Selected issues of feedback and motor learning

Andreas Bund
Email: abund@ifs.sport.tu-darmstadt.de

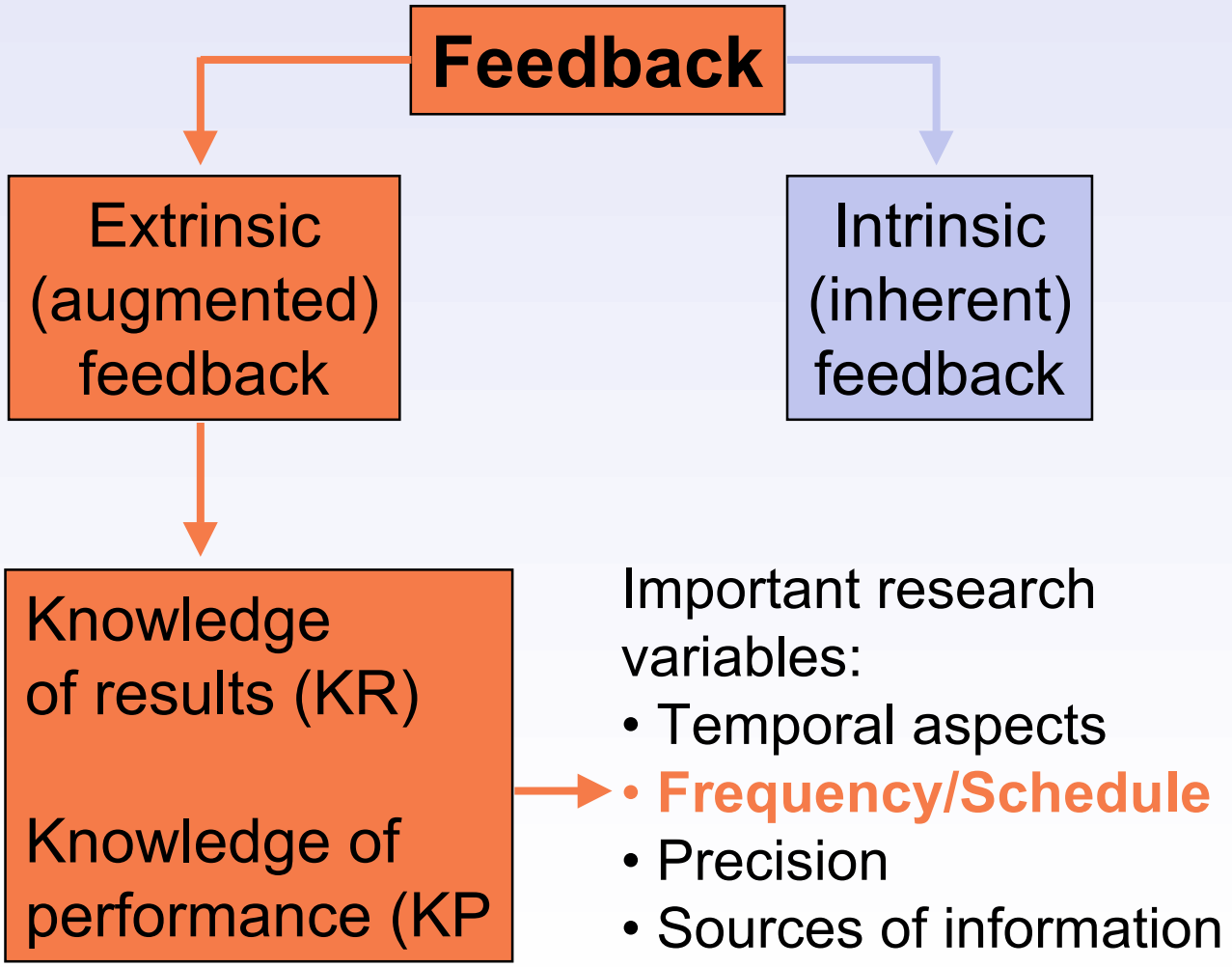
II. Uluslararasi Spor Psikolojisi Sempozyumu
Izmir, 2001

Overview

1. Feedback and motor learning
2. The reversal effect
3. Meta-analysis: Feedback frequency
   - 3.1 Method
   - 3.2 Results
4. Conclusion

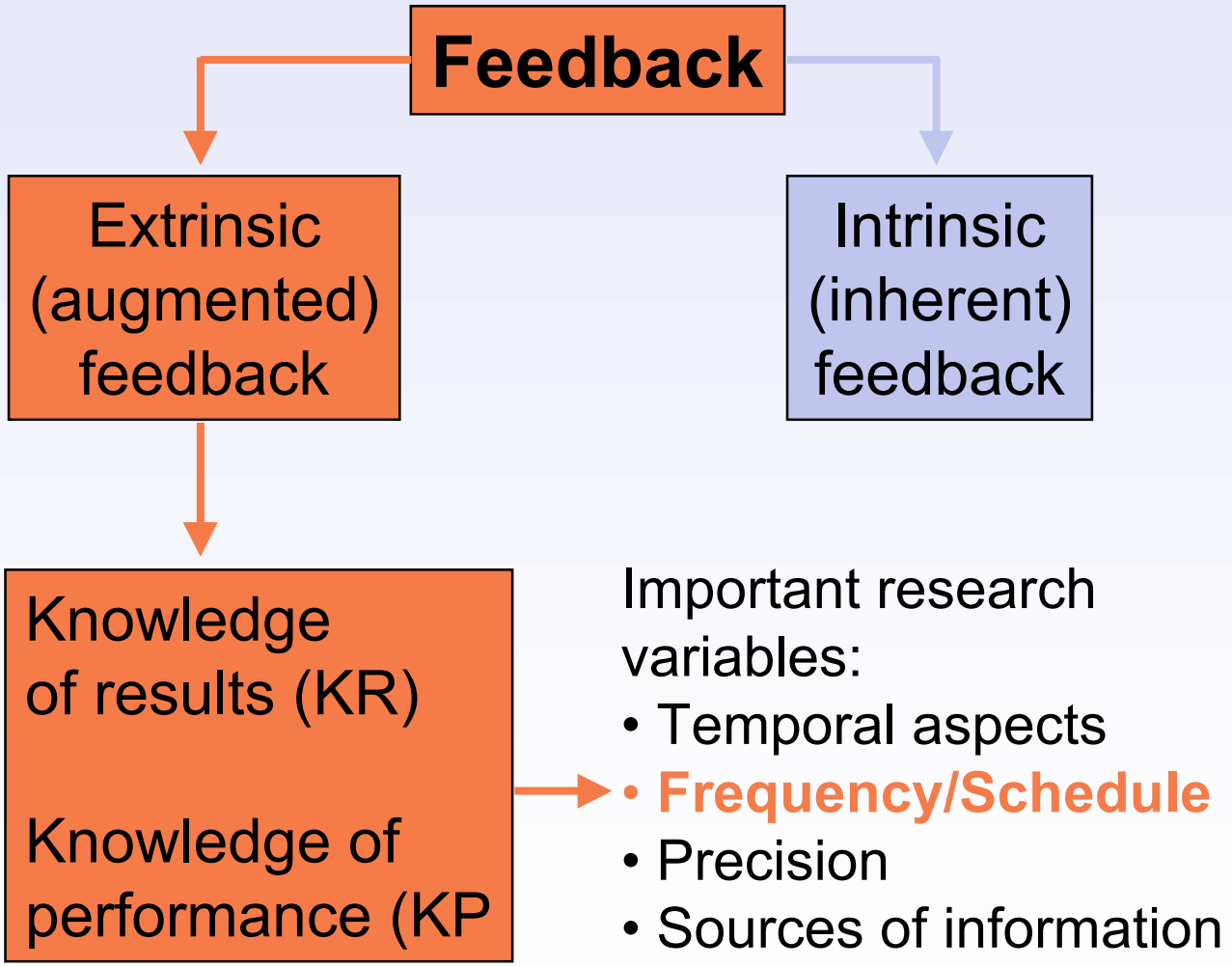
Feedback

Schmidt, 1988, 424

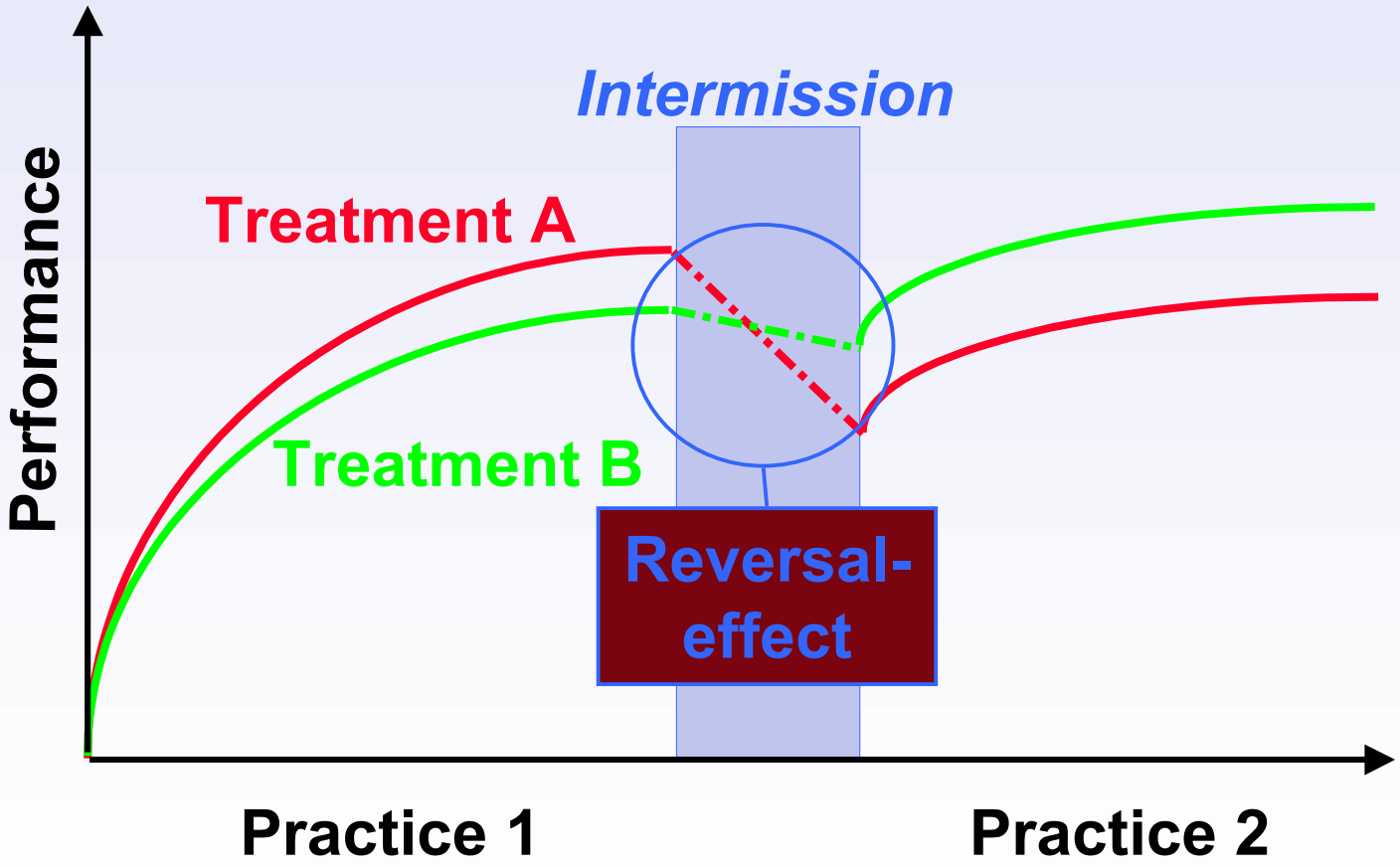


Feedback

Schmidt, 1988, 424



Reversal effect in motor learning

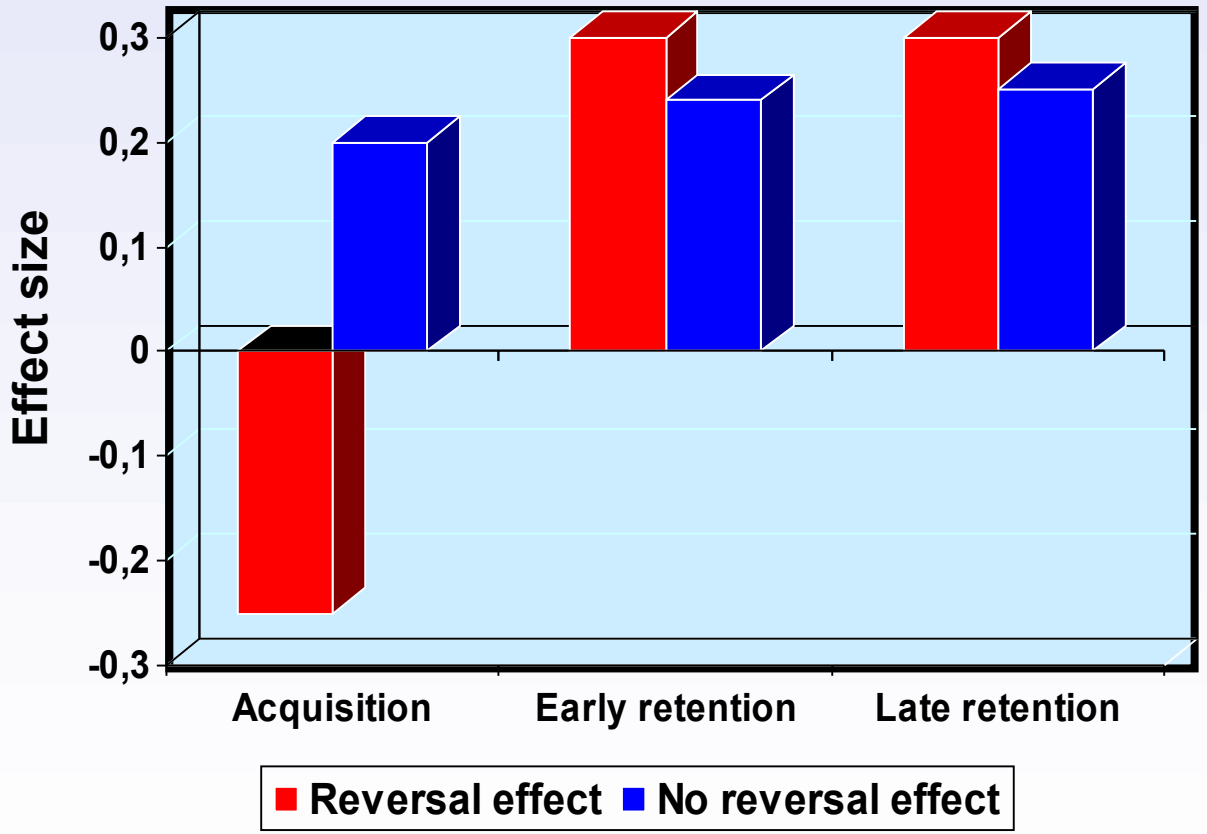


Explaining the reversal effect: The guidance hypothesis

Schmidt, 1991

- Guidance function of extrinsic feedback in the acquisition phase
- Maladaptive short term corrections as an over-reaction
- Negative influence on processing of intrinsic feedback (➜ missing consolidation of a reference of correctness)
- Fusion of extrinsic feedback and learning task

Reversal effect in terms of effect sizes



Meta-analysis and effect size

Definition of meta-analysis

The statistical analysis of a large collection of analysis results from individual studies for the purpose of integrating the findings

(Glass, 1976, 3)

Definition of effect-size

The standardized mean difference between a treatment group and a control group in terms of an outcome variable

(Schwarzer, 1989, 3)

Meta-analysis of feedback frequency

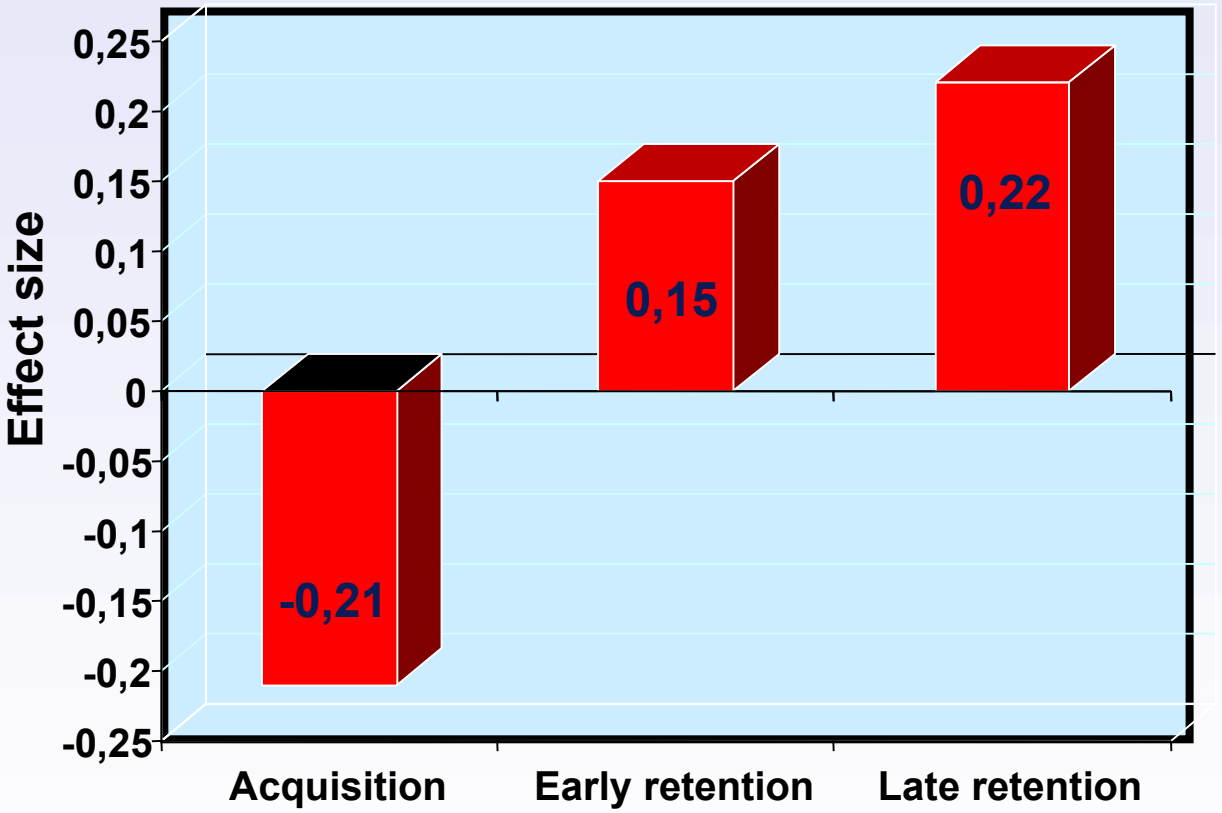
Purpose of the Meta-analysis:

- Exploring the importance and robustness of the reversal effect
- Testing of potential moderator variables

Method:

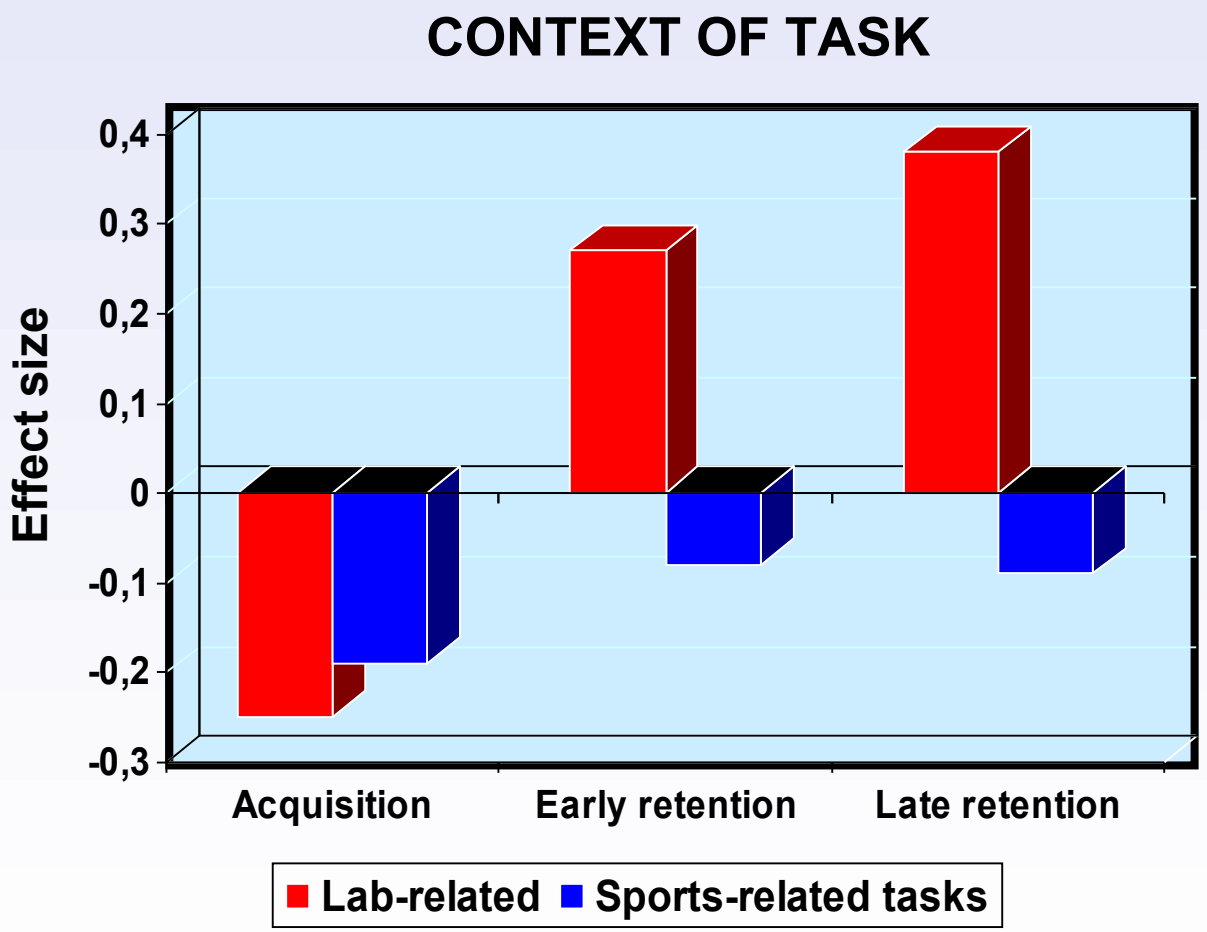
- Sample: 40 studies with 72 effect sizes
- Procedure:
  - ⇒ Identification of relevant studies
  - ⇒ Coding of study characteristics
  - ⇒ Computation of effect sizes
  - ⇒ Data analyses (global and moderators)

Results of the global analysis

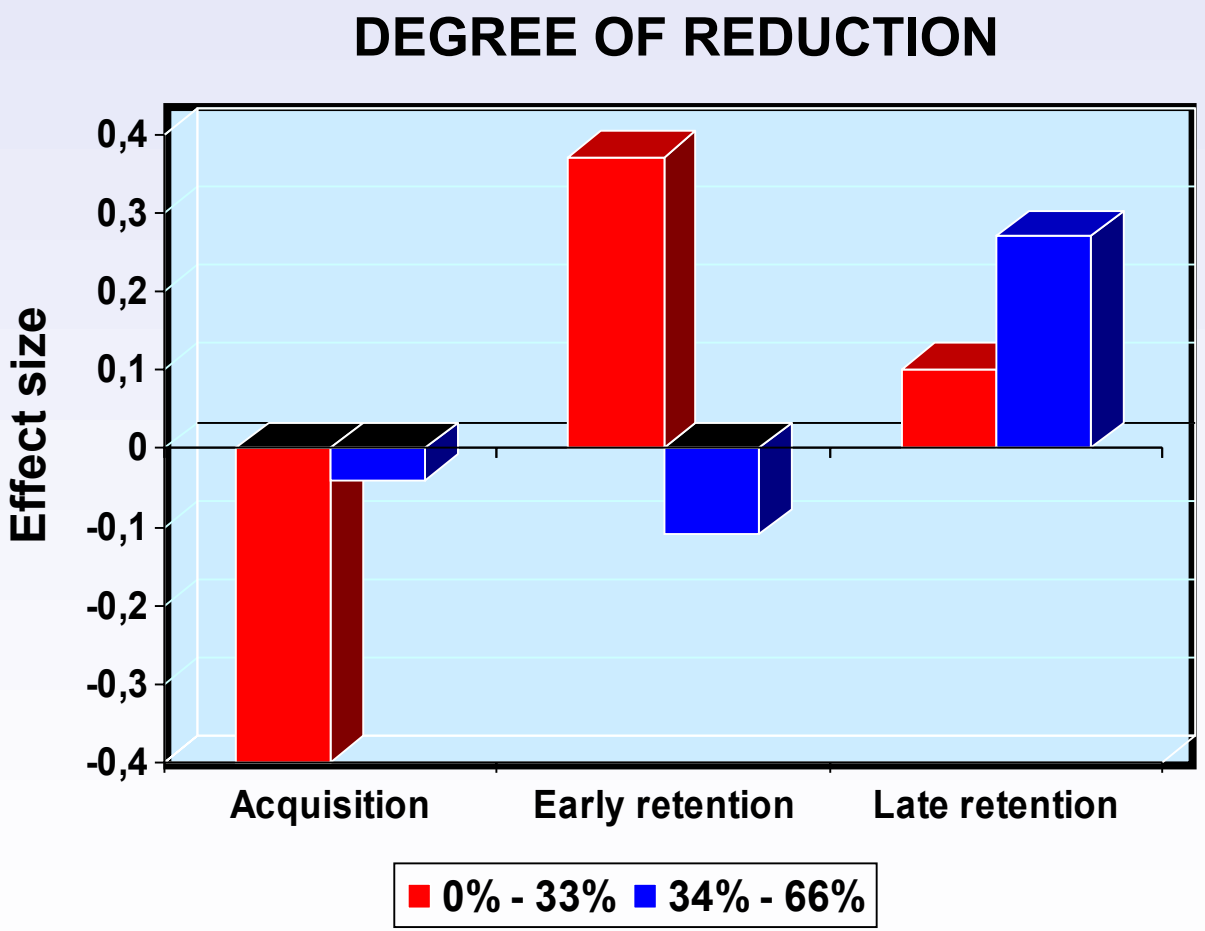


Cohen (1992): 0,20 low effect
0,50 moderate effect
0,80 strong effect

Results of the moderator analyses



Results of the moderator analyses



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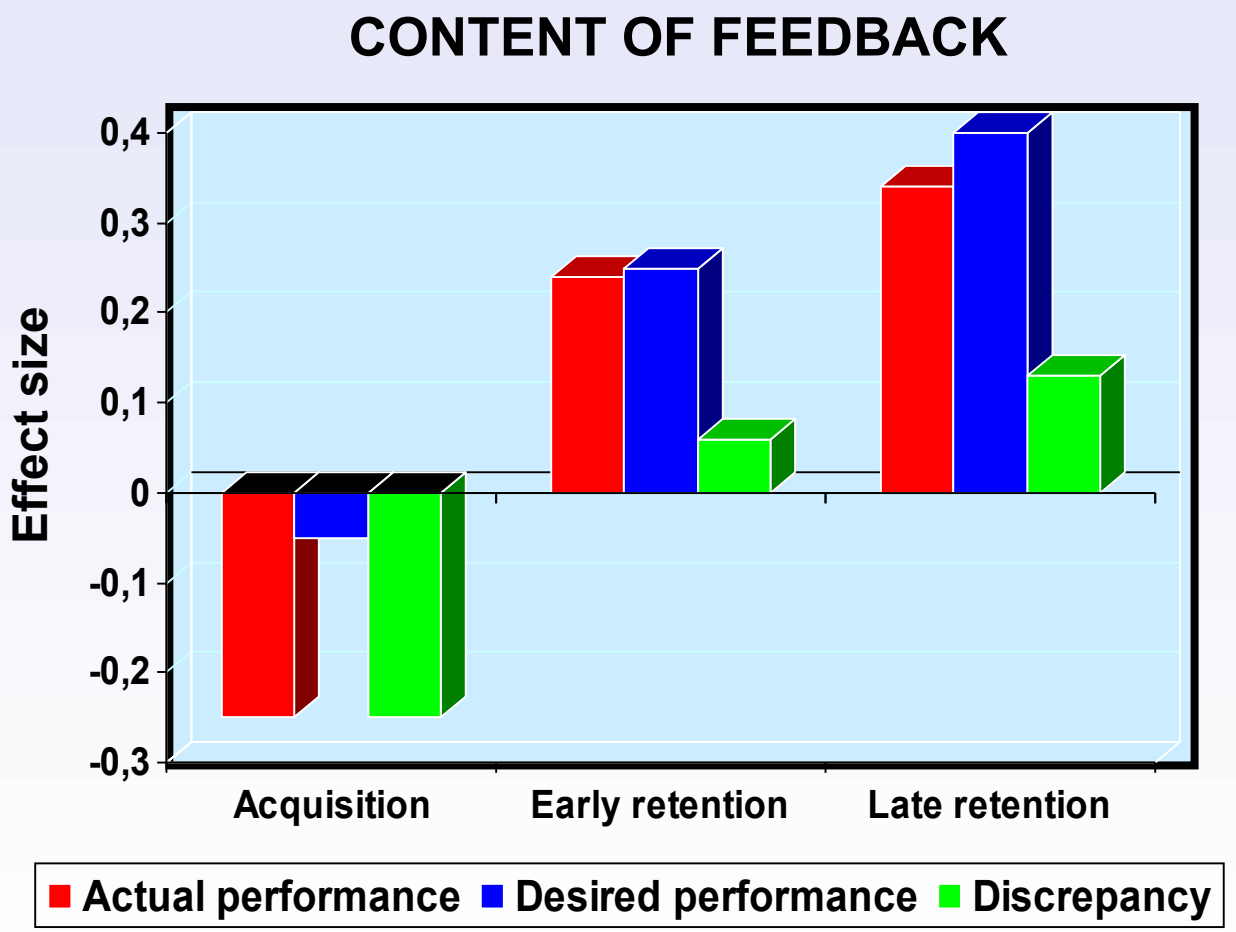

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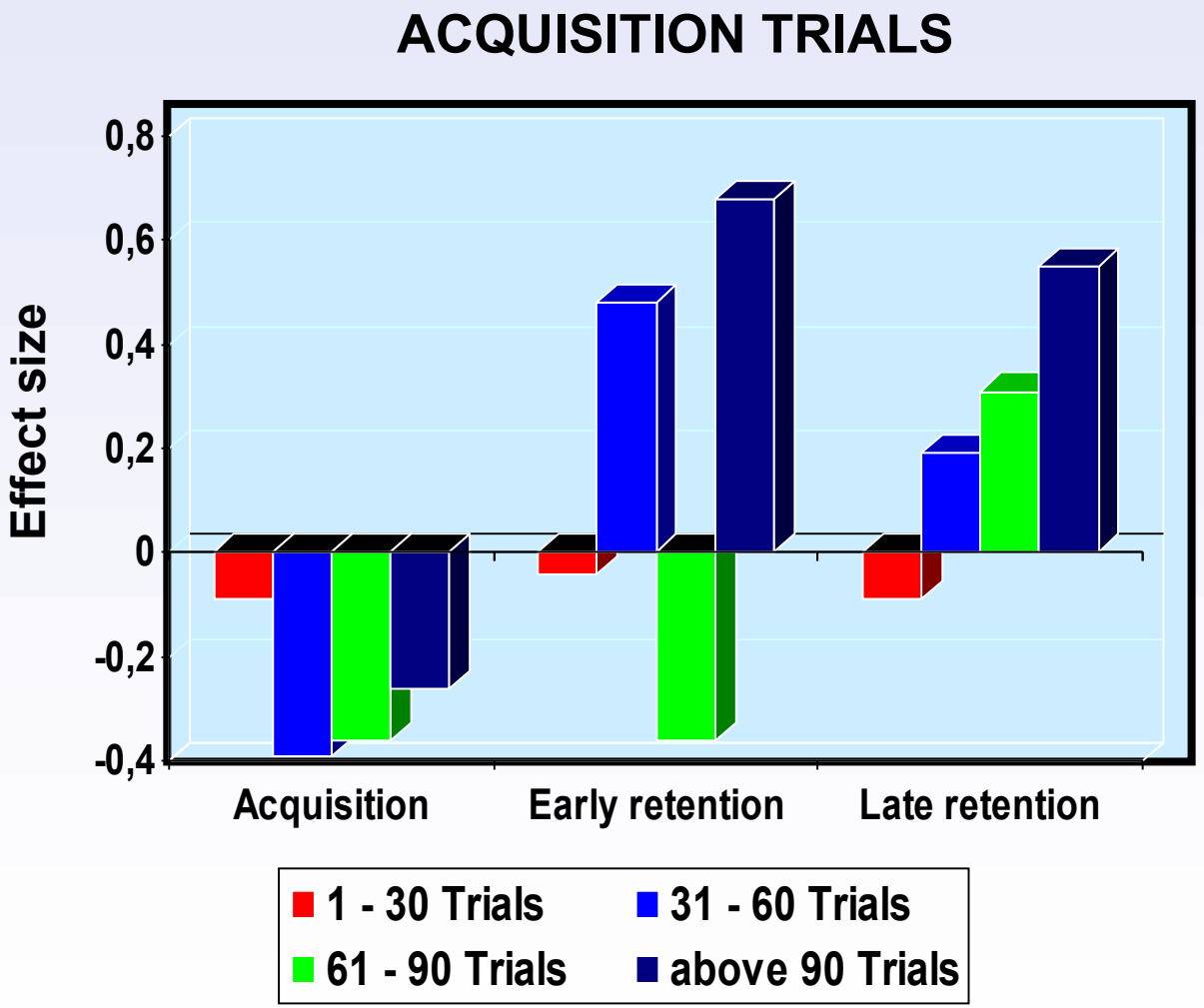

Conclusion

- **Reversal effect:**
  Extremely inconsistent phenomen;
  may be a methodological artefact

- **Moderators:**
  Context of task
  Degree of reduction
  Content of feedback
  Amount of practice (acquisition trials)

Thank you !