

The Academic Bulletin

from the Office of the Provost of Calvin College

Friday, April 6, 2018

Memory Retrieval and Learning

McArthur Wheeler managed to rob not just *one* but *two* banks in one day. However, after his image from a bank security camera was broadcast on television that same day, he was apprehended by police. Identifying Mr. Wheeler in the video was a cinch. He had not bothered to wear a disguise during the robberies, because he wrongly believed rubbing lemon juice on his face would render him invisible to security cameras.

In time it became evident that Mr. Wheeler had fallen prey to a malady common to us all: the illusion of understanding. Although he thought he understood the neutralizing effect of lemon juice on visual perception, he clearly did not. His knowledge was flawed, and he was unaware, which makes Mr. Wheeler just like the rest of us. We all tend to think we know a lot more about things—such as flush toilets, helicopters, and ocean tides—than we actually do. But as Rozenblit and Keil (2002) demonstrated, this is an illusion, which disappears after we attempt to retrieve information from memory by explaining what we think we know or by trying to answer specific questions regarding the topic at hand. This goes a long way toward explaining why many students are surprised when they score lower on a test than anticipated. Their mastery of the content was an illusion.

Retrieving information from memory does more than provide a reality check on understanding, however; it also positively impacts learning. As we have been discussing in the New Faculty Program, administered by the Teaching and Learning Network, administering frequent quizzes throughout the course of a semester (thereby providing multiple memory-retrieval events for students) increases average final exam scores by about half a grade and leads to significantly better long-term retention of course content. In fact, just increasing the number of midterm exams given in a semester by one has been shown to lead to measurable long-term learning gains in students.

Memory retrieval is a powerful instructional tool. Perhaps, if someone had asked Mr. Wheeler to explain how it is that lemon juice causes invisibility before that fateful day, he may have saved himself from going to prison.

Citation: Leonid Rozenblit and Frank Keil, “The Misunderstood Limits of Folk Science: An Illusion of Explanatory Depth,” *Cognitive Science*, 26 (2002): 521–562.

Jim Jadrich, teaching and learning network

Celebrate with Off-Campus Programs

This year marks the 50th anniversary of the first off-campus interim at Calvin: the French interim abroad. The Off-Campus Programs Office invites you to celebrate this milestone with us on Monday, April 9, at 2:45 p.m. We will have a short program and a cake reception. Following the program, the Off-Campus Expo will allow students to explore off-campus opportunities (interim and semester) for the 2018–19 academic year. Come join us Monday afternoon in the Fieldhouse lobby.

From the Faculty Activity Reports

- Kara Sevensma (Education), “Digital Citizenship: How Do We Prepare Teacher Candidates and Teachers to Lead the Way?” (lecture, American Association of Colleges for Teacher Education, Baltimore, MD, March 1, 2018).
- John Wertz (Biology), “[Herbivorous Turtle Ants Obtain Essential Nutrients from a Conserved Nitrogen-Recycling Gut Microbiome](#),” *Nature Communications* 9, art. 964 (2018).
- Kevin Timpe (Philosophy), “Structural Evils, Education, and Disability: Revisioning Community” (lecture, Wesleyan Philosophical Society, Cleveland, TN, March 8, 2018).

Be sure to [fill out](#) your Faculty Activity Reports regularly. If you have questions, see the [FAQ page](#).

Coming Up on Campus (Check the [campus calendar](#) for a full list of events)

Monday, April 9

- Chapel. Michelle Loyd-Paige. 10:00 a.m., Chapel
- Off-Campus Programs 50th-anniversary reception and Interim Expo. 2:45 p.m., Fieldhouse lobby
- Artist’s talk and reception. Sarah Jane, *Mere Objects*. 7:00 p.m., Bytwerk Theater (talk); Center Art Gallery (reception)

Tuesday, April 10

- Chapel. *Lectio divina* with Bob Crow and Pastor Joella. 10:00 a.m., Chapel
- Faculty Senate meeting. 4:30 p.m., Hoogenboom 280
- Henry Institute lecture. David Anderson Hooker (U of Notre Dame), “Searching for a Reconfigured ‘We the People’: Embracing Counternarratives for Just and Civil Discourse.” 6:30 p.m., Kent District Library, Wyoming branch

Wednesday, April 11

- Chapel. Senior Story with Pastor Mary and Diana Lopez. 10:00 a.m., Chapel
- Film screening and Q&A. *Milwaukee 53206*. 7:00 p.m., Bytwerk Video Theater

Thursday, April 12

- [Festival of Faith and Writing](#).
- Chapel. Sounds of Latino worship with Carlos Colon and Rodrigo Cano. 10:00 a.m., Chapel
- Mathematics and Statistics colloquium. Mckenzie West (Kalamazoo College). 3:40 p.m., NH 276

Friday, April 13

- [Festival of Faith and Writing](#).
- Chapel. Student worship team. 10:00 a.m., Chapel
- Science division seminar. Jim Olthoff (NIST), “The International System of Units: Where Is It Going?” 3:30 p.m., SB 010