be no assessment of the relation between a report and its real-world occurrence?

- To reach his conclusions Coady formulates Hume's thesis and then provides a number of possible interpretations of it, showing how each runs into problems. Can you draw in a tree-like structure the various arguments and passages Coady goes through in his paper?

- What are Coady's conclusions? That is, what is the thesis that, in the end, Coady is trying to support?

W1 - ASSIGNMENTS II - Pritchard

- In Pritchard's mind, there are two antithetic positions in current epistemology of testimony, which he calls Scylla and Charybdis. Can you outline what the essential claims made by the two positions are?

- After outlining the core of the two positions, Pritchard goes on claiming that both sides of the antithesis (both positions) run into different but equally counterintuitive grounds. What are the intuitions that would make us reject either position, in their simple formulation, because highly controversial?

- In order to get out of the choice between two equally undesirable theories, Pritchard reformulates both of the initial and antithetic theses. What is it necessary to give up, in Pritchard's mind, in order to get to two "plausible renderings" of the Reductionist and the Credulist positions?