True and false intentions:
Mental images of the future

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Avhandling för avläggande av filosofie doktorexamen i psykologi, som med vederbörligt tillstånd av samhällsvetenskapliga fakulteten vid Göteborgs Universitet kommer att offentligen försvaras fredagen den 6 december 2013 kl. 10.00 i sal F1 Psykologiska Institutionen, Haraldsgatan 1, Göteborg.

Fakultetsopponent: Professor Bertram Malle, Department of Cognitive, Linguistic, and Psychological Sciences, Brown University, Providence, USA

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This thesis is based on the following four papers:

I.   Granhag, P.A. & Knieps, M. (2011). Episodic future thoughts: Illuminating the trademarks of forming true and false intentions. *Applied Cognitive Psychology, 25*, 274-280.

II.   Knieps, M., Granhag, P.A., & Vrij, A. (2013a). Back to the future: Asking about mental images in order to discriminate between true and false intentions. *The Journal of Psychology: Interdisciplinary and Applied, 147,* 619-640.

III.   Knieps, M., Granhag, P. A., & Vrij, A. (2013b). Repeated visits to the future: Asking about mental images to discriminate between true and false intentions. *International Journal of Advances in Psychology, 2,* 93-102.

IV.   Knieps, M., Granhag, P.A., & Vrij, A. *Been there before? Examining 'familiarity' as a moderator for discriminating between true and false intentions.* Manuscript, Department of Psychology, University of Gothenburg.

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Abstract

Knieps, M. (2013). *True and false intentions: Mental images of the future*. Department of Psychology, University of Gothenburg, Sweden

Being able to detect deception about future actions is of clear societal value. At its best, it could prevent crimes before they happen. This is why research has begun to study how to assess the veracity of statements about future events. People experience mental images when they think about future events that allow them to vividly pre-experience the future. The process underlying mental images is commonly referred to as *episodic future thinking* (EFT). The main research question of this thesis is how mental images can help to discriminate between true and false intentions. To answer that question, four studies were conducted. Study I was the first to examine the relevance of mental images for discriminating between true and false intentions. Study II examined the *effects of time,* Study III examined the *effects of repeated questioning,* and Study IV examined the *effects of familiarity.* The same general research procedure, although with some variations, was used in the four studies (planning phase, interview(s), and post-interview questionnaire). In general, half of the participants planned a criminal act (i.e., the liars) whereas the other half planned a non-criminal act (i.e., the truth tellers). Before executing the planned act, all participants were intercepted and asked several questions about the mental image they may have experienced when planning the stated future actions. The truth tellers told the truth whereas the liars, as they had been instructed, used a cover story to mask their criminal intentions. **Study I** (N = 70) revealed that more truth tellers (97%) than liars (66%) reported that they had experienced a mental image in the planning phase. The truth tellers also provided more words to describe their mental image (which they experienced as more vivid) than the liars. **Study II** (N = 84) differed from the first study in that the participants were interviewed twice. The second interview was six to eight days after the first interview. Again, more truth tellers (93%) than liars (71%) reported that they had experienced a mental image in the planning phase. The two groups did not differ with respect to the number of words and details provided to describe their images. With respect to the consistency between the two interviews, the truth tellers' descriptions were characterized by more repetitions than the liars'; but the descriptions were characterized by the same number of commissions. **Study III** (N = 60) also used two interviews, but both interviews were conducted within the same day. More truth tellers (Interview 1 = 97%; Interview 2 = 100%) reported that they had experienced a mental image in the planning phase than the liars (Interview 1 = 77%; Interview 2 = 83%). The truth tellers provided more words to describe their mental image, but truth tellers and liars did not differ with respect to the type of details given. **Study IV** (N = 120) examined the extent to which location familiarity moderated the participants' descriptions of their mental images. The study revealed that more truth tellers (93%) than liars (69%) reported they had experienced a mental image in the planning phase. Although the interview did not reveal any differences with respect to the content of the descriptions, the truth tellers tended to experience their mental image more vividly than the liars. In conclusion, all four studies showed that truth tellers report a mental image more often than liars. With respect to the content of the descriptions of the mental images no clear differences were found although truth tellers experienced their mental images more vividly than liars. This suggests that mental images can help to discriminate between true and false intentions, but exactly how to frame the questions is a topic for future research.

Keywords: deception, episodic future thinking, mental images, true and false intentions

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