

## **UC Merced**

### **Proceedings of the Annual Meeting of the Cognitive Science Society**

#### **Title**

Comparing A Brain-Based Account of Mind with Dual-Processing Theories

#### **Permalink**

<https://escholarship.org/uc/item/3vd658ct>

#### **Journal**

Proceedings of the Annual Meeting of the Cognitive Science Society, 33(33)

#### **ISSN**

1069-7977

#### **Author**

Tzur, Ron

#### **Publication Date**

2011

Peer reviewed

# Comparing A Brain-Based Account of Mind with Dual-Processing Theories

Ron Tzur

University of Colorado Denver

**Abstract:** This theoretical paper compares dual-processing theories (DPT) with a constructivist account of the mind (both knowing and learning). This account, termed reflection on activity-effect relationship, provides a single, multi-step model of processing situated within three functional systems in the human brain. Using well-known examples from DPT studies, two types of reflection (mental comparisons) and corresponding stages through which existing conceptions may be transformed into new ones—are postulated to link conceptual learning with brain functioning. The central argument advanced here is that (a) distinguishing two frames of reference (observer, problem solver) and (b) articulating the solution process as well as the nature of problems (e.g., prompts), not only improves explanations of thinking taken-up by DPT, but also extends the range of issues addressed to cognitive change, which are germane to education.