

Research and Pedagogy:

A history of quantum physics and its early textbooks

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Thomas S. Kuhn:

from *The Structure of Scientific
Revolutions to Black-Body Theory and the
Quantum Discontinuity*



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Textbooks in Kuhn's philosophy (1)

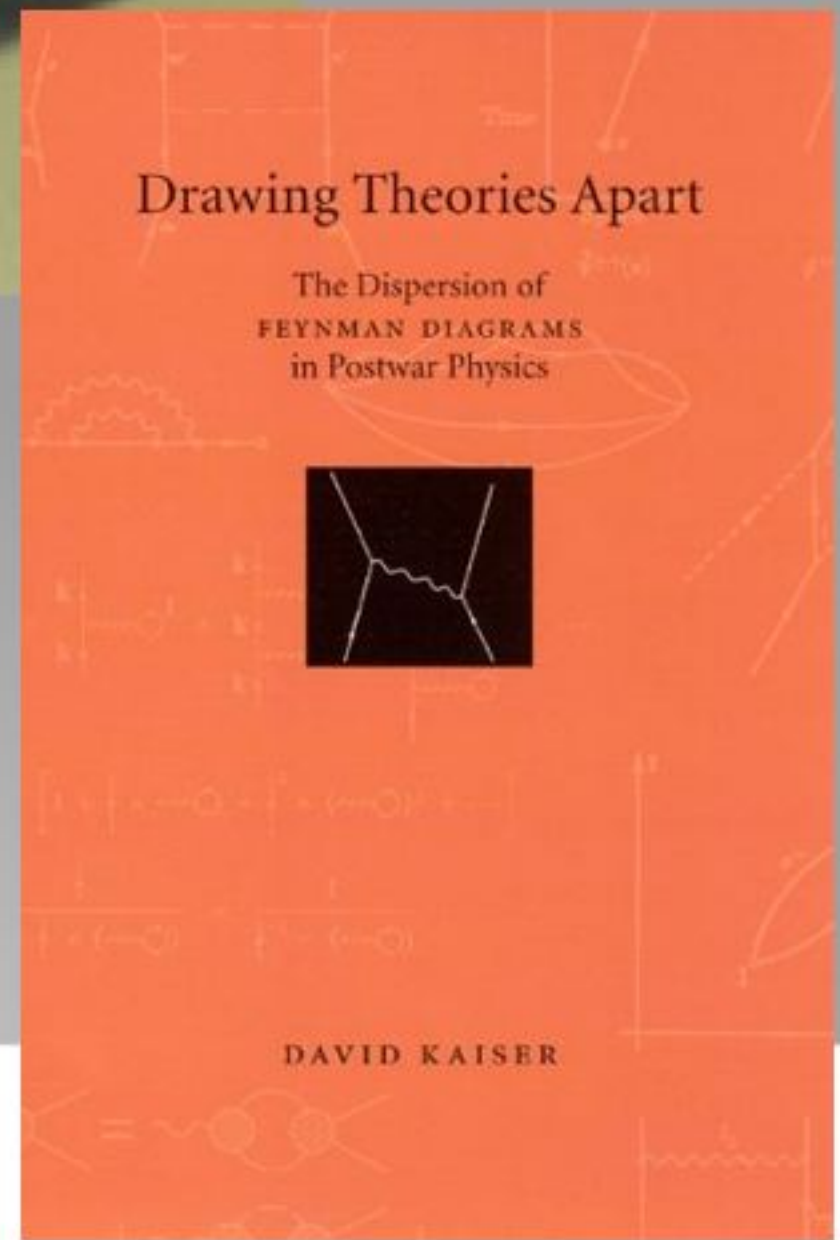
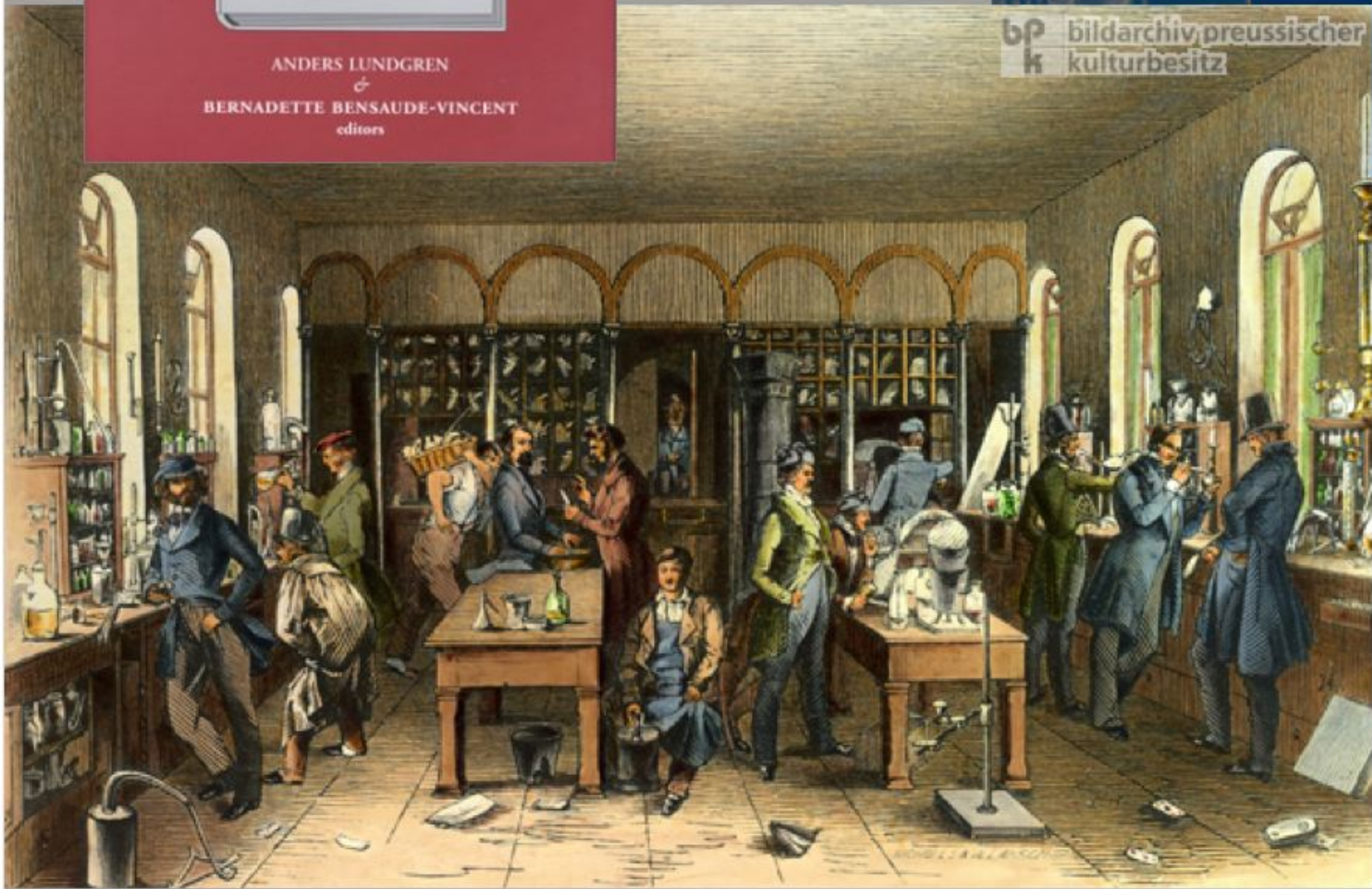
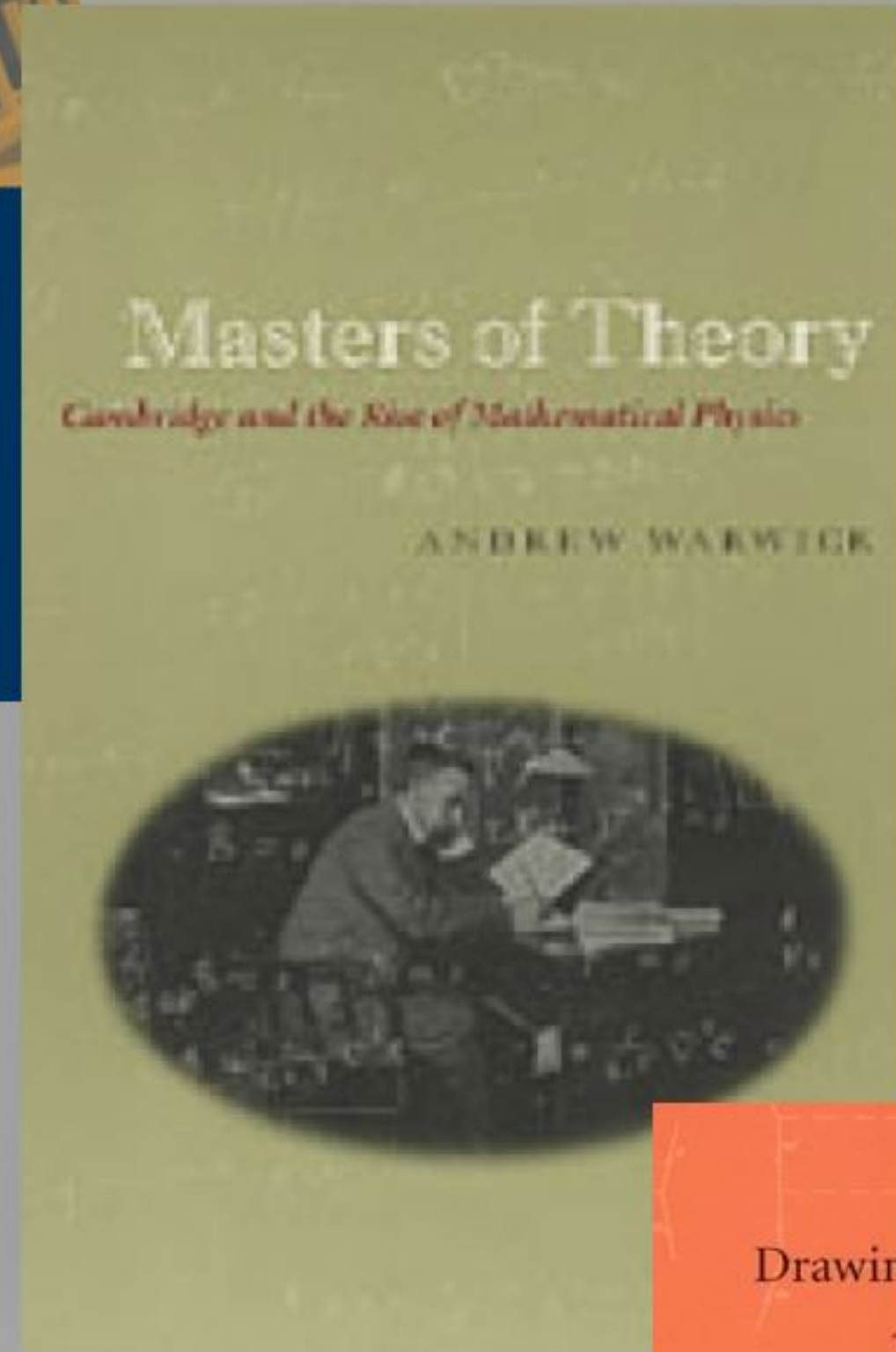
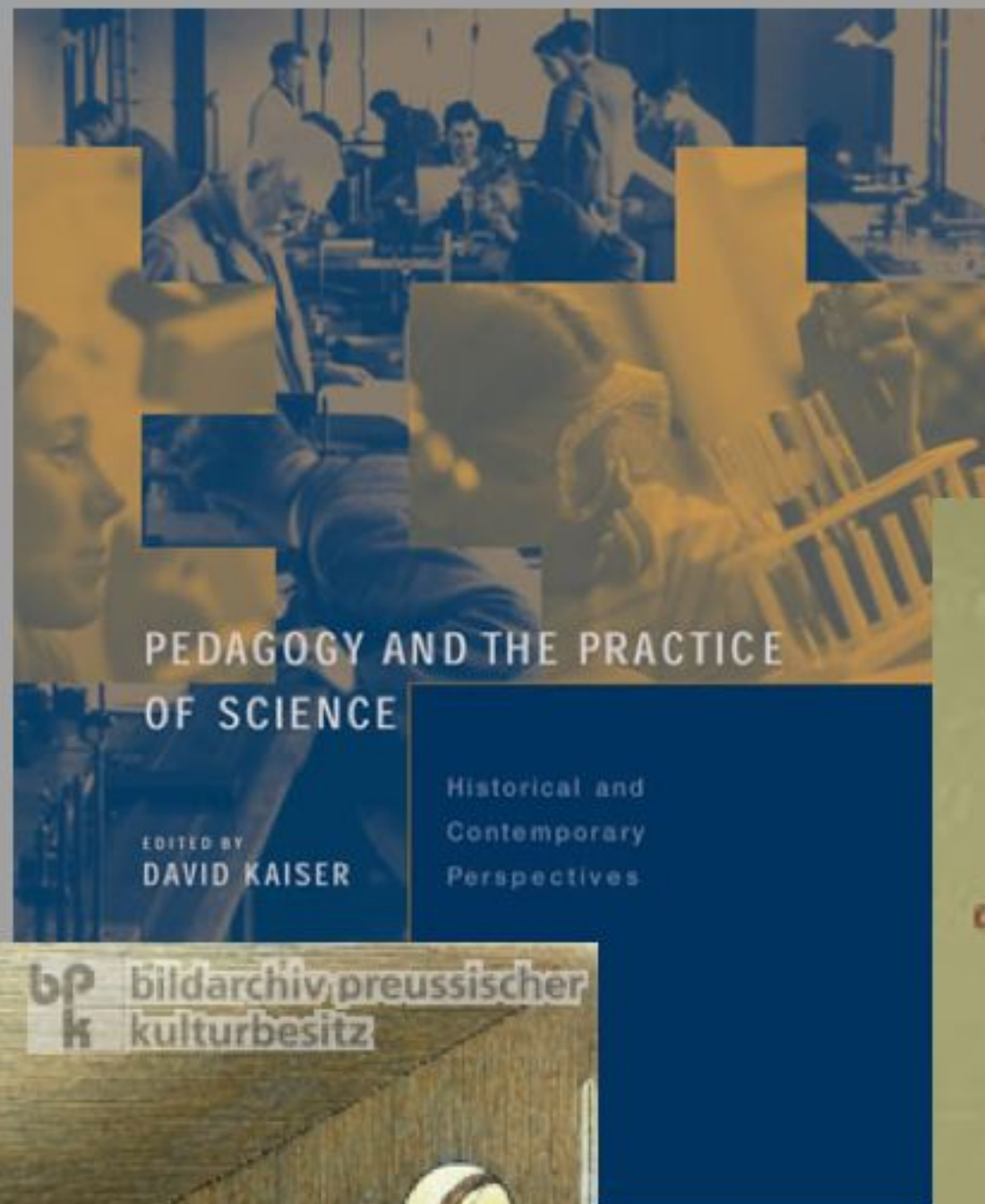
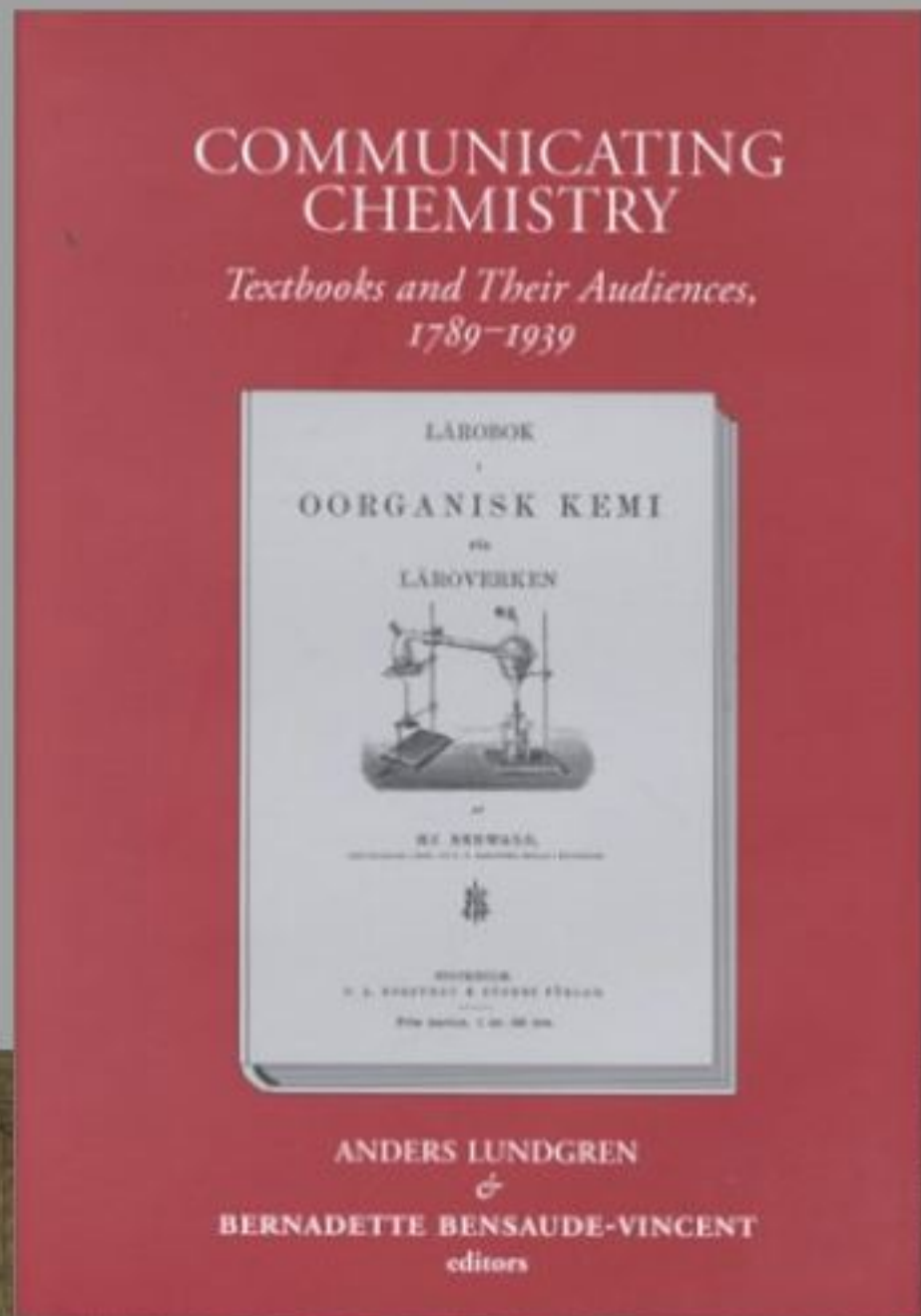
- "produced only in the aftermath of a scientific revolution".
- textbooks "address themselves to an already articulated body of problems, data, and theory".

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Textbooks in Kuhn's philosophy (2)

"the various textbooks that the student does encounter display different subject matters, rather than, as in many of the social sciences, exemplifying different approaches to a single problem field. Even books that compete for adoption in a single course differ mainly in level and in pedagogic detail, not in substance or conceptual structure. Last, but most important of all, is the characteristic technique of textbook presentation, except in their occasional introductions, science textbooks do not describe the sorts of problems that the professional may be asked to solve and the variety of techniques available for their solution".

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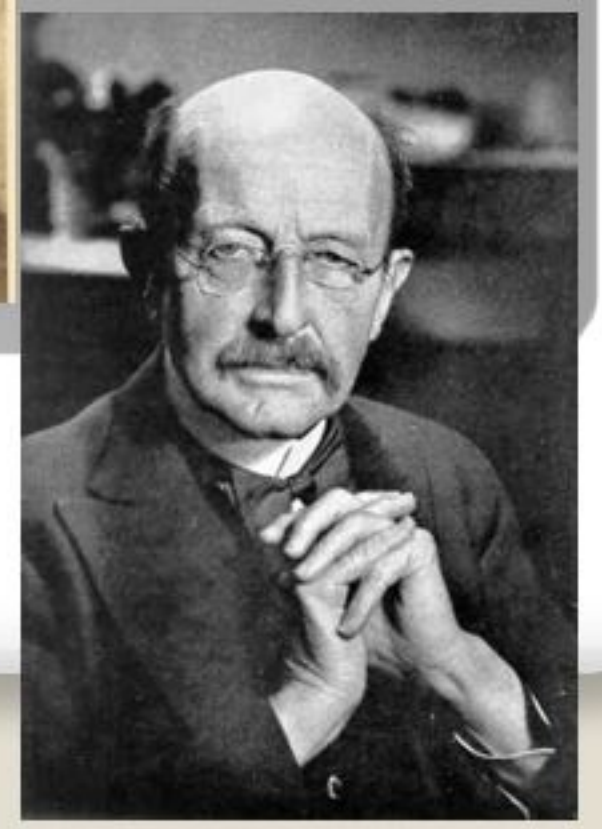
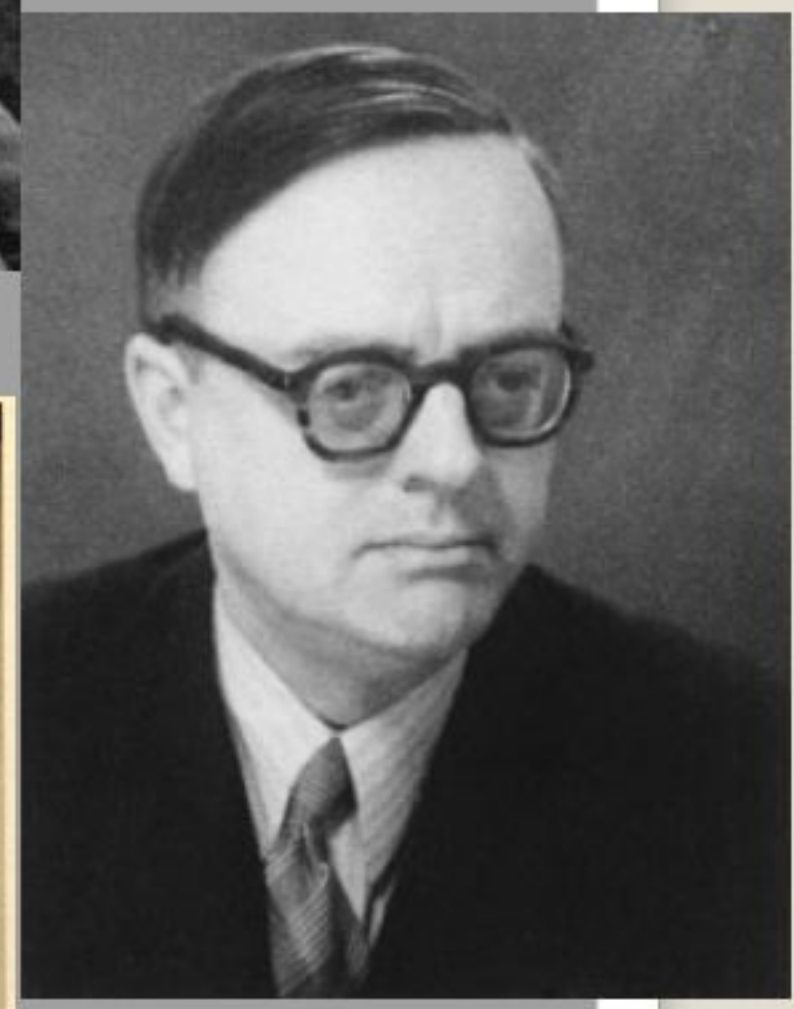


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- Historical Epistemology:
 - a framework from which to re-evaluate the role of textbooks
 - How does knowledge actually come about: textbooks as active actors in “theories in flux”
- Research and Pedagogy may share the same epistemological fabric
- Exploring the borders

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- Paul Drude
- Otto Sackur
- Max Planck
- Arnold Sommerfeld
- Max Born
- Fritz Reiche
- John van Vleck
- George Birtwistle
- Ralph Fowler
- Paul Dirac
- George Gamow
- Pascual Jordan

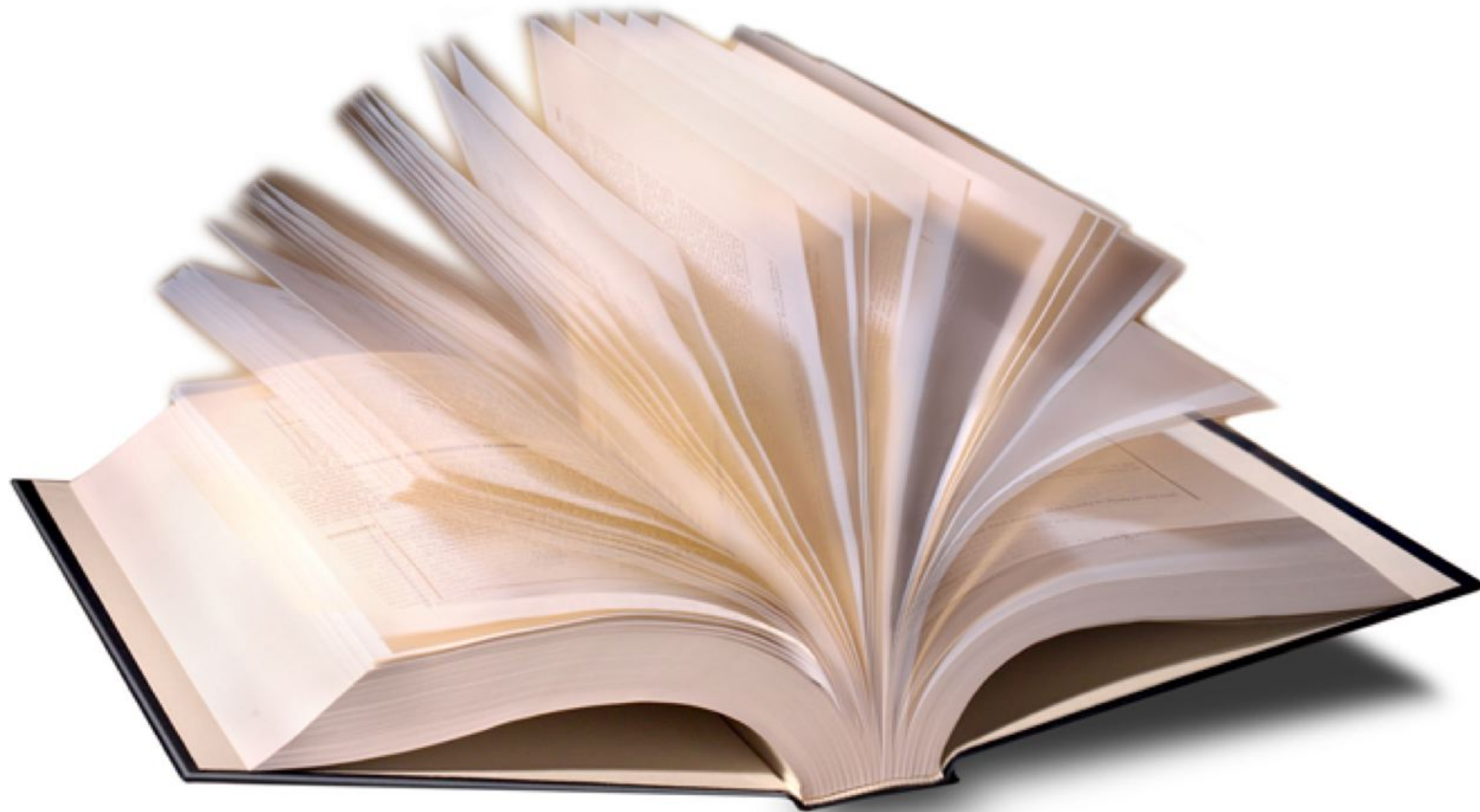


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Some (interesting?) ideas so far

- ✓ Research agendas
- ✓ Pedagogical agendas
- ✓ Theory in flux vs established science
- ✓ The broad notion of “popularisation”
- ✓ The diversity of “actors”
- ✓ The local contexts
- ✓ Exploring the borders: the migration of the quantum
- ✓ “Revolution” is not always a helpful category

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