Leibniz Institute on Aging –
Fritz Lipmann Institute

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How to see a ghost, think like a molecule, and write like a scientist

A new model of the relationship between science & communication

September 22, 2016 | 11:00 am
Lecture Hall “Beutenberg“, FLI Building 3

Most scientists see communication pragmatically: as a tool to transmit information to their peers and other audiences. But communication and research are connected at a more profound level: distilling ideas into texts, images, mathematics or another representational system is an essential step in structuring scientific thinking. The connection lies in the complex models that give everything in science its meaning. Models are complex cognitive architectures that individual scientists build in their minds and constantly revise through learning and experience. As they do so, they integrate concepts about specific systems into larger theories such as evolution, the fundamental principles of science, and basic cognitive patterns that we use in our daily lives. This process is crucial to success, but it is poorly understood and rarely discussed in any systematic way during a scientist's education.

Communicative situations expose the structure and invisible architecture of a model and exposes connections between ideas so that scientists can check their logical consistency, discover hidden assumptions and patterns, apply new ones and generate new scientific questions. These are usually important steps along the way to new discoveries. In this talk I will show how communicative tools can be applied to the "mental game" of science, to help scientists improve both their writing and their research. As such, they are fundamental to the lifelong process of learning that is necessary for a successful career in research.

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