

אנו שמחים לארח את

**Prof. Janet Metcalfe, Columbia University, NY, U.S.A.**

*Error correction*

**Asst. Prof. Rakefet Ackerman, Technion, Israel.**

*Meta-Reasoning: What can we learn from meta-memory?*

ההרצאות תתקיימנה ביום ה' ה- 15 במאי 2014, בין השעות 11:30 – 13:30

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נשמח לראותכם בין אורחינו

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את הפרטים הבאים: שם, סוג רכב, מס' זיהוי, צבע רכב, וזמן הגעה.

**תקצירי ההרצאות מופיעים בעמוד הבא**

## **Prof. Janet Metcalfe:** *Error Correction*

People are not blank slates on which correct knowledge is simply inscribed. Instead, typically, people have knowledge but it is often incomplete or incorrect. The job of the learner is like what Popper described as the role of the scientist: to transform their incorrect knowledge into correct knowledge. When we already have the correct answer no learning is needed. But we make progress toward truth--we learn, if you will-- by correcting errors. In this talk, I will review a sequence of studies investigating the underlying the processes of error correction. We will ask: Does generating an error before learning the correct response hurt or help learning? While a number of theories suggest that error free learning should be beneficial, in our experiments, we find the reverse. Error generation helps learning. Are errors about which one has high confidence--those in which the person strongly believes--particularly intractable to correction? What mental processes contribute to people's abilities to correct their errors (and especially their high confidence errors)? What brain correlates are implicated in the correction of errors, and what do these correlates tell us about the mental processes? Are there individual or group differences? Finally, if we have no privileged access to 'real' truth and our confidence judgments reveal what we think is true, then our openness to overwriting high confidence correct responses with incorrect information should be the same as our openness to the correcting high confidence errors. The final experiments I will present explore the question of whether the overwriting of high confidence correct information by erroneous information is, indeed, governed by the same principles of 'error correction' as the overwriting of high confidence errors by the correct responses.

## **Prof. Rakefet Ackerman\*:** *Meta-Reasoning: What can we learn from meta-memory?*

The past few decades have witnessed a surge of research in the area of metacognition. The foundational principles for this work were articulated in the monitoring and control framework by [Nelson and Narens \(1990\)](#). Although there have been substantial developments since then, the basic principles remain widely accepted even more than twenty years later. This framework was applied mainly to studying memorization tasks, although these principles are clearly relevant for regulating the performance of many other cognitive tasks. As a result, relatively little is known about the metacognitive processes involved in performing more complex tasks. In this talk I will present metacognitive processes involved in reasoning, in particular in problem solving. In some respects, there are clear analogies between meta-reasoning and meta-memory, while in others new theoretical developments are called for. Considering the analogies between reasoning and memorization tasks is suggested to carry mutual theoretical benefits.

\* The talk will be based on a chapter written in collaboration with Valerie Thompson.