Science Meeting – Scientific Report

The scientific report (WORD or PDF file - maximum of seven A4 pages) should be submitted online <u>within two months of the event</u>. It will be published on the ESF website.

<u>*Proposal Title*</u>: *Evaluative Conditioning: Methodological and Theoretical Advancements*

<u>*Application Reference N°:*</u> 5472

1)   Summary

In a recent ESCON expert meeting held from June 12th to 14th 2014 at the University of Tübingen, a number of pertinent experts presented recent advancements in research on evaluative conditioning. As a research paradigm devoted to the study of incidental acquisition of attitudes towards abstract and concrete concepts, objects and persons, the evaluative conditioning paradigm constitutes a central social cognitive paradigm that elicited great interest in the last 35 years. At the ESCON expert meeting 15 researchers (see appendix 4b for details) presented and discussed the recent advancements in the field. During the recent years many novel research paradigms were developed that help to reconcile conflicting findings from the past, but also raise new questions and contradictions (see below for details).

At the ESCON expert meeting, we did not only focus on recent advancements, but also on the challenges that need to be solved in the upcoming years. The meeting thus stimulated many interesting and important conceptual and theoretical issues that shall receive stronger elaboration in the future. Specifically, I was able to acquire a special issue in the relevant and recognized journal *Social Cognition*. The special issue is edited by myself and Klaus Fiedler and will specifically focus on the challenges that will need to be mastered in order to further advance the field. Furthermore, an emphasis shall be put on the integration of findings from EC research with other social cognitive research traditions.

2) Description of the scientific content of and discussions at the event

The first afternoon's talks were devoted to two talks by Sean Hughes and Jan de Houwer on a functional re-conceptualization of evaluative conditioning (EC). Throughout much of the past century psychologists have focused their attention on a seemingly simple question: how do people come to like or dislike stimuli in the environment? EC - a change in liking due to the pairing of stimuli - has been offered as one avenue through which novel preferences may be formed and existing ones altered. Although the vast majority of work in this area has been conducted by researchers who focus on the mental level of analysis, a number of their counterparts from an intellectual tradition known as Contextual Behavioral Science (CBS) have also attempted to study EC at the functional level of analysis. In this talk we aim to provide the audience with an accessible introduction to CBS in general and the functional approach to EC in particular. We highlight recent empirical and theoretical developments within the functional tradition and illustrate how a new behavioral phenomenon known as arbitrarily applicable relational responding (AARR) can contribute to cognitive research on the study of human likes and dislikes. AARR allows for the possibility that there are two types of EC: One type that is moderated by the learning history that allows for AARR (and that can thus be considered as an instance of AARR) and one type that is not moderated by that learning history (and that would thus exclude instances of EC via instruction and EC that is moderated by relational cues). Importantly, these additional distinctions (whether effects are due to regularities in the presence of two stimuli; whether EC is an instance of AARR) are functional in nature and as such neutral with regard to the mental processes that underlie EC.

The program of the next morning was devoted to novel research paradigms in EC. Christian Unkelbach and Klaus Fiedler presented a paradigm in which participants are able to spontaneously reverse the meaning of US valence. The accumulating evidence for one "side" or the other has strongly build on the assumption that propositional processes involve higher cognition while associations are mental primitives. In other words, the former has a strong "top-down" component, while the latter is due to the bottom-up structure of the environment (i.e., co-occurrences). For example, if learners observe CS-US pairings, the CSs might take upon the opposite valence of the US if the learners believe the CS is in a negative relation with the US. Yet, the affordances of the environment alone might create such negative relations, without the involvement of deliberate reasoning about the CS-US relation (i.e., propositional processes).

Yoav Bar-Anan raised the question of why EC existed in the first place and proposed a research framework that serves to investigate the functional value of EC to the organism. He reported studies that examined whether changes in the evaluation of the CS are more extreme when they facilitate effective response to the US and whether changes in evaluative response to the CS are more extreme when people can (and should) pursue the CS in order to attain the US.

Christoph Stahl then presented an analysis of criteria that can be utilized to determine the subliminality of a stimulus. He further studied EC with subliminal presentation of CSs

and strict subliminality checks. He presented a series of studies (with different presentation conditions, materials, and orienting tasks) in which he 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. This suggests that EC is not robustly and automatically found for subliminal CSs.

The next two talks by Robert Balas and Mandy Hütter revolved around different research paradigms that can be implemented to investigate the controllability of attitude acquisition via EC. While Robert Balas and colleagues utilized a task dissociation procedure, Mandy Hütter and colleagues employed a process dissociation procedure. Both research groups, however, reach the same conclusion, namely, that there are uncontrollable processes contributing to the acquisition of attitudes via EC. The results of these research groups support dual-process accounts of evaluative learning.

Another research paradigm was introduced by Marco Perugini, the self-referencing task (SR). The SR task is an effective evaluative learning procedure in which a source and a target stimuli are part of contingencies overlapping through a common response (e.g., press the same key on the keyboard upon presentation). Therefore, the SR is based on a principle of intersecting regularities. The SR task is also characterized by the use of self-related stimuli as source stimuli. Among its numerous properties, the self has a positive valence (evaluation) and is chronically salient (accessibility). In this contribution, we will first review the empirical evidence cumulated on the efficacy of the SR task in fostering evaluative change as detected by indirect and direct measures of attitudes. The results provide substantial empirical evidence that the SR task has a robust and replicable effect on both implicit and explicit attitudes for a range of targets. Moreover, the results from recent studies show that the effect of the SR task extends on some extra-evaluative cognitive functions, such as accessibility and attention. The discussion will be organized around the novel evaluative learning principle based on intersecting regularities as well as on the possibility of transferring to a target both the evaluative and the non-evaluative properties of the self.

In the next talk, Steven Sweldens did away with a myth that is still communicated by many recent social cognitive text books, namely that changing CS attitudes via evaluative conditioning procedures is more effectively achieved via forward conditioning procedures (in which CS are presented before affective entities) than via backward conditioning procedures (in which affective entities are presented before CS), but a recent meta-analysis called this into question. In the current research we re-investigate this issue empirically. Two experiments demonstrate that brand associations generated by evaluative conditioning are symmetric and bidirectional, rather than unidirectional, in nature. Evaluation measures show that backward conditioning procedures are equally effective in changing brand attitudes as forward conditioning procedures. Memory measures show that memory associations are developed in a symmetric fashion, that is, they are equally strong from the CS to the affective entities as from the affective entities to the CS, irrespective of the presentation order (forward vs. backward) of CS and affective stimuli.

Finally, Bertram Gawronski conducted high-powered studies together with his colleagues in order to address the question of whether EC is or is not resistant to extinction. Although several individual studies suggested that EC is resistant to extinction, a recent meta-analysis indicated that EC effects are reduced by subsequent unreinforced CS presentations. The disparity in research findings suggests that extinction of EC may depend on yet unidentified conditions. In an attempt to uncover these conditions, we conducted three high-powered experiments (total N = 784) investigating the influence of unreinforced CS presentations on EC effects resulting from simultaneous versus sequential pairings and pairings with single versus multiple USs. For all four types of CS-US pairings, EC effects on self-reported evaluations were reduced by unreinforced CS presentations, but only when the CSs had been rated after the initial presentation of CS-US pairings. EC effects on an evaluative priming task remained unaffected by unreinforced CS presentations regardless of post-acquisition ratings. The results suggest that reduced EC effects resulting from unreinforced CS presentations are due to judgment-related processes rather than genuine changes in the underlying evaluative representations.

The Saturday was devoted to the acquisition of generalized evaluations via EC paradigms, addresses by Adriaan Spruyt and Tina Glaser. Adriaan Spruyt conducted experiments employing CSs that were abstract (Gabor) patches that varied along two orthogonal, perceptual dimensions: spatial frequency and orientation. During the acquisition phase of the experiment, one of these dimensions was predictive of the valence of the USs and participants were asked to categorize the CSs in terms of this dimension. During the extinction phase, participants were required to judge the CSs either with respect to their valence (valence condition), the perceptual dimension that was task-relevant during the acquisition phase (relevant condition) or the perceptual dimension that was task-irrelevant during the acquisition phase (irrelevant condition). Results showed a significant reduction in the magnitude of the EC effect in the irrelevant condition only. Similarly, Tina Glaser investigated whether evaluatively conditioned attitudes toward members of a social category (CSs) would generalize to other stimuli belonging to the same social category as the CSs (generalization at the stimulus level) and to the category as a whole (generalization at the category level). In three experiments, USs were paired with CSs belonging to certain fictitious social groups. Afterwards, attitudes toward the CSs, toward non-presented exemplars of the CS category, and toward the CS category itself were assessed. As hypothesized, results revealed evidence for generalization effects in EC on both the stimulus and the category level. Participants' contingency awareness moderated the generalization effects, with greater transfer effects when contingency awareness was high.

The final talk by Olivier Corneille illuminated conceptual and empirical similarities and differences between EC and another implicit social cognitive research tradition, the mere exposure effect.

[Acknowledgement: I drew on participants' abstracts when compiling this summary.]

3) Assessment of the results and impact of the event on the future directions of the field

An immediate effect of the ESCON expert meeting consists in the intensification of existing collaborations as well as the establishment of new collaborations. Judging from myself, I got inspired to exchange ideas with scholars whom I did not have an opportunity to work with before. At the same time, existing, ongoing projects profited from the intense discussions (we devoted 20 minutes to discussion of each talk). The feedback was of tremendous quality and quantity as could have never been achieved by a session or symposium at a general social psychological conference.

Generally, I had the impression that the ESCON expert meeting increased the mutual appreciation of each other's work. In my opinion this aspect is one of the most important outcomes of the meeting. Working collaboratively instead of competitively will help us achieve more in the future, both in terms of quantity and quality of the findings.

At the ESCON expert meeting, we did not only focus on recent advancements, but also on the challenges that need to be solved in the upcoming years. The meeting thus stimulated many interesting and important conceptual and theoretical issues that shall receive stronger elaboration in a special issue that is scheduled to appear in the fall of 2016 in the journal Social Cognition. The special issue is intended to serve to establish a new and comprehensive research agenda, both in conceptual and theoretical terms as well as in the identification of unexplored topics. A special emphasis shall be given to strengthening the ties with other research areas in the field of social cognition. Concrete topics alluded to at the ESCON expert meeting are:

- Identification of the criteria for a good (i.e., inclusive, but still falsifiable) theory
- Defining conditioned and unconditioned stimuli, pairings, and their regularities
- Functional versus cognitive analysis of evaluative conditioning
- Distinguishing between different acquisition mechanisms
- Distinguishing between encoding and retrieval
- Formulation and integration of criteria for subliminality
- Dealing with demand awareness
- Conceptual and empirical comparison of evaluative conditioning and persuasion
- Conceptual and empirical comparison of evaluative conditioning and mere exposure

To sum up, evaluative conditioning constitutes a fundamental and lively research area of social cognition. With the proposed organizing principle and rigor in clarifying the concepts, theories, and methodological challenges in evaluative conditioning research, the special issue as a concrete result of the ESCON expert meeting is envisioned as a standard reference to researchers within the field of social cognition and beyond.

4) **Annexes 4a) and 4b): Programme of the meeting and full list of speakers and participants**

Annex 4a: Programme of the meeting

Thursday, June 12

15:00 – 15:30 Arrival and Registration

15:30 – 15:40 Welcome

15:40 – 16:25 *Sean Hughes & Jan de Houwer*
On how contextual behavioral science may contribute to the study of evaluative conditioning

Coffee Break

16:55 – 17:40 *Jan de Houwer, Sean Hughes, & Dermot Barnes-Holmes*
A new conceptual analysis of evaluative conditioning

19:00 Dinner: Restaurant Mauganeschtle

Friday, June 13

09:00 – 09:45 *Christian Unkelbach & Klaus Fiedler*
Contrastive CS-US relations reverse evaluative conditioning effects

09:45 – 10:30 *Yoav Bar-Anan*
Why does evaluative conditioning exist? A new framework for investigating changes in evaluative response after stimuli co-occurrence

Coffee Break

11:00 – 11:45 *Christoph Stahl & Julia Haaf*
Evaluative conditioning with subliminal CSs

11:45 – 12:30 *Robert Balas, Bertram Gawronski, & Joanna Sweklej*
Intentional control and attentional/working memory resources in evaluative conditioning

Lunch

13:30 – 14:15 *Mandy Hütter & Steven Sweldens*
Automaticity in evaluative learning: On the role of controllability in evaluative conditioning

14:15 – 15:00 *Marco Perugini & Juliette Richetin*
Beyond evaluative conditioning: Effects of the self-referencing task on evaluative change and extra-evaluative processes

Coffee Break

15:30 – 16:15 *Steven Sweldens, Jeehye Christine Kim & Mandy Hütter*
The symmetric nature of affective brand associations: Functional equivalence of forward versus backward evaluative conditioning

16:15 – 17:00 *Bertram Gawronski, Anne Gast, & Jan De Houwer*
Is evaluative conditioning really resistant to extinction?

18:00 Punting Trip

19:30 Dinner: Neckarmüller

Saturday, June 14th

09:30 – 10:15 *Adriaan Spruyt*
On the impact of feature-specific attention allocation on the generalization and extinction of recently acquired likes and dislikes

10:15 – 11:00 *Tina Glaser & Dieta Kuchenbrandt*
Generalization effects in evaluative conditioning: Evidence for attitude transfer effects from single exemplars to social categories

Coffee Break

11:30 – 12:15 *Olivier Corneille*
Striking commonalities between evaluative conditioning and the mere exposure effect

Lunch

13:15 – 14:00 Discussion Round

Annex 4b: Full list of speakers and participants

Robert Balas
Institute of Psychology PAS & Warsaw School of Social Sciences and Humanities, Poland

Yoav Bar-Anan
Ben-Gurion University, Israel

Olivier Corneille
Catholic University of Louvain, Belgium

Jan De Houwer
Ghent University, Belgium

Klaus Fiedler
University of Heidelberg, Germany

Bertram Gawronski
University of Texas at Austin, USA

Tina Glaser
University of Bielefeld, Germany

Sean Hughes
Ghent University, Belgium

Mandy Hütter
University of Tübingen, Germany

Marco Perugini
Department of Psychology, University of Milan-Bicocca

Adriaan Spruyt
Ghent University, Belgium

Christoph Stahl
University of Cologne, Germany

Steven Sweldens
INSEAD, France

Christian Unkelbach
University of Cologne, Germany

Michaela Wänke
University of Mannheim, Germany

Note: Anne Gast and Eva Walther were initially scheduled to take part in the meeting. However, they cancelled their participation on short notice due to the recent birth of a child and sickness, respectively.