

Software Engineering Controlled Experiment Life Cycle

Concepts

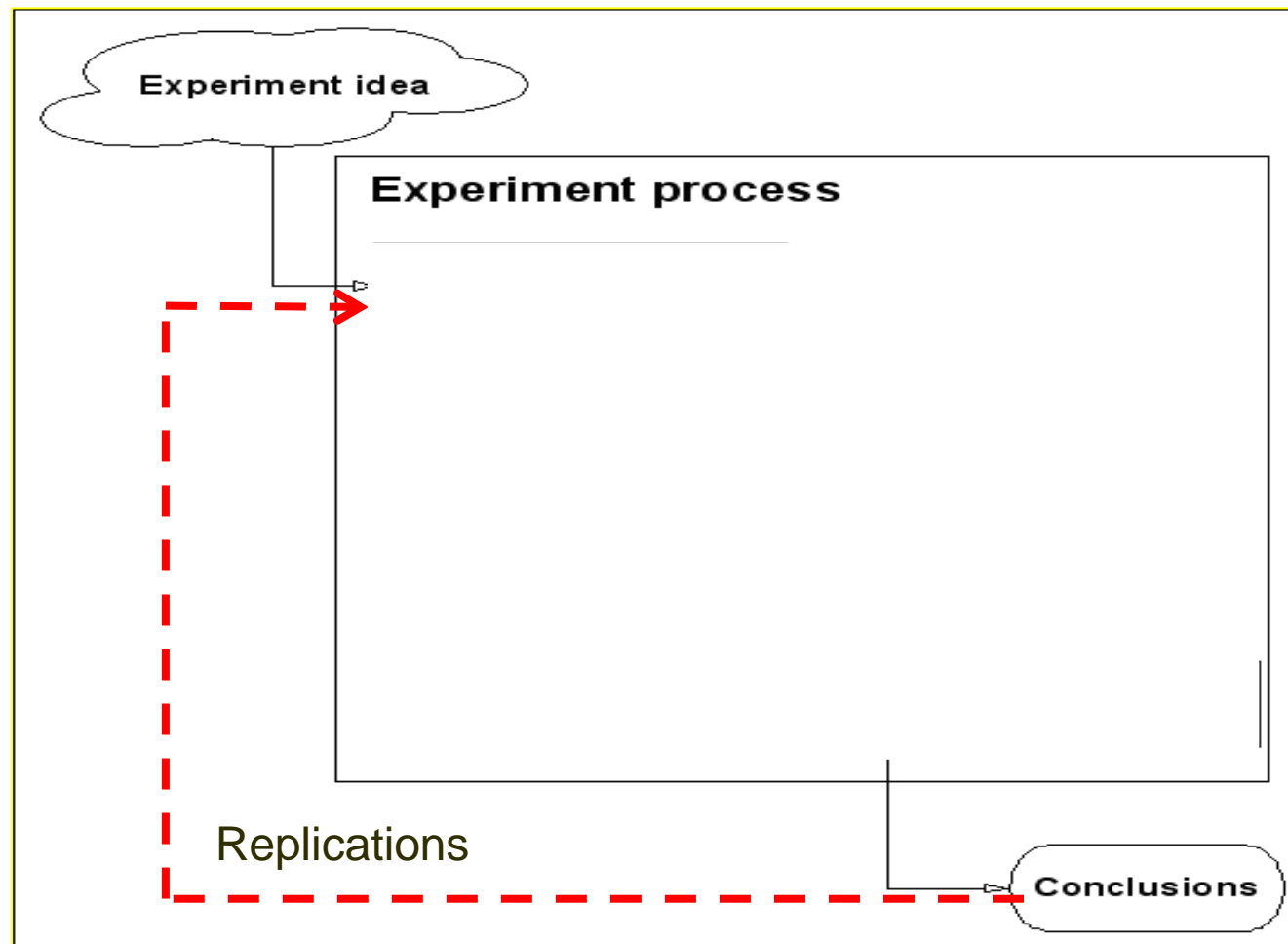
Credits

Experimentation in Software Engineering: An Introduction.

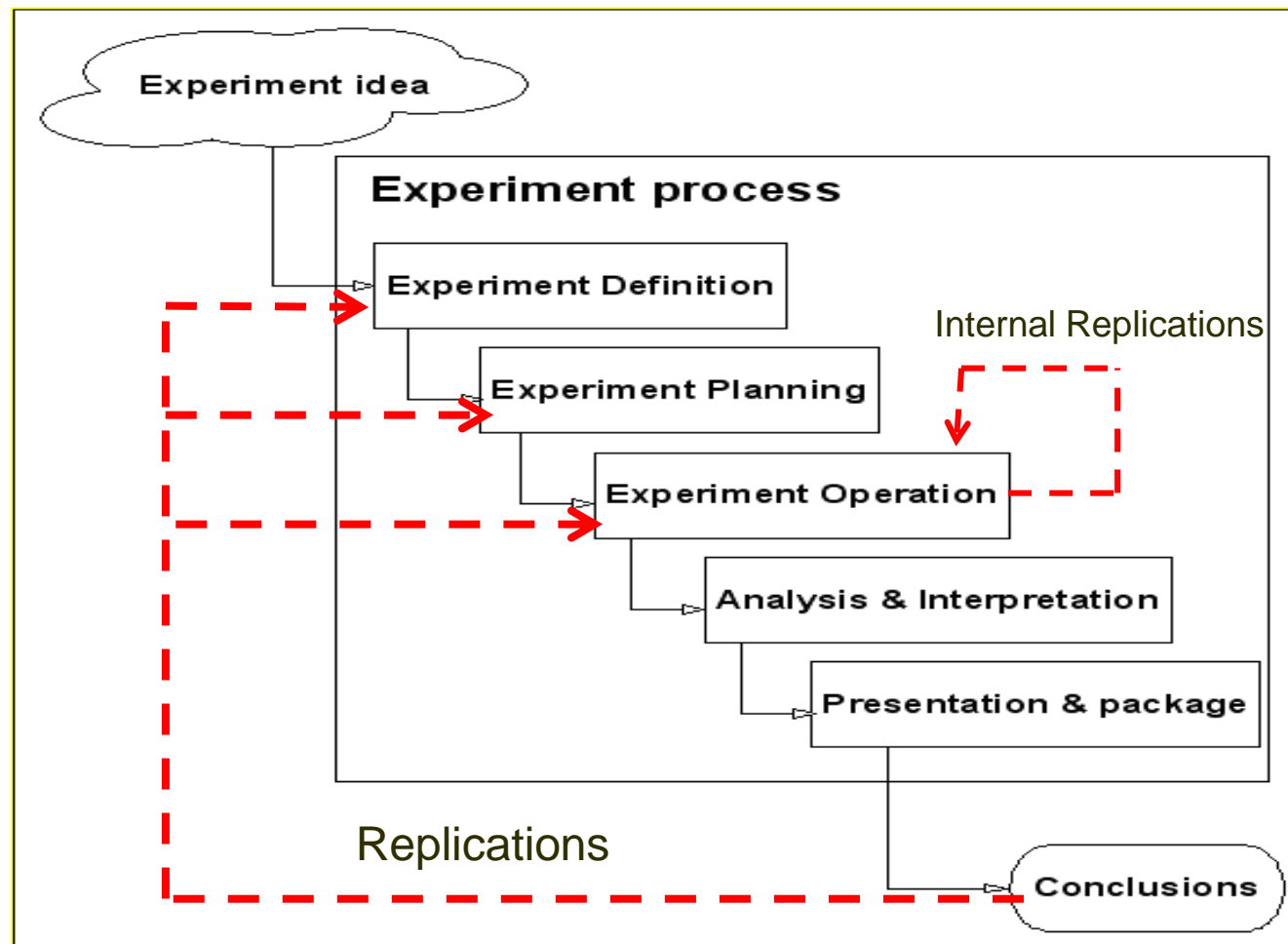
by Claes Wohlin, Per Runeson, Martin Host, Magnus C. Ohlsson, Bjorn Regnell, and Anders Wesslén

Springer-Verlag, 2005 (Formerly printed by Kluwer Academic Press, 2000).

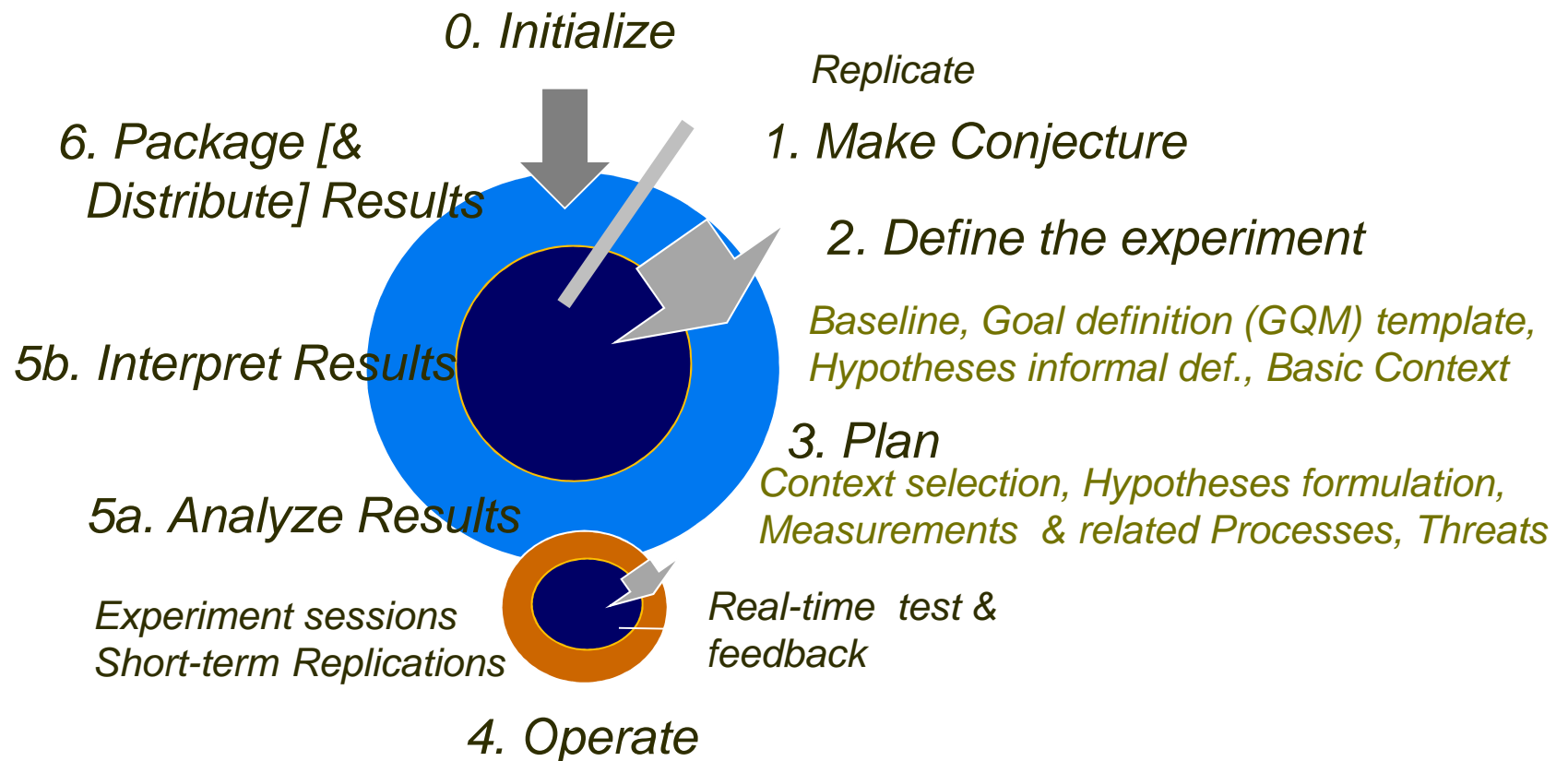
The Experiment Process



The Experiment Process



The Cyclic Learning Process Applied to Experimentation



The Cyclic Learning Process

Baseline : It is what we already know. (Be sure to know what you should already know.)

0. Initialize the improvement cycle.

1. Make Conjecture about what we want to know.

2. Define the Learning Approach (EXPERIMENT DEFINITION) .

3. Define the Process, including measurement points. (EXPERIMENT PLAN). Define Hypotheses . Define quantitative goals, and plan qualitative matching. Identify Validity Threats.

4. Enact the process, take the planned measures, forward advices and new experiences, give fast feedback for process mistakes. (EXPERIMENT OPERATION)

5a. Analyze measures, advices and new experiences. (EXPERIMENT RESULTS ANALYSIS).

5b. Test these results versus the current knowledge. (EXPERIMENT INTERPRETATION)

5c. Integrate the new results into the current knowledge, and possibly synthesize knowledge at a higher level

6. Package knowledge [and distribute it organization wide]. Update Baseline.