Practical solutions, ‘quick fixes’ and rigorous soil-water science

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- Catchments, largest spatial scale
- Plot and paddock system studies
- Micro/mesocosm/ lysimeter studies
- Molecule, soil ped and batch scale biochemistry

- Ho forming, empirical, uncertainty, complexity, aspire for finest temporal scale
- Losing ‘control’, yet more ‘relevant’
- Helps to form conceptual models
- Ho driven, reductionism mechanistic, high certainty, low applicability

After *Haygarth* et al. *(2005) Sci. Tot. Env. 344, 5-14*

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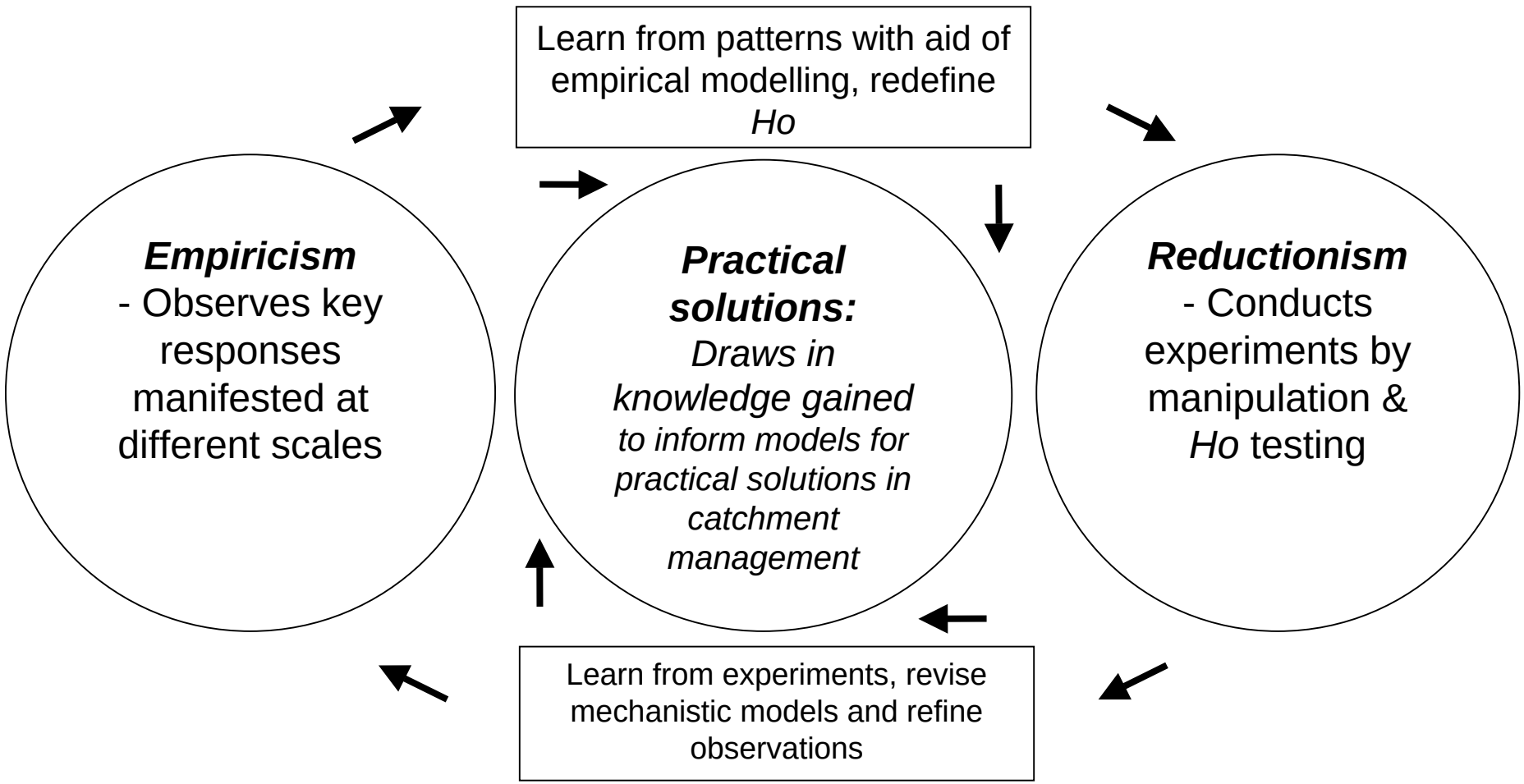

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- Strong strategic and applied pressures pulling on the direction of our soil-water science, often needing rapid practical solutions and, where evidence is absent, ‘quick fixes’
- The *most sustainable* (and thus the most practical) solutions of today arise from the **long-term investment** in more basic science of the past
- If the **balance between the basic science and the more strategic solutions is disturbed, the value of the practical solution may become fragile, if conducted in absence of wider evidence**
- Where a practical solution is required in the absence of current reasonable science evidence, a ‘quick fix’ must be sought, **but parallel investment in the basic underpinning science must also be made**
- Thus, for maximum effectiveness, ‘quick fix’ practical solutions that emerge in the short term will need to (1) **acknowledge uncertainty** in the process and (2) be ***flexible* enough to evolve** as new science evidence as it emerges

In conclusion, I emphasise the importance of science, scientific evidence and associated rigour in helping to find practical solutions in catchment management