

Affect & Emotion

Newsletter of the NCCR Affective Sciences

THE POWER OF EMOTIONAL STIMULI



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Beyond fear - Tobias Brosch finds that baby faces get as much attention as spiders and snakes.

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RESEARCH FOCUS

That baby caught my eye...

In my research, I investigate how emotional stimuli can very rapidly attract our attention, writes TOBIAS BROSCHE of the NCCR. Imagine, for example, that as you go down to your basement to fetch a bottle of milk, you suddenly become aware of a big, hairy spider sitting on the wall.

The brain can detect such menacing stimuli very quickly, which helps you to react appropriately to the situation. The capacity of fast threat detection has probably developed during human evolution, and is critical for our survival.

In my research, I am looking into the hypothesis that not only negative stimuli, but actually all stimuli that are of biological importance attract attention. This idea is based on psychological theories of emotion which predict a general mechanism for the appraisal of the environment and its potential effects on our goals, needs, and well-being. According to these theories, we should not only be especially sensitive to potential threats, but also to opportunities which help us to grow and to develop. To investigate this idea, I use pictures of babies, a strong positive biological stimulus. From an evolutionary point of view, it is just as important for the survival of the human species to pay attention to babies and their well-being as it is to flee from spiders and snakes.



Figure 1: Eye catcher – the brain of adults is tuned to pay attention to babies

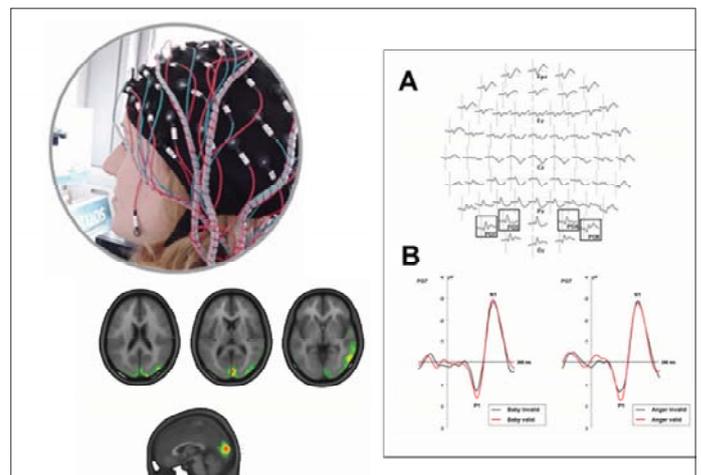


Figure 2: Using EEG to track the brain activity that underlies attention capture by baby stimuli

Using the so-called dot probe paradigm, an experimental method that taps into the spatial allocation of attention, my colleagues and I were able to show that pictures of babies attract attention, just as negative threatening stimuli like spiders or angry faces do. In a second experiment, we used electroencephalography (EEG) to record the brain activity of our subjects. Confirming the results of the first study, we found that the babies attracted attention just as rapidly as threatening stimuli did, and that the same brain structures seem to be involved in this process for both positive and negative stimuli.

Thus, we were able to show that our brains help us not only to pick out threatening events from the environment, but also to be especially aware of positive stimuli – like babies. ■

See our recent publications:

Brosch, T., Sander, D., & Scherer, K.R. (2007). That baby caught my eye... Attention capture by infant faces. *Emotion*, 7, 685-689.

Brosch, T., Sander, D., Pourtois, G., & Scherer, K.R. (in press). Beyond fear: Rapid spatial orienting toward positive emotional stimuli. *Psychological Science*.

INTERVIEW

Affective science meets human resources



Tanja Wranik, one of the senior NCCR researchers, spoke to Terence MacNamee about a new Master of Advanced Studies program in human resource management which will apply affective sciences research to the business of managing people in organizations.

TMcN: Tell us about the master of advanced studies program in human resource management.

TW: The MAS is a new academic program structured within the European Union's overarching Bologna agreement, and brings together specialists from the three major universities in the French-speaking part of Switzerland: University of Geneva, University of Lausanne, and University of Neuchatel. Broadly speaking, the program deals with human factors in organizations, and prepares both technical and non-technical employees for a career in human resources or organizational behaviour. It should be noted that not only academic, but also industry interests, were taken into consideration when the program was created. Consequently, to get into the program, students need to have either a "licence" or a "master" in any faculty, but also need at least two years' experience in a relevant area of human resources or organizational behaviour.

TMcN: What is your contribution to this master's program?

TW: First, I am one of the Scientific Committee members. The task of this committee is to review applications and maintain high standards of teaching and learning. Second, I am teaching two courses. The first one is in the first (general) year of the program: "Organizational Behaviour". This is a course about how people behave in organizational settings. It includes elements of social psychology,

emotions in organizations, motivating people, teamwork (and how to motivate and reward it), leadership, and decision-making. In other words, this is a general course of psychology applied to work organizations. The other course I teach is in the second year of the MAS within the HR specialization: the course is called "Quality of working life", and focuses primarily on emotions, stress, conflict, and well-being on the job.

TMcN: What does this master's program contribute to the business world?

TW: Business basically means working with people. Human Resource Management and people management are very broad areas requiring an interdisciplinary approach. The MAS does this by bringing together experts in several fields, including psychology, business, sociology, education, and law. We also plan to invite numerous guest speakers from industry and academia. One of the aims of the program is to teach people to question existing practices and to think out of the box. We will also attempt to teach students based on the latest scientific findings, and to discuss how current knowledge can be transferred into practice. We all hope that this program will have appeal for the business community. It developed out of an earlier certificate program in human resource management that was well respected. Moreover, half of our Scientific Committee comes from industry and the other half from academia. This is just one of the measures

to insure that both industry interests and academic standards are maintained.

TMcN: What can the affective sciences contribute to human resource management?

TW: Several people from the NCCR are involved in this program and the research conducted by NCCR member teams could influence the course content and structure. For example, both Franziska Tschan and Marianne Schmid-Mast are teaching courses. Just to mention a few topics that could be important for what we will teach: the work on stress, satisfaction, and well-being undertaken by the Tschan & Semmer project, the research on work-life balance by the Perrez & Reicherts group; the research on cooperation and trust by the Fehr group; and the international "Grid" study on the meanings, norms, and rules concerning emotions in different cultures conducted by the Scherer group. Some of my own research could also be of interests to students: for example, the research on emotions and financial investment decision-making, or the work on emotions and organizational citizenship behaviour in the hotel industry. Finally, the research we conducted with the international federation of crisis-lines (IFOTES) should provide input concerning emotions, anger, and anxiety in the workplace. I am confident that the affective sciences will have no shortage of ideas to contribute to human resources management and organizational behaviour in the years to come. ■

NEWS

Events

On Monday, October 1, 2007, a delegation of researchers from the NCCR for Affective Sciences went on a day's study outing to our neighbouring canton of Valais. A meeting took place between researchers of our Centre and those of NCCR IM2 (Interactive Multimodal Information Management) at Martigny, a research centre specializing in man-machine interaction. Topics for common investigation were suggested, such as applying methods and categories for encoding of body movements and vocal gestures, evaluation of the influence of emotions during business meetings, and sharing our GeMEP database. A more detailed agreement

is to be discussed shortly as part of the organization of a common winter school. Our group of thirty researchers then travelled to the Château de Villa in Sierre for a "multi-sensory" wine-tasting organized by Anne-Claude Luisier, Professor at the Haute Ecole valaisanne.

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For upcoming events at the NCCR, see our website www.affective-sciences.org/events

"Thumos" is the new name of the philosophy seminar group. This group (which works on project 10 of the NCCR) just opened a new website. The address of the site is www.unige.ch/lettres/philos/thumos/Thumos/Accueil.html ■

JUST OFF THE PRESS

Fontaine, Johnny R.J., Scherer, Klaus R., Roesch, Etienne B., and Phoebe C. Ellsworth: "The World of Emotions Is Not Two-Dimensional": *Psychological Science* 18, 12 (2007): 1050-1057.

Emotion researchers have attempted to establish the dimensional space that most economically accounts for similarities and differences in emotional experience. Today, many researchers focus exclusively on two-dimensional models involving valence and arousal. The NCCR researchers and their colleagues – using an innovative theory-based semantic profile -- show for three languages that four dimensions (valence, power, arousal, and predictability) are needed to satisfactorily represent similarities and differences in the meaning of emotion words.

Meanwhile, in *Social Science Information* 46, 3 (2007) pp. 381-443, distinguished emotion researcher Nico Frijda has commented on Klaus Scherer's definition of emotions and gathered the evaluations of ten other outstanding emotion researchers in different disciplines. ■

Achievements

Prof. Theodor Landis, co-leader of project 3 (neural architecture) has been awarded the Théodore Ott prize together with Prof. Reinhard Stocker of the University of Fribourg. This award from the Swiss Academy of Medical Sciences recognizes the excellence of their work and their contribution to the field of neuroscience. Dr Théodore Ott (1909-1991), who was professor of neurology at Lausanne, made a bequest to endow this prize of 50 000 CHF, which recognizes outstanding work on basic research in neurosciences, and which is awarded every five years.

Delphine Courvoisier won the Gustav-Lienert Prize for the best dissertation (given by the German Psychological Association - Methodology and evaluation group)

Our Director Klaus Scherer has been elected a Fellow of the Association of Psychological Science in the United States. The Association for Psychological Science (previously the American Psychological Society) is dedicated to the advancement of scientific psychology and its representation at the national and international level. The Association's mission is to promote, protect, and advance the interests of scientifically oriented psychology in research, application, teaching, and the improvement of human welfare. See www.psychologicalscience.org

Prof. Ernst Fehr of the Institute for Empirical Research in Economics at the University of Zurich, who leads project 9 (social norms) has been elected an honorary foreign member of the American Academy of Arts and Sciences. Prof. Klaus Scherer is already a member of this body; he was elected in 2000. Founded in 1780, the American Academy of Arts and Sciences is an independent policy research center that conducts multidisciplinary studies of complex and emerging problems. The Academy's elected members are leaders in the academic disciplines, the arts, business, and public affairs. There are 4000 American Fellows and 600 Foreign Honorary Members. See www.amacad.org

Gilles Pourtois, Roland Vocat, and Patrik Vuilleumier have won a research award from the Evens Foundation to study "conflict behaviors and the brain". See www.evensfoundation.be/en/whatwedo_science_challenge.html ■

NEWS

Staff changes

On July 31 2007, administrative assistant Sylvie Staehli left to work for the Swiss Institute of Bioinformatics ; she has been replaced by Audrey Souchard.

On August 31 2007, postdoc Astrid Hopfensitz left to become a Maître de conférences in the social science department at the University of Toulouse 2. Mathieu d'Acremont, maître assistant on project 7 (emotion regulation), left to take up a new position at EPFL in Lausanne.

On September 1 2007, Ralph Schmidt joined us as a maître assistant working on project 7 (emotion regulation) with

Martial Van der Linden. Cristina Soriano joined us as a postdoctoral fellow, working on the Grid study, and also in collaboration with David Sander; she is a cognitive linguist from the University of Murcia (Spain). Ruthger Righart joined us as a postdoctoral fellow working on project 3 (neural architecture) with Patrik Vuilleumier. Thomas Cochrane joined us as a postdoctoral fellow working on the aesthetic emotions focus with Patrizia Lombardo.

On October 1 2007, Benoît Bediou joined us as a postdoctoral fellow on project 1 (Elicitation) with Klaus Scherer. Postdoctoral fellow Raffaele Rodogno has left us

to take up a fellowship at Harvard. Delphine Courvoisier left us at the end of October to join the faculty of medicine of the University of Geneva as a Maitre assistante.

On November 15 2007, Anna Ogarkova joined us as a postdoctoral fellow in the Research Focus Language and Culture working on the semantics of emotion words. Eva Krumhuber joined us as a doctoral student working on Project 2 (Response Patterning).

For vacancies at the NCCR, see our website www.affective-sciences.org/positions ■

Publications

Aue, T., Flykt, A., & Scherer, K.R. (2007). First evidence for differential and sequential efferent effects of goal relevance and goal conduciveness appraisal. *Biological Psychology*, 74, 347-357.

Billieux, J., Van der Linden, M., d'Acremont, M., Ceschi, G., & Zermatten, A. (2007). Does impulsivity relate to perceived dependence and actual use of the mobile phone? *Applied Cognitive Psychology*, 21, 527-537.

Billieux, J., Van der Linden, M., & Ceschi, G. (2007). Which dimensions of impulsivity are related to cigarette craving? *Addictive Behaviors*, 32, 1189-1199.

Borgeaud, Philippe (2007) Rites et émotions. Considérations sur les mystères, in: Rites et croyances dans les religions du monde romain, *Entretiens sur*

l'Antiquité classique tome LIII, *Vandoeuvres-Genève*, Fondation Hardt, p. 189-229.

Borgeaud, Philippe (2007) Variations grecques sur l'origine (mythique) du langage, in: *Origines du langage*. Une encyclopédie poétique, sous la direction d'Olivier Pot (revue *Le Genre Humain* 45-46), Paris, Seuil, p. 73-100.

Grandjean, D., Rendu, A.-C., Scherer, K.R. (2007). La colère des dieux ou le sens donné aux catastrophes. *Scénario Catastrophe*, Musée d'ethnographie, coll. tabou No 4.

Johnstone, T., van Reekum, C. M., Bänziger, T., Hird, K., Kirsner, K., Scherer, K. R. (2007). The effects of gain versus loss and difficulty on vocal physiology and acoustics. *Psychophysiology*, 44, 827-837.

Kreibig, S.D., Wilhelm, F.H., Roth, W.T., Gross, J.J. (2007). Cardiovascular, electrodermal, and respiratory response patterns to fear and sadness-inducing films. *Psychophysiology*, 44(5), 787-806.

Mobbs, O., Van der Linden, M., Golay, A. (2007). L'impulsivité: Un des facteurs responsables de l'obésité? *Revue Médicale Suisse*, 3, 850-853.

Pourtois, G., Peelen, M.V., Spinelli, L., Seeck, M., and P. Vuilleumier (2007). Direct intracranial recording of body-selective responses in human extrastriate visual cortex. *Neuropsychologia* 45, 11, 2621-2625.

Sander, D., Grandjean, D., Kaiser, S., Wehrle, T., & Scherer, K.R. (2007). Interaction effects of perceived gaze direction and dynamic facial expression: Evidence for

appraisal theories of emotion. *European Journal of Cognitive Psychology*, 19(3), 470-480.

Scherer, K. R. (2007). Component Models of Emotion Can Inform the Quest for Emotional Competence. In G. Matthews, M. Zeidner, and R. D. Roberts (Eds.), *The Science of Emotional Intelligence: Knowns and Unknowns*. (pp. 101-126). New York: Oxford University Press.

Scherer, K. R. , & Ellgring, H. (2007). Are facial expressions of emotion produced by categorical affect programs or dynamically driven by appraisal?. *Emotion*, 7(1), 113-130.

Scherer, K. R. , & Ellgring, H. (2007). Multimodal Expression of Emotion: Affect Programs or Componential Appraisal Patterns? *Emotion*, 7(1), 158-171.



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For further information on our work, see our website www.affective-sciences.org