# Comparing, Combining, Coordinating -

# Networking strategies for connecting theoretical approaches

## Editorial Introduction for ZDM-issue 39 (2008) 2

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One of the characteristics of the research community in mathematics education (especially the European community) seems to be that we operate with a large diversity of different theories, research paradigms and theoretical frameworks. This diversity has become an important issue to discuss at many conferences and in many publications. Is diversity a problem or a resource? How to deal with it? Although discussed world wide (like at PME 29, see Sriraman / English 2005/06, or Cobb 2007), this ZDM issue treats these questions from a European perspective. It evolved from the common work of most of the authors in the working group 11 of CERME 4 and 5: "Different theoretical perspectives and approaches in research. From teaching problems to research problems" (see Dreyfus et al. 2005, Bosch et al. 2008).

We adopt a typically European perspective when we base our work on the assumption that the variety of different theoretical approaches and perspectives in mathematics education research is a *rich resource* upon which the scientific community should build more consequently (Dreyfus et al. 2006, Bikner-Ahsbahs/Prediger 2006). The editors explicitly reject the isolationism of not connecting theories at all, since it risks to hinder a joint progress in the scientific community (see introductory article).

On the other hand, the editors do not accept the sometimes claimed goal of unifying theories globally. This strategy of unifying theories can be very fruitful for local theories which deal with the same phenomena and equal background theories but use diverging conceptual systems for describing the same phenomena. In such a case, it is helpful to unify the local conceptual frameworks in order to overcome the unnecessary diversity of similar approaches. But beyond these local links, the fact that many other theories operate with different background theories and sometimes even incompatible philosophical bases shows that it is neither possible nor desirable to unify all theories.

In between these two extreme strategies – the laissez faire on the one hand and the unification on the other hand –, there is a wide spectrum of strategies for *connecting theories* which respect the pluralism of autonomous theories without isolationism. This ZDM-issue presents and discusses different *networking strategies for connecting theoretical approaches* as developed in European contexts. In order to avoid a too abstract discussion without concrete basis, eleven articles offer *concrete case studies* for the application of one (or more) networking strategy (like comparing, contrasting, coordinating, combining) on the basis of a concrete work (e.g. on empirical data).

Two framing articles, the introductory article (Prediger, Bikner-Ahsbahs, and Arzarello) and the concluding article (Radford) discuss and systematize aspects of these eleven case studies and make first steps towards a conceptual framework for networking theories.

**Acknowledgement:**
Most of the articles of this volume grew within the vivid climate of CERME conferences, and we thank its organizers for this inspiring environment. Nevertheless, the preparation of the issue was still a challenging enterprise, as ideas had to mature at least to a certain degree, and we are grateful to three persons who helped us most. in this exciting process: Angelika Bikner-Ahsbahs and Tommy Dreyfus, who discussed the ideas, the structure and several articles with us, and Gabriele Kaiser, who did a great job as the accompanying editor-in-chief.

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Marianna Bosch,
Agnès Lenfant,
and
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