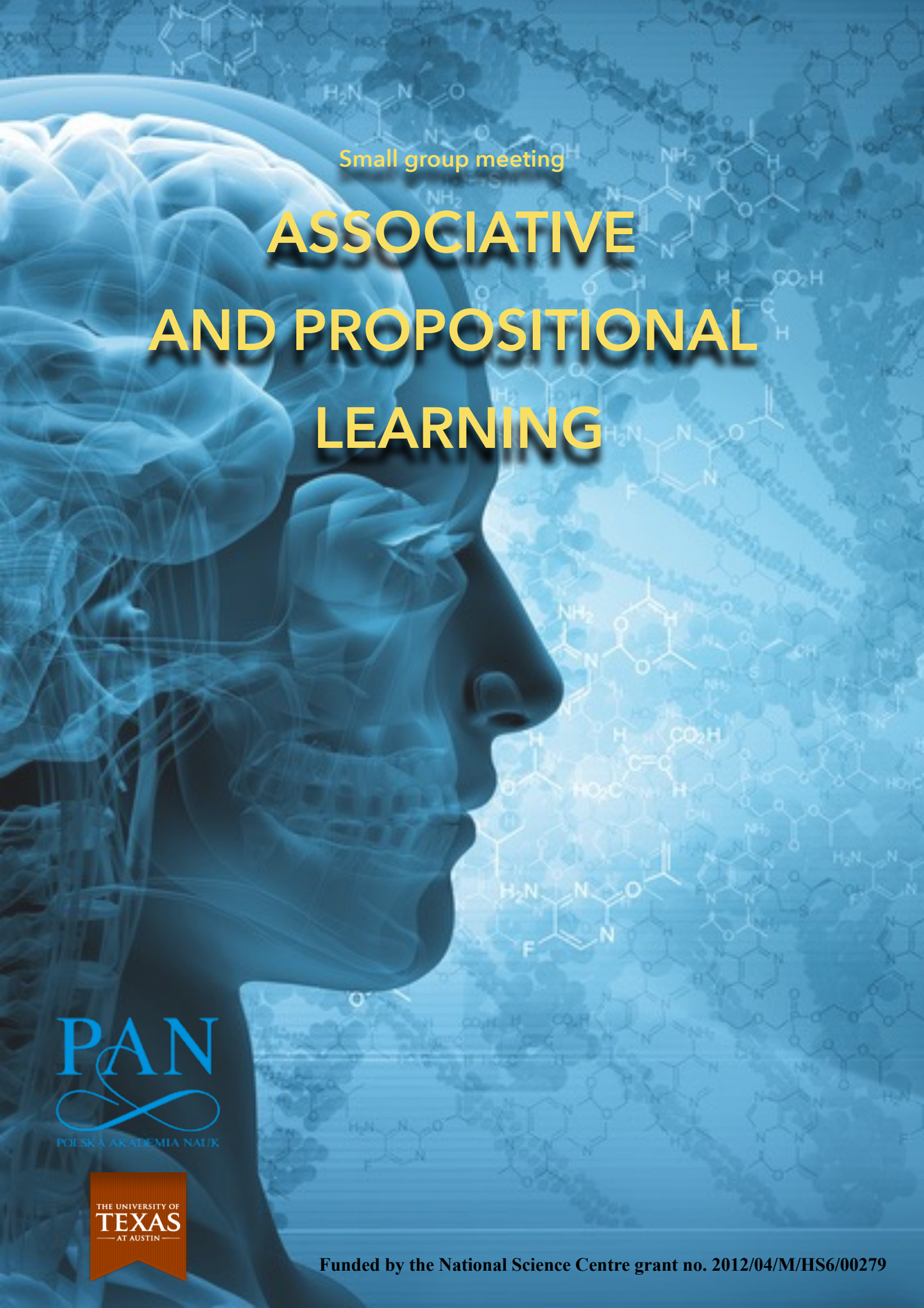

Small group meeting

ASSOCIATIVE AND PROPOSITIONAL LEARNING

PAN
POLSKA AKADEMIA NAUK

THE UNIVERSITY OF TEXAS AT AUSTIN

Funded by the National Science Centre grant no. 2012/04/M/HS6/00279

ASSOCIATIVE AND PROPOSITIONAL LEARNING

Small group meeting

June 18th - 20th, 2015

Staszic's Palace Warsaw, Poland

Organized by:

Robert Balas, Polish Academy of Sciences

Bertram Gawronski, University of Texas at Austin

Funded by the National Science Centre grant no. 2012/04/M/HS6/00279

Overview

Thursday, June 18th

18:00 - 20:00	Welcome Reception - Staszic's Palace
20:00	Social Event

Friday, June 19th

09:00 - 10:30	Session I: Mechanisms and Representations
10:30 - 11:00	Coffee Break
11:00 - 12:30	Session II: Associative and Structured Knowledge
12:30 - 14:00	Lunch (on-site)
14:00 - 15:00	Session III: Conscious and Unconscious Learning
15:00 - 15:30	Coffee Break
15:30 - 16:30	Session IV: Dual-Process Views on Learning
16:30 - 17:00	Roundtable Discussion
19:00	Dinner - Der Elefant

Saturday, June 20th

09:00 - 10:30	Session V: Memory and Inference
10:30 - 11:00	Coffee Break
11:00 - 12:30	Session VI: Contingency Learning
12:30 - 14:00	Lunch (on-site)
14:00 - 15:00	Session VII: Attentional Processes
15:00 - 15:30	Coffee Break
15:30 - 16:30	Session VIII: Individual Differences
16:30 - 17:00	Roundtable Discussion
19:00	On-site Dinner

Friday, June 19th, Morning

Session I: Mechanisms and Representations

9:00 - 9:30 Jan De Houwer, Ghent University, Belgium

Propositional models are not necessarily inferential or rational: Relational information as the core ingredient of propositions and relational responding as the core challenge for association formation models

9:30 - 10:00 Dominic Dwyer, Cardiff University, United Kingdom

Beyond the information (not) given: Associative mechanisms versus representations of uncertainty in extinction

10:00 - 10:30 Tina Glaser, University of Bielefeld, Germany

Lateral attitude change

10:30 - 11:00 Coffee Break

Session II: Associative and Structured Knowledge

11:00 - 11:30 Aidan Feeney, Queen's University Belfast, United Kingdom

The roles of associative and structured knowledge in inductive reasoning

11:30 - 12:00 Xiaoqing Hu, University of Texas at Austin, USA

Associative and propositional processes in evaluative conditioning: Effects of relational information and reinforcement

12:00 - 12:30 Yoav Bar-Anan, Ben-Gurion University in the Negev, Israel

The effect of propositional and associative information on automatic and deliberate evaluation: The effects of goals and cognitive resources during learning

12:30 - 14:00 Lunch

Friday, June 19th, Afternoon

Session III: Conscious and Unconscious Learning

14:00 - 14:30 Arnaud Destrebecqz, Université Libre de Bruxelles, Belgium

What is the basis of human associative learning?

14:30 - 15:00 Christoph Stahl, University of Cologne, Germany

On consciousness in evaluative conditioning: Investigating subliminal and preconscious learning conditions

15:00 - 15:30 Coffee Break

Session IV: Dual-Process Views on Learning

15:30 - 16:00 Christilene Du Plessis, Erasmus University Rotterdam, Netherlands
The resource dependency of two ways of learning brand associations

16:00 - 16:30 Mandy Hütter, Eberhard-Karls-Universität Tübingen, Germany

Dissociating associative and propositional attitude acquisition: Current state and future directions

16:30 - 17:00 Roundtable Discussion

19:00 Dinner

Saturday, June 20th, Morning

Session V: Memory and Inference

9:00 - 9:30 Anne Gast, University of Cologne, Germany

Based on memory? Evaluative conditioning is sensitive to experimentally induced forgetting

9:30 - 10:00 Eva Walther, University of Trier, Germany

Evaluative conditioning affects prejudice formation and generalization in 3 to 6 year-old children

10:00 - 10:30 Ottmar Lipp, Curtin University, Australia

Verbal instruction can mediate unconditional stimulus revaluation in human evaluative conditioning

10:30 - 11:00 Coffee Break

Session VI: Contingency Learning

11:00 - 11:30 Helena Matute, Deusto University, Spain

The role of outcome probability and contingency in preparing for important outcomes

11:30 - 12:00 Fernando Blanco, Deusto University, Spain

Associative learning versus judgmental processes in contingency detection: Reexamining the evidence for dissociations between different dependent measures

12:00 - 12:30 Florian Kattner, University of Wisconsin-Madison, USA

Cue competition effects in evaluative conditioning

12:30 - 14:00 Lunch

Saturday, June 20th, Afternoon

Session VII: Attentional Processes

14:00 - 14:30 Jeffrey Sherman, University of California at Davis, USA

New knowledge depends on old knowledge: Implications for stereotype formation, person perception, and attitude change

14:30 - 15:00 Mike Le Pelley, University of New South Wales, Australia

Reward learning, attentional capture, and cognitive control

15:00 - 15:30 Coffee Break

Session VIII: Individual Differences

15:30 - 16:00 Georg Halbeisen, University of Trier, Germany

For whom absence breeds preference: Epistemic motivation predicts evaluative conditioning with negative contingencies

16:00 - 16:30 Aimee Bright, Queen Mary University of London, United Kingdom
Individual differences in the use of structured and associative knowledge for reasoning

16:30 - 17:00 Roundtable Discussion

19:00 Dinner

Abstracts

Propositional models are not necessarily inferential or rational: Relational information as the core ingredient of propositions and relational responding as the core challenge for association formation models

Jan De Houwer, Ghent University, Belgium

Propositions are informational units that contain information about how elements are related (e.g., I AM good vs I WANT TO BE good). Although rational inferences require propositional representations, propositions can also be operated on by non-inferential processes such as similarity-based retrieval. Hence, whereas the distinction between propositions and associations refers to the content of the representations that are assumed to mediate behavior, the distinction between inferential versus similarity-based retrieval refers to the nature of the processes that operate on those representations (Moors, 2014). The debate between propositional theories and association formation theories should thus center on the impact of relational information on behavior, rather than on whether behavior is rational. I review evidence showing that many aspects of behavior in both human and nonhuman animals are relational in nature and thus seem to require propositional representations.

Moors, A. (2014). Examining the mapping problem in dual process models. In J. W. Sherman, B. Gawronski, & Y. Trope (Eds.), *Dual process theories of the social mind* (pp. 20-34). New York: Guilford Press.

Beyond the information (not) given: Associative mechanisms versus representations of uncertainty in extinction

Dominic Dwyer, Cardiff University, United Kingdom

Associative models of learning tend to reflect the statistical relationships between directly experienced events. Causal models tend to go beyond this information to specify the ways in which events are related. This meta-representational aspect of causal models means that they are potentially able to reflect uncertainty about the relationships between events: for example, the situation where cue A leads to outcome B on some occasions but not others might lead to the formation of two alternative causal models (one where A causes B, and one where it does not) along with uncertainty about which model applies. Recent studies of Pavlovian conditioning in rats manipulated access to the food-magazine during extinction as a means of producing uncertainty about the presence or absence of rewards (Waldmann et al., 2012). The fact that rats were sensitive to the difference between the explicit absence of a reward, and the inability to experience the reward, was interpreted as evidence in favor of a causal-model account reflecting uncertainty. However, simple associative mechanisms also predict the same pattern of results. Today, I will discuss the key divisions between associative and causal-model accounts, why "heuristic" arguments – such as from Lloyd- Morgan's Canon – cannot resolve the problem, and propose a number of possible empirical tests that can.

Waldmann, M. R., Schmid, M., Wong, J., & Blaisdell, A. P. (2012). Rats distinguish between absence of events and lack of evidence in contingency learning. *Animal Cognition, 15,* 979-990.

Lateral attitude change

Tina Glaser, University of Bielefeld, Germany Gerd Bohner, University of Bielefeld, Germany

Attempts to change a person's evaluation of a focal attitude object often produce side effects such as changed evaluations of related attitude objects (lateral attitude change, LAC). The authors present a theoretical framework that focuses on lateral instead of focal attitude change. Our framework (Glaser et al., in press) distinguishes two types of LAC: (a) generalization effects, where attitude change toward a focal object transfers to related objects, and (b) displacement effects, where only related attitudes change but the focal attitude does not change. We propose that both generalization and displacement of focal attitude change can be explained by the same principles. We present the six postulates of the LAC framework and outline how associative and propositional processes can account for generalization and displacement effects. Furthermore, we present initial results of studies testing the assumptions of the LAC framework.

Glaser, T., Dickel, N., Liersch, B., Rees, J., Süssenbach, P., & Bohner, G. (in press). Lateral attitude change. *Personality and Social Psychology Review*.

The roles of associative and structured knowledge in inductive reasoning

Aidan Feeney, Queen's University Belfast, Ireland
Aimee Bright, Queen Mary University of London, United Kingdom Eoin Travers, Queen's University Belfast, Ireland

When we reason inductively we must decide how likely it is that a particular conclusion is true given some evidence. For example, given evidence that horses possess some property we might be more or less likely to accept the conclusion that cows also have that property. People find these arguments relatively easy to evaluate and there are a number of theories of how they do this. We will argue that such theories can be classified on the basis of their assumptions about the form of the knowledge that is activated during the evaluation process. Whilst some theories assume that the underlying knowledge is associative, others assume that it is structured. We describe an account of category based reasoning which holds that both types of knowledge can drive reasoning, and that structured knowledge is more likely to be used under favorable processing conditions. This account predicts that associative knowledge is available earlier to reasoning processes than is structured knowledge. We will briefly describe experiments showing that dissociated measures of associative and structured knowledge differentially predict judgments of argument strength under different processing conditions. We will also present data from a mouse tracking paradigm which suggests that even when participants give a response that is consistent with the use of structured knowledge, associative knowledge has control of the response before structured knowledge takes over.

Associative and propositional processes in evaluative conditioning: Effects of relational information and reinforcement

Xiaoqing Hu, University of Texas at Austin, USA Bertram Gawronski, University of Texas at Austin, USA Robert Balas, Polish Academy of Sciences, Poland

Evaluative conditioning (EC) is defined as the change in the evaluation of a conditioned stimulus (CS) due to its pairing with a valenced unconditioned stimulus (US). According to propositional accounts, EC effects should be qualified by information about the relation between the CS and the US. In contrast, dual-processes accounts suggest that relational information should qualify EC effects only on explicit evaluations, whereas implicit evaluations should reflect the frequency of CS-US pairings irrespective of their relation. The present study aimed to test competing predictions of the two accounts. Using pharmaceutical products as CSs and positive and negative health-outcomes as USs, participants were informed that the CSs either cause or prevent the USs. To investigate effects of reinforcement, half of the CS-US pairings were presented 8 times while the other half was repeated 24 times. Implicit evaluations were measured with an evaluative priming task; explicit evaluations were measured with evaluative rating scales. Relational information moderated EC effects on explicit evaluations, showing a regular EC effect when the CSs caused the USs and a reverse EC effect when the CSs prevented the USs. In contrast, implicit evaluations showed a regular EC effect regardless of whether the CSs caused or prevented the USs. Unexpectedly, reinforcement did not moderate EC effects per se, but the impact of relational information, such that more frequent CS-US pairings led to stronger EC effects on implicit evaluations when the CSs caused the USs and weaker EC effects when the CSs prevented the USs. Although the differential effect of relational information on implicit and explicit evaluations supports dual-process accounts of EC, the obtained interaction of reinforcement and relational information requires more refined assumptions about the interplay of associative and propositional processes.

The effect of propositional and associative information on automatic and deliberate evaluation: The effects of goals and cognitive resources during learning

Yoav Bar-Anan, Ben-Gurion University in the Negev, Israel

A common assumption in evaluation theories is that automatic evaluation expresses associative information (e.g., reflecting a negative evaluation of a medicine because it is associated with sickness), whereas deliberate evaluation expresses propositional information (e.g., reflecting a positive evaluation of a medicine because it ends sickness). However, automatic evaluation expresses internal (mental) associative information. And, associative information in memory can reflect inference from propositional information (the medicine is associated with the positive evaluation inferred from the medicine-sickness specific relation). Therefore, I hypothesized that automatic evaluation reflects external propositional information whenever people have enough motivation and opportunity to thoroughly process propositional information. In support of that hypothesis, I will show evidence that processing goals and cognitive resources determine whether automatic evaluation would be more sensitive to associative or propositional information. I will also show evidence that deliberate evaluation is sensitive to internal associative information (mental associations) even when that information contradicts internal propositional information. Therefore, like automatic evaluation, deliberate evaluation also shows sensitivity to the goals and cognitive resources that people had during learning. For instance, under certain conditions, people showed more positive deliberate evaluation of a target that ended positive events than a target that ended negative events.

What is the basis of human associative learning?

Arnaud Destrebecqz, Université Libre de Bruxelles, Belgium

According to associationist, "strength" theories, learning occurs by automatic reinforcement between co-occurring events in the environment. According to opposite cognitive, or propositional accounts, learning depends on conscious hypothesis testing in such a way that performance to an event will improve when participants' conscious expectancies for that event increase. Perruchet et al. (2006) and Destrebecqz et al. (2010) used a simple reaction time task in which a warning tone was followed by a visual target in 50% of the trials. RT to the visual targets were recorded as well as participants' expectancies before each trial. Results indicated that while expectancy ratings decreased with the number of preceding tone-target trials (a phenomenon known as the gambler's fallacy), RTs became faster with runs of tone-target trials and slower with runs of target-alone ones, providing evidence for associationist accounts of unaware learning. In a reanalysis of these previous studies, and in two follow-up experiments, we show that these results may not reflect a true dissociation between learning and awareness as decreasing RTs were only observed in participants who did not show the gambler's fallacy. Participants who did show the gambler's fallacy did not show the Perruchet effect.

On consciousness in evaluative conditioning: Investigating subliminal and preconscious learning conditions

Christoph Stahl, University of Cologne, Germany

Theories of attitude acquisition hold that humans learn evaluations via different learning mechanisms, one of them being evaluative conditioning (EC). EC plays a central role in current dual-process models of attitudes: it is predicted to operate automatically and in the absence of conscious awareness. Consciousness research suggests two ways in which learning may proceed in the absence of awareness (Dehaene et al., 2006): First, EC might occurs despite the fact that (part of) the relevant information is not attended to. There is some evidence in support of this notion (e.g., Olson & Fazio, 2001), but it is not yet clear whether the effect follows the same or different regularities than those obtained under other conditions (e.g., Hütter & Sweldens, 2012; Kattner, 2012). In two studies, we attempted to reconcile the divergent findings but found new evidence for preconscious EC. Second, EC might occur with subliminal presentations. Consistent with this notion, a recent meta-analysis suggests that EC may operate on subliminally presented CSs (Hofmann et al., 2010). To investigate this possibility, we studied EC with subliminal presentation of CSs and strict subliminality checks (using an immediate AFC task). Across different presentation conditions, materials, and orienting tasks, we compared EC effects for supraliminal vs. subliminal presentation conditions, as well as for identified vs. non-identified CSs. EC effects were obtained for supraliminal and for identified CSs but not for subliminally presented CSs. We discuss moderating variables that may account for the discrepancy between the present findings and the meta-analytical results. Taken together, the findings suggest that conditions for reliable preconscious EC may be identifiable, but that EC is not, in general, independent from awareness.

The resource dependency of two ways of learning brand associations

Christilene Du Plessis, Erasmus University Rotterdam, Netherlands Steven Sweldens, Erasmus University Rotterdam, Netherlands Stijn M. J. van Osselaer, Cornell University, USA

Consumers' learning of brand associations is governed by the learning of cue (e.g., brand) – outcome (e.g., product quality) relations and two broad classes of models have been advanced to describe the learning of these relations. According to Human Associative Memory (HAM) models, cue-outcome reinforcement learning is governed strictly by the contiguity between cue and outcome. According to Predictive Learning Models (PLM), the updating of the associative strength between cue and outcome is governed by prediction error and cue interactions. Previous research has shown that PLM models describe the learning process best when the outcome is the focus of attention, but that HAM models describe learning better when attention is directed elsewhere (e.g., to other outcomes). However, to date it is unclear whether these learning modes differ in their resource dependency, or what are the consequences of constraints in cognitive capacity for either learning mode. The current research aims to fill that gap, by manipulating focus of attention and cognitive capacity. Preliminary results indicate that in the face of resource constraints, PLM processes continue to operate, but HAM processes cease operating in the background.

Dissociating associative and propositional attitude acquisition: Current state and future directions

Mandy Hütter, Eberhard-Karls-Universität Tübingen, Germany

Changing attitudes towards stimuli by pairing them with affectively laden stimuli is called evaluative conditioning. The question is whether such pairings can change attitudes via associative processes which operate efficiently, in the absence of awareness, are uncontrollable, and/or not influenced by intention. I present a line of research in which multinomial processing tree models are utilized to distinguish between aware and unaware and controllable and uncontrollable acquisition processes, respectively. The results support dual-process models of attitude acquisition with the relative weight of the two types of processes being moderated by characteristics of the acquisition situation. Hence, I want to argue that we should move away from universals and explore both the precursors of the different learning processes and the unique emotional and behavioral consequences of propositionally and associatively acquired attitudes.

Based on memory? Evaluative conditioning is sensitive to experimentally induced forgetting

Anne Gast, University of Cologne, Germany
Florian Kattner, University of Wisconsin-Madison, USA Jan De Houwer, Ghent University, Belgium
Klaus Rothermund, University of Jena, Germany

Evaluative conditioning (EC) is a change in the valence of a stimulus (CS) that is due to pairings with a valenced stimulus (US). A factor intensely discussed in EC research is the impact of contingency awareness/memory and its relation to associative and propositional models of EC. In most studies, memory is measured at the end of the experiment, which makes it unclear whether a memory influence is due to differences in learning or due to differences in the way memory is represented at the time of testing. In order to understand the role of the memory representation, it is useful to experimentally induce forgetting. In four experiments, CS-US pairings were presented to the participants, and contingency memory was disrupted selectively for some of the pairings. In a first line of studies, we gave participants forgetting instructions. In a second line of studies, we used a retroactive interference manipulation for which participants had to memorize new pairings of the CSs. Both directed forgetting and retroactive interference clearly reduced the magnitude of EC. The results and their implications for associative and propositional models are discussed from the background of a memory-and-retrieval model of EC.

Evaluative conditioning affects prejudice formation and generalization in 3 to 6 year-old children

Eva Walther, University of Trier, Germany Georg Halbeisen, University of Trier, Germany Michael Schneider, University of Trier, Germany

Understanding how children form affective attitudes toward others is of key importance in developmental and social psychology. However, little is known about which basic mechanisms contribute to the formation of these attitudes during the early childhood years. In order to fill this gap in Experiment 1, 44 children of ages 3 to 6 were presented with cartoon characters as conditioned stimuli (CSs) paired with pictures of liked or disliked animals as unconditioned stimuli (USs). In Experiment 2, 109 children aged 3 to 6 years were shown animal-like creatures ("fribbles"; Williams, 1998) as CSs paired with pictures of liked or disliked foods as USs. The children were then asked to indicate their preferences of the two CSs (in Exp. 1 and 2). The results of the first experiment indicated an evaluative conditioning effect in a way that CSs paired with disliked USs were evaluated more negatively than CSs paired with liked USs. Although it was found that older children were more accurate at recalling which CSs and USs had been paired, no moderating effect of children's age was found for conditioning. In the second experiment these findings were replicated and extended by demonstrating that conditioning effects generalized to novel stimuli sharing category resemblance or salient cues with the CS.

Verbal instruction can mediate unconditional stimulus revaluation in human evaluative conditioning

Ottmar V. Lipp, Curtin University, Australia
Hannah Jensen-Fielding, University of Queensland, Australia Camilla C. Luck, Curtin University, Australia

Prior research on the effects of verbal instruction on evaluative conditioning has yielded inconsistent results, presumably because the instructions targeted the conditional-unconditional stimulus contingencies rather than the evaluative component of learning. The current study used verbal instructions to re-valuate the unconditional stimulus in order to change evaluative conditioning that had been established during explicit pairings of conditional and positive or negative unconditional stimuli. Across two experiments, unconditional stimulus re-valuation changed evaluative conditioning as assessed by explicit and implicit evaluations, explicit pleasantness ratings and affective priming. Contingency learning was not affected by the re-valuation procedure. These results indicate that evaluative conditioning, established through explicit training, is subject to verbal instruction and suggest that evaluative conditioning is best accounted for in a propositional learning framework.

The role of outcome probability and contingency in preparing for important outcomes

Helena Matute, Deusto University, Spain
Fernando Blanco, Deusto University, Spain
Miguel A. Vadillo, King's College London, United Kingdom

Survival and adaptation to environmental changes requires the ability to anticipate important events and prepare for them. In order to prepare for important outcomes, organisms could base their behavior on the estimated probability of occurrence of those outcomes. Alternatively, they could prepare for important outcomes as a function of the reliability (i.e., contingency) of the signals which help them anticipate the occurrence of those outcomes. Indeed, cue-outcome contingency has been proposed in the literature as a critical cue that organisms will use to prepare for outcomes, and the potential impact of contiguity has sometimes been seen as a biased strategy. However, several experiments suggest that people use contiguity rather than contingency when preparing for outcomes. Furthermore, some researchers would defend that this strategy is perfectly rational. In the present experiments we explore several conditions in which people do use either contingency or contiguity, and discuss the implications for each case.

Associative learning versus judgmental processes in contingency detection: Reexamining the evidence for dissociations between different dependent measures

Fernando Blanco, Deusto University, Spain
Ion Yarritu, Deusto University, Spain
Miguel A. Vadillo, King's College London, United Kingdom Helena Matute, Deusto University, Spain

In contingency detection experiments, participants are first presented with a series of occurrences of a potential cause and an outcome, and then asked to judge the perceived contingency between them. It is well known that even when the actual contingency is zero, participants' judgments tend to be biased by the probabilities with which the two events occur (i.e., density biases). Previous research reported that density biases can be found only in judgments, but not in other, more indirect, measures that allegedly tap on more basic associative processes. Thus, the dissociation between judgments and other measures was used to support a "dual-process" view of contingency detection according to which the associative process encodes contingency and subsequent higher order processes bias the judgment. We review the published findings supporting a dual-process model based on dissociations between judgments and three different dependent measures. Using three strategies (meta-analysis, reanalysis of previously published data, and simulations), we argue that the evidence for such dissociations is actually weak: Some can be attributed to methodological artifacts, others are not generalizable or are difficult to replicate. Therefore, it is too soon to conclude that dual-process models are necessary to account for biases in contingency detection.

Cue competition effects in evaluative conditioning

Florian Kattner, University of Wisconsin-Madison, USA Payden White, University of Wisconsin-Madison, USA C. Shawn Green, University of Wisconsin-Madison, USA

Evaluative conditioning (EC) refers to a change in the valence of a conditioned stimulus (CS) as a result of being paired with an either positive or negative unconditioned stimulus (US). Several studies indicate that this form of conditioning might be insensitive to cue competition effects like blocking and overshadowing, whereas others reported some evidence of cue competition. In the present study, participants learned to associate arbitrary CSs (Maya drawings) with positive (+) and negative (-) meanings. The overall liking of drawings (self-report) changed towards the valence of the US. This EC effect was larger for isolated CSs than for stimuli that were presented as compounds, indicating overshadowing. However, isolated presentations of stimuli (e.g. A+) that were also presented as part of a compound (AB+) did not block the acquisition of EC with respect to the other stimulus in the compound (B). In a second experiment, the same dissociation between overshadowing and blocking was found when inferential learning processes had been suppressed during conditioning (i.e., by using a fast-paced reaction time task). The results indicate that (a) EC is subject to some forms of cue competition, and (b) pathway-strengthening processes may be sufficient to produce overshadowing of acquired stimulus evaluations.

New knowledge depends on old knowledge: Implications for stereotype formation, person perception, and attitude change

Jeffrey W. Sherman, University of California at Davis, USA

When people are learning about two different stimuli or about a single stimulus in different contexts, attention is directed toward those features of the second stimulus/context that most clearly differentiates it from the first stimulus/context. One consequence is that the associations between the novel stimulus/context and its distinguishing features are particularly strong. This is a very simple learning mechanism that, nevertheless, has a number of important and unexpected implications. For example, in the domain of stereotype formation, this suggests that, due to infrequent exposure, minority stereotypes will be based on distinguishing features and will be stronger than majority stereotypes. We have used this approach to integrate long-standing competing theories derived from research on category accentuation and illusory correlation. We also have applied this logic to understand why mixed-race individuals are most frequently assigned to minority rather than majority groups. Because the features of majority groups are typically learned first, facial features of minority groups are associated especially strongly with those groups. We have now extended this work to show that, if people learn about an individual in one context (e.g., among friends) prior to learning about her in another context (e.g., among family), then she will come to be associated more strongly with the features she possesses in the second context. Implications for the formation of contextualized attitudes will be discussed.

Reward learning, attentional capture, and cognitive control

Mike Le Pelley, University of New South Wales, Australia Daniel Pearson, University of New South Wales, Australia

A number of recent experiments have demonstrated that reward learning influences the extent to which stimuli capture our attention. We have shown that this pattern of value-modulated attentional capture extends to stimuli that have never been task-relevant. In a visual search task, certain stimuli signaled the magnitude of available reward, but reward delivery was not contingent on responding to those stimuli. Indeed, any attentional capture by these critical distractor stimuli led to omission of the reward that would otherwise have been obtained. Nevertheless, distractors signaling the availability of high reward produced greater attentional capture than those signaling low reward, even though this meant that participants were more likely to miss out on large rewards. Recently, we have demonstrated that this counterproductive pattern of value-modulated attentional capture is immune to cognitive control based on propositional knowledge, in that it persists even if participants are explicitly informed of the omission contingency that results in loss of reward. However, evidence suggests that training on the task allows participants to reduce the impact of reward learning on attentional capture, partially but not completely. This distinction between the impact of trained and propositional knowledge suggests a role for associatively-mediated instrumental conditioning in the value-modulated capture effect.

For whom absence breeds preference: Epistemic motivation predicts evaluative conditioning with negative contingencies

Georg Halbeisen, University of Trier, Germany Eva Walther, University of Trier, Germany

Evaluative conditioning (EC) refers to changes in liking of conditioned stimuli (CS) that are due to their pairing with other liked or disliked unconditioned stimuli (US; De Houwer, 2007). Although the finding that EC can be demonstrated with partial and even negative CS-US contingencies is of great theoretical relevance (Baeyens, Hermans, & Eelen, 1993; Kattner, 2014), its boundary conditions have not been explored. In order to close this gap, we test for a moderating role of epistemic motivation in predicting the independence of EC from CS-US contingency. Specifically, we argue that the motivation towards seeking firm answers and towards avoiding ambiguity (need for cognitive closure, NfCC; Kruglanski & Webster, 1996) prevents individuals from adjusting their CS evaluations for disconfirmatory evidence, and to form CS evaluations attuned to the CS-US co-occurrence rather than to the contingency. Consistent with this hypothesis, EC emerged with negative CS-US contingencies in participants high in NfCC, but reversed in participants low in NfCC. Implications for the underlying processes of EC are discussed.

Individual differences in the use of structured and associative knowledge for reasoning

Aimee Bright, Queen Mary University of London, United Kingdom Aidan Feeney, Queen's University Belfast, United Kingdom

During reasoning, people can draw on two distinct types of knowledge which differ in their processing characteristics. Associative knowledge influences reasoning particularly under challenging processing conditions. In contrast, when time and cognitive resources are available, reasoning can be informed by higher-order structural knowledge. Sometimes, associative and structured knowledge lead to opposing inferences (Bright & Feeney, 2014). Such cases of conflict in reasoning can provide insight into the relationship between the knowledge types and, in particular, whether use of structured knowledge sometimes requires the effortful inhibition of associative knowledge. In this talk we will explore to what extent individual differences in executive functions relate to use of structured and associative knowledge in category-based inductive reasoning. In Experiment 1, we demonstrate that semantic inhibitory control and working memory span independently predict variation in people's reasoning performance based on structured knowledge. In Experiment 2, we examine whether variations in general ability and cognitive processing style lead to differential reliance on structured versus associative knowledge. Findings suggest that individual differences in executive functions influence the extent to which people's reasoning is informed by different knowledge types. Better executive functioning appears to enable people to a) inhibit interference from competing associative knowledge and b) retrieve relevant structured knowledge.

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SIGHTSEEING

Warsaw is a city which combines past with future. You can find here historical monuments and modern buldings. One of the most recognized monuments is Palace of Culture and Science, which is also the tallest bulding in Poland (231 meters tall).

What is also worth to see near the Mercure Hotel?

HISTORIC OLD TOWN (3km)

Is the oldest part of the capital city. Rich in restaurants, cafes and shops. Has been placed on the UNESCO's list of World Heritage Sites as „an outstanding example of a near-total reconstruction of a span of history covering the 13th to the 20th century". It is the most prominent tourist attraction. Castle Square is part of the reconstructed Old Town and you can find there also the Zygmunt's Column which commemorate King Sigismund II Vasa who had moved Poland's capital form Kraków to Warsaw.

LAZIENKI PARK (1km)

It is the largest park in Warsaw. Was designed in 17th century and took the name from a bathing pavilion that was located there. In the complex you can see: Palace on the Water, Theater on the Isle inspired by the Ancient Greek and Roman architecture, the Little White House, Myślewicki Palace, The Old Orangery, Temple of Diana, Egyptian temple, Chopin monument, etc. Near the park you can find The Belweder.

SIGHTSEEING

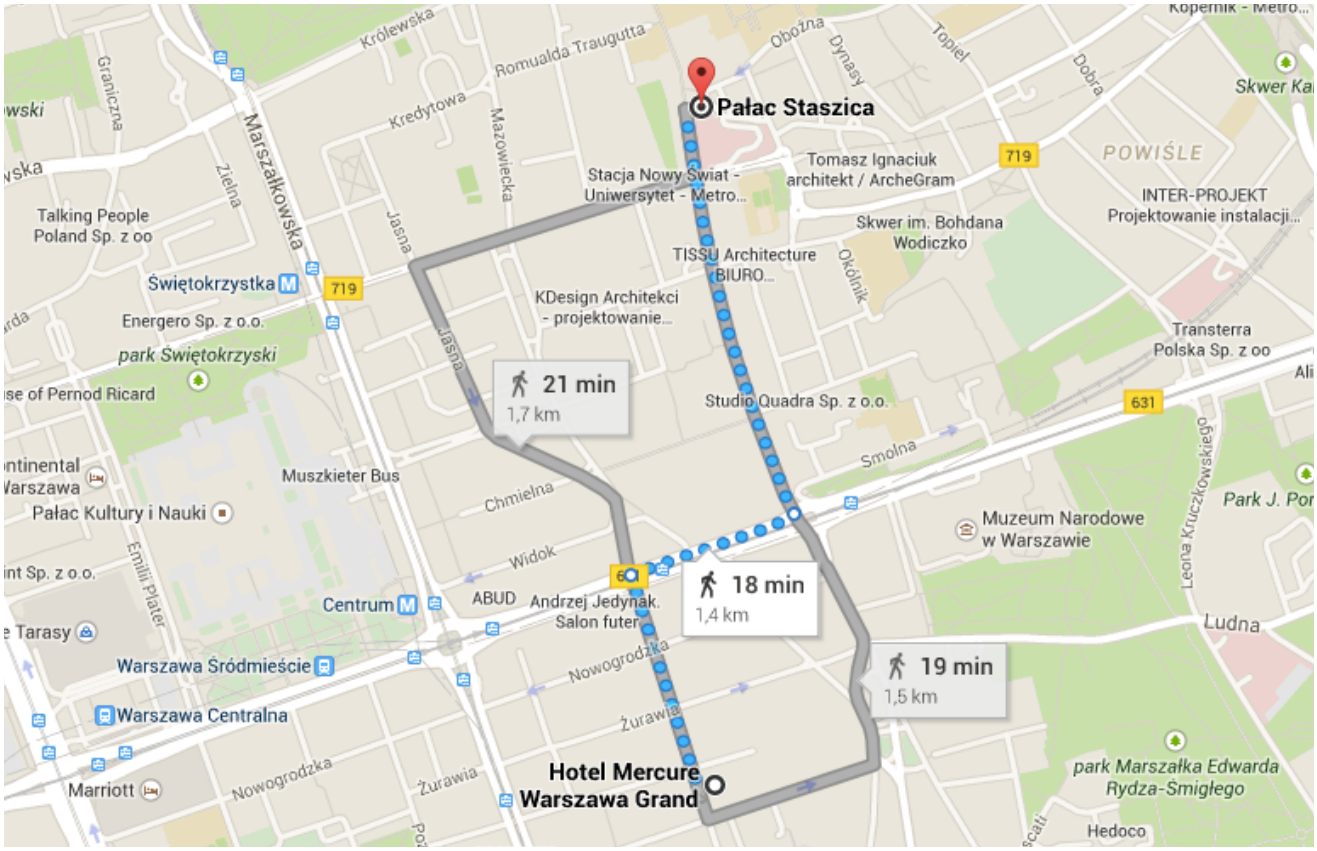
ROYAL CASTLE (3km)

It was the official residence of the Polish monarchs. Located in the Castle Square at the Old Town. In 1791 The Constitution of 3 May was drafted here. After World War II devastation, castle was rebuilt and reconstructed. At the moment it is a national museum.

NATIONAL MUSEUM (0,5 km)

It comprises a rich collection of ancient art, also Polish and foreign painting, numismatic collections and Chinese art.

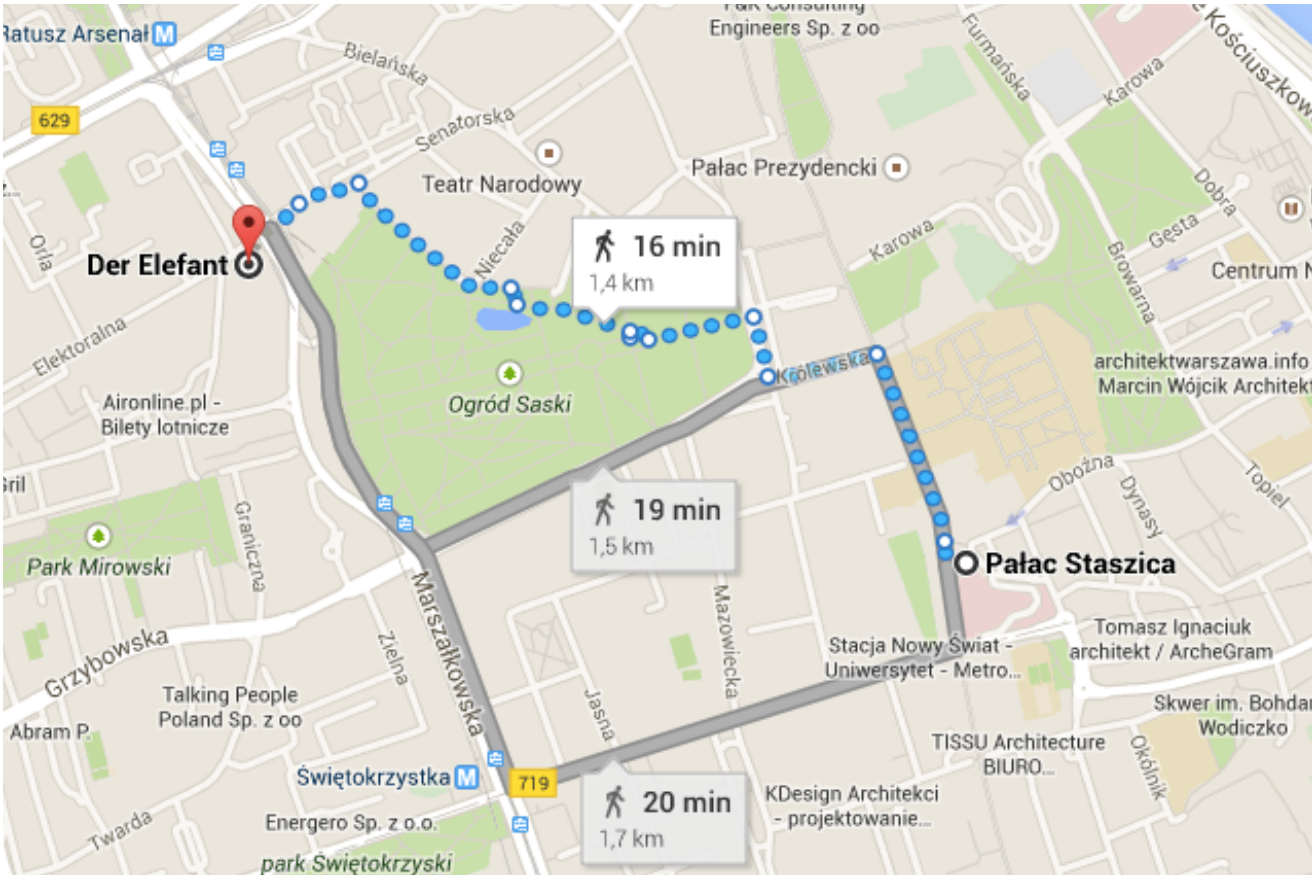
LOCATIONS



Mercure Warszawa Grand Hotel , address: 28 Krucza Street, Warsaw

Pałac Staszica (Staszic Palace), address: 72 Nowy Świat Street, Warsaw

LOCATIONS



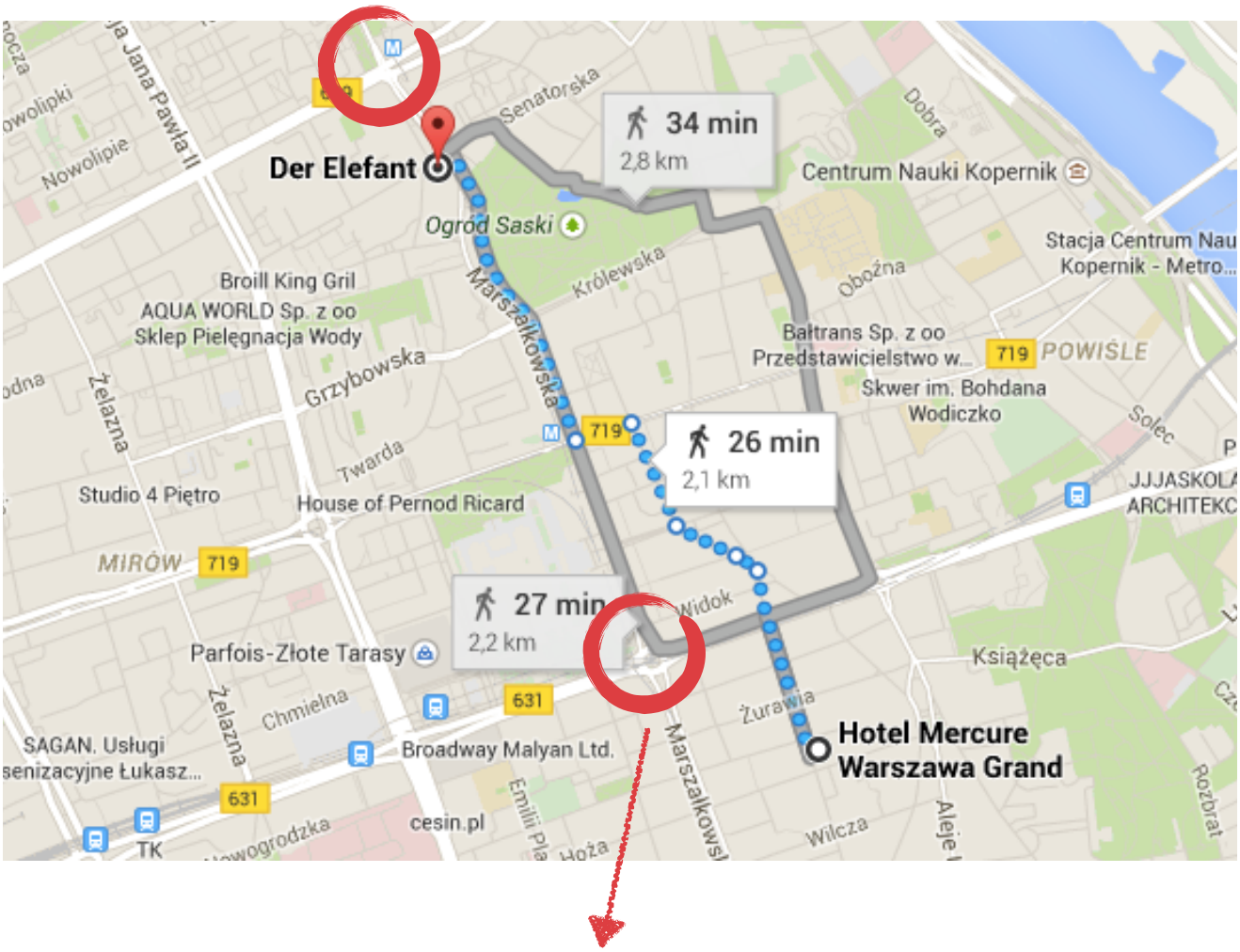
Friday, June 19th

First day of the conference we are going to have a diner at Der Elefant Restaurant.

The address is: 1 Plac Bankowy, Warsaw.

Above you can find how to get there from Palac Staszica. On the next page you can find how to get there from your hotel.

LOCATIONS



You can also take a subway from CENTRUM station to RATUSZ ARSENAŁ station (2nd stop). After getting off the station go to the south of Plac Bankowy.

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