

Erasmus University Rotterdam, the Netherlands
CSC PhD 2015 Project Description

School/Department:	Psychology Department, Erasmus University Rotterdam, The Netherlands
Project Title:	Embodied Memory
Abstract:	<p>The embodied (or grounded) cognition theory holds that cognitive processes such as memory and language share processing mechanisms with embodied processes such as perception and action. When people mentally represent a situation, such as eating an apple, perceptual and action systems simulate an experience 'as if' actually eating an apple (Pecher, 2013b). Many studies have found support for the idea that cognition interacts with perception and action. Although interpreted as evidence that sensory-motor processes are necessary for cognition, many results might merely show sensory-motor activation as by-products of cognition rather than as necessary components. A strong claim of the theory, however, is that perception and action are necessary for cognition and that if perceptual or action systems are less available, cognition should suffer. In prior research, I have shown that, despite activation of the motor system, visual working memory is not supported by the motor system (Pecher, 2013a, Pecher et al. 2013; Quak, Pecher, & Zeelenberg, 2014). Using similar and new techniques, I propose to investigate to what extent perception and action are fundamental to memory and language. It is important to develop and use more critical tests of the grounded cognition framework because the framework has a huge impact not only on theories of cognition but also in related fields such as linguistics, education, philosophy, social psychology, and consumer research.</p> <p>In our lab we study fundamental questions of memory and other cognitive processes. We collaborate with many researchers in different countries. My former PhD students all have obtained research positions at universities or in industry after obtaining their PhD. We have good lab facilities for conducting behavioral experiments with excellent technical support.</p>
Requirements of candidate:	<p>Background: You have a master's degree in Cognitive Science or Experimental/Cognitive Psychology. You have experience with statistics and research methods, preferably including practical research skills such as programming experiments, testing participants, analyzing data, and writing APA-style research reports.</p> <p>Master degree: Yes</p> <p>IELTS Grade: 7.0 (minimal 6.0 per component)</p> <p>or</p> <p>TOEFL: 100 (minimal 20 per component)</p>

<p>Supervisor information:</p>	<p>Ass. Prof. Diane Pecher pecher@fsw.eur.nl www.memorylab.eu</p> <p>Recent Publications</p> <p>de Jonge, M., Tabbers, H. K., Pecher, D., Jang, Y., & Zeelenberg, R. (in press). The efficacy of self-paced study in multitrial learning. <i>Journal of Experimental Psychology: Learning, Memory, and Cognition</i>.</p> <p>Quak, M., Pecher, D., & Zeelenberg, R. (2014). Effects of motor congruence on visual working memory. <i>Attention, Perception, and Psychophysics</i>. doi:10.3758/s13414-014-0654-y</p> <p>Topolinski, S., Maschmann, I. T., Pecher, D., & Winkielman, P. (2014). Oral Approach-Avoidance: Affective Consequences of Muscular Articulation Dynamics. <i>Journal of Personality and Social Psychology</i>, 106, 885-896. Doi: 10.1037/a0036477</p> <p>Zanolie, K. & Pecher, D. (2014). Number-induced shifts in spatial attention: A replication study. <i>Frontiers in Psychology</i>, 5:987. doi: 10.3389/fpsyg.2014.00987</p> <p>Zeelenberg, R., & Pecher, D. (2014). A method for simultaneously counterbalancing condition order and the assignment of stimulus materials to conditions. <i>Behavior Research Methods</i>. Doi: 10.3758/s13428-014-0476-9</p> <p>Halberstadt, J., Pecher, D., Zeelenberg, R., Ip Wai, L., & Winkielman, P. (2013). Two faces of attractiveness: Making beauty-in-average appear and reverse. <i>Psychological Science</i>, 24, 2343-2346. doi:10.1177/0956797613491969</p> <p>Pecher, D. (2013a). No role for motor affordances in visual working memory. <i>Journal of Experimental Psychology: Learning, Memory, and Cognition</i>, 39, 2-13. Doi: 10.1037/a0028642</p> <p>Pecher, D. (2013b). The perceptual representation of mental categories. In D. Reisberg (Ed.). <i>The Oxford Handbook of Cognitive Psychology</i>. New York: Oxford University Press.</p> <p>Pecher, D., de Klerk, R. M., Klever, L., Post, S., van Reenen, J. G., & Vonk, M. (2013). The role of affordances for working memory for objects. <i>Journal of Cognitive Psychology</i>, 25, 107-118. Doi: 10.1080/20445911.2012.750324</p> <p>Pecher, D., & Winkielman, P. (2013). Grounded Cognition and Social Interaction. In B. Kaldis (Ed.). <i>Encyclopedia of Philosophy and the Social Sciences</i>. Thousand Oaks, CA: Sage.</p> <p>de Jonge, M., Tabbers, H. K., Pecher, D., & Zeelenberg, R. (2012). The effect of study time distribution on learning and retention: A Goldilocks principle for presentation rate. <i>Journal of Experimental Psychology: Learning, Memory, and Cognition</i>, 38, 405-412.</p> <p>Jang, Y., Wixted, J. T., Pecher, D., Zeelenberg, R., & Huber, D. E. (2012).</p>
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	<p>Decomposing the interaction between retention interval and study/test practice: The role of retrievability. <i>Quarterly Journal of Experimental Psychology</i>, 65, 962-975.</p> <p>Oosterwijk, S., Winkielman, P., Pecher, D., Zeelenberg, R., Rotteveel, M., & Fischer, A. (2012). Mental states inside out: Switching costs for emotional and non-emotional sentences that differ in internal and external focus. <i>Memory & Cognition</i>, 40, 93-100.</p> <p>Zanolie, K., Van Dantzig, S., Boot, I., Wijnen, J., Schubert, T. W., Giessner, S., & Pecher, D. (2012). Mighty metaphors: Behavioral and ERP evidence that power shifts attention on a vertical dimension. <i>Brain and Cognition</i>, 78, 50-58.</p> <p>Zwaan, R. A., & Pecher, D. (2012). Revisiting mental simulation in language comprehension: Six replication attempts. <i>PLoS ONE</i> 7(12): e51382 doi: 10.1371/journal.pone.0051382 http://www.plosone.org/article/info%3Adoi%2F10.1371%2Fjournal.pone.0051382</p> <p>Borghi, A. M., & Pecher, D. (2011). Introduction to the special topic Embodied and Grounded Cognition. <i>Frontiers in Psychology</i>, 2:187. http://www.frontiersin.org/cognition/10.3389/fpsyg.2011.00187/full</p> <p>Boot, I. & Pecher, D. (2011). Representation of categories: Metaphorical use of the container schema. <i>Experimental Psychology</i>, 58, 162-170.</p> <p>Collins, J., Pecher, D., Zeelenberg, R., & Coulson, S. (2011). Modality switching in a property verification task: An ERP study of what happens when candles flicker after high heels click. <i>Frontiers in Cognition</i>, 2:10. http://www.frontiersin.org/Cognition/10.3389/fpsyg.2011.00010/abstract</p> <p>Pecher, D., & Boot, I. (2011). Numbers in Space: Differences between concrete and abstract situations. <i>Frontiers in Cognition</i>, 2:121. http://www.frontiersin.org/cognition/10.3389/fpsyg.2011.00121/abstract</p> <p>Pecher, D., Boot, I., & Van Dantzig, S. (2011). Abstract concepts: Sensory-motor grounding, metaphors, and beyond. In B. Ross (Ed.). <i>The Psychology of Learning and Motivation</i>, vol. 54 (pp. 217-248). Burlington: Academic Press.</p> <p>Pecher, D., Boot, I., van Dantzig, S., Madden, C. J., Huber, D. E., & Zeelenberg, R. (2011). The sound of enemies and friends in the neighborhood: Phonology mediates activation of neighbor semantics. <i>Experimental Psychology</i>, 58, 454-463</p> <p>Van Dantzig, S., Cowell, R. A., Zeelenberg, R., & Pecher, D. (2011). A sharp image or a sharp knife: Norms for the modality-exclusivity of 774 concept-property items. <i>Behavior Research Methods</i>, 43, 145-154.</p> <p>Van Dantzig, S. & Pecher, D. (2011). Spatial attention is driven by mental simulations. <i>Frontiers in Cognition</i>, 2:121. http://www.frontiersin.org/cognition/10.3389/fpsyg.2011.00040/full</p> <p>Zeelenberg, R., Bocanegra, B. R., & Pecher, D. (2011). Emotion-induced impairments in speeded word recognition. <i>Experimental Psychology</i>, 58, 400-411.</p>
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	<p>Boot, I. & Pecher, D. (2010) Similarity is closeness: Metaphorical mapping in a perceptual task. <i>Quarterly Journal of Experimental Psychology</i>, 63, 942-954.</p> <p>Pecher, D., van Dantzig, S. Boot, I., Zanolie, K., & Huber, D. E. (2010). Congruency between word position and meaning is caused by task induced spatial attention. <i>Frontiers in Cognition</i>, 1:30. http://www.frontiersin.org/cognition/10.3389/fpsyg.2010.00030/abstract</p> <p>Camp, G., Pecher, D., Schmidt, H. G., & Zeelenberg, R. (2009). Are independent probes truly independent? <i>Journal of Experimental Psychology: Learning, Memory, and Cognition</i>, 35, 934-942</p> <p>Pecher, D., de Rooij, J., & Zeelenberg, R. (2009). Does a pear growl? Interference from semantic properties of orthographic neighbors. <i>Memory & Cognition</i>, 37, 541-546.</p> <p>Pecher, D., Van Dantzig, S., & Schifferstein, H. N. J. (2009). Concepts are not represented by conscious imagery. <i>Psychonomic Bulletin & Review</i>, 16, 914-919.</p> <p>Pecher, D., Van Dantzig, S., Zwaan, R. A., & Zeelenberg, R. (2009). Language comprehenders retain implied shape and orientation of objects. <i>Quarterly Journal of Experimental Psychology</i>, 62, 1108-1114.</p>
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