

# Affect & Emotion

Newsletter of the Swiss Center for Affective Sciences



## AFFECT, EMOTION AND VIRTUAL REALITY

### RESEARCH FOCUS

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## EDITORIAL



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The year 2019 was again an important year for our Swiss Center for Affective Sciences.

First of all, I am proud to announce that Dr Thibaud Gruber and Dr Ulrike Rimmele just received SNSF Eccellenza fellowships in order to work with us. They will start in 2020. Thibaud will develop his comparative research, in particular concerning the socio-emotional determinants of tool use in non-human and human primates. Ulrike will develop her work on the effects of emotion and stress on learning and memory across the life span.

I am also pleased to announce that four of our researchers obtained SNSF project grants from three different divisions of the SNF, reflecting our interdisciplinary endeavour. One of these projects is featured in the main article of the current newsletter. In it Prof. David Rudrauf speaks of his research and gives examples of the use of VR in various research projects, including collaborations with the HUG (Hôpitaux Universitaires Genève) and the Geneva Police. As can be seen in the “awards and grants” section of the newsletter, we are also very happy to welcome various other projects, and we congratulate several of our members for the awards received.

Numerous events are coming up in the Affective Sciences in the next months. For example, you should not miss: the **International Summer School in Affective Sciences (ISSAS)**, which will welcome leading scholars and young researchers from varied disciplines working on the topic of positive emotions and well-being. ISSAS will take place at Château de Bossey on July 2-10, 2020.

I also warmly invite you to attend the **Alpine Brain Imaging Meeting 2020** that will take place in Chambéry from January 12 to 16, 2020. Note also that our next Annual Research Forum (ARF 2019) will take place on February 4-5, 2020 at Campus Biotech, in Geneva.

Last but not least, I am pleased to announce that the Center will take part in the next outreach science event “Nuit de la Science”, on July 4, 2020. This science fair is always a great opportunity to interact with our researchers and discuss with them about their current research projects.

I am looking forward to meeting many of you during these events.

At the end of a year rich in accomplishments, 2020 is already looking very promising!

I wish you all a great end of the year period, and already a Happy New Year!

David Sander ■



## NEWS FROM VIRTUAL REALITY

Prof. David Rudrauf

With its power of immersion and innovation potential, Virtual Reality (VR) has become a central tool across the spectrum of the affective sciences, from basic research, through clinical, educational and professional applications, to philosophical reflections and public mediation. The Swiss Center for Affective Sciences is at the forefront of such research. As part of the effort, we recently created the Laboratory of Multimodal Modeling of Emotion and Feeling (MMEF), which designs, exploits and applies VR, with a multidisciplinary and collaborative spirit.

We built over the past three years a dedicated VR lab space on Campus Biotech, which offers students, lab scientists, and collaborators, a playground and workspace for experimenting. We developed the Virtual Lab, a software allowing collaborators with no programming and technical background, including psychology and neuroscience master students at the University of Geneva, to design and program VR experiments graphically (see lab website). Collaborators can generate environments, contents (objects, animals, people), animate them as a function of experimental conditions, gather subjective ratings on virtual tools, and collect motion and physiological data.

The MMEF lab primarily centers on basic affective science. For instance, Dr. Ben Meuleman developed an original line of research to study and model the mechanisms of appraisal and emotion regulation using VR. He confronts participants with a virtual pit to study how objective depth, the subjective sense of danger and emotional experiences relate to one another. The main lab project combines computational modeling and VR to study the psychological determinants of human behaviors, such as approach-avoidance, in normal and pathological contexts. It uses a model of embodied consciousness developed in the lab, which we implement in artificial agents. VR is used to test quantitative predictions from simulations empirically based on real human behaviors. Ph.D. student Teerawat Monnor focuses his research on developing the VR protocols. Results from initial simulations by senior research and teaching fellow Dr. Manik Bhattacharjee are promising. An advanced version of this innovative VR-modeling tool is under active development, thanks to recent financial support from the Swiss National Science Foundation.

The MMEF Lab, with a strong role of Assistant and VR expert Dr. Yvain Tisserand, also develops collaborative research in a variety of clinical and professional contexts.

We collaborate with Dr Cyril Sahyoun and nurse Stéphanie Mermet from the HUG Pediatric Emergency Department, and Prof. Corrado Corradi Dell'Acqua (Unige), to develop, validate and deploy VR environments at the hospital, aimed at mitigating pain and anxiety in children undergoing emergency procedures. We collaborate with the Geneva Police Training Center to implement advanced VR training tools for police officers fostering the integration of tactical and affective skills. Our prototype immerses two police trainees simultaneously in a virtual neighborhood of Geneva, to practice police interventions. An instructor at a monitoring station controls the scenarios, performs replays to coach the trainees, and targeted scores are derived. Séolane Bouchoucha, Ph.D. student in the lab and psychologist at the Geneva Police plays a central role in this research. We also use VR to raise awareness and promote change of behaviors in relation to sustainability, in collaboration with Prof. Tobias Brosch's lab (Unige), and the Geneva Tsinghua Initiative program. We immerse participants in simulations of possible future scenarios of global warming, from very negative scenarios (+5 degrees) to better ones (+1.5 degrees). We develop protocols to experimentally study the impact of VR exposure on participants' willingness to perform tasks that require an effort but could make an environmental difference.

Closer to the City, we develop a variety of initiatives to communicate with the general public, including residencies of artists and public events. For instance, the MMEF lab, along with Carole Varone (CISA knowledge transfer officer), recently led a collaboration with sculptor Vincent Dubois, philosopher and mediator Luca Depietri, scenographer Marion Duvall, and the Hermitage Foundation in Lausanne. The lab hosted a guided tour straddling art history, philosophy, science, and performance, of the new Hermitage's exhibit Ombres, around the theme of consciousness as a virtual reality, revealing surprising marble sculptures designed in VR to represent subjective perspective in the real world.

Finally, VR is central to our most futuristic endeavors at the MMEF lab: robotics, as a framework for synthetic psychology; developed through a strong joint collaboration with the Centre Universitaire d'Informatique, and European consortiums. Our little robots imagine the consequences of their own actions and those of others in VR before acting in reality. As a result, they demonstrate complex emergent behaviors of social approach and joint attention. ■



## Completed PhDs

**Olivia Döll** successfully defended her PhD thesis entitled “Four Essays in Behavioral Economics and Information Security” on July 10, 2019, under the direction of Prof. Kerstin Preuschoff and Dr. Thomas Maillart

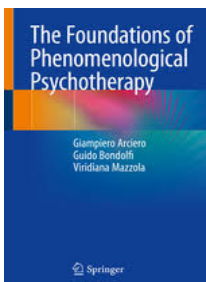
**Jasmin Mahmoodi** successfully defended her PhD thesis “Applying insights from behavioural economics to nudge sustainable consumer choices” on December 5, 2019, under the direction of Prof. Tobias Brosch.

**Amaya Palama** successfully defended her PhD thesis on « La perception intermodale (audio-visuelle) des expressions émotionnelles (joie, colère, peur ou dégoût) chez les bébés âgés de 1 à 6 mois et les enfants âgés de 5 à 10 ans : apports de l’oculométrie » on September 13, 2019, under the direction of Prof. Edouard Gentaz.

**Simon Schaerlaeken** successfully defended his PhD thesis on “Being moved by music: literally and figuratively” on September 12, 2019, under the direction of Prof. Didier Grandjean and Dr. Donald Glowinsky.

**Yoann Stussi** successfully defended his PhD thesis on “Relevance detection as a psychological determinant of emotional learning” on 15 May, 2019, under the direction of Prof. David Sander and Prof. Gilles Pourtois. ■

## NEW BOOKS /SPECIAL ISSUES



**The Foundations of Phenomenological Psychotherapy.** Giampiero Arciero. Guido Bondolfi. Viridiana Mazzola. (2019)

Springer (2019).

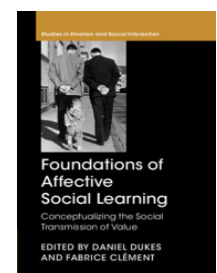
<https://www.springer.com/gp/book/9783319780863> ■

**Foundations of Affective Social Learning.**  
**Conceptualizing the Social Transmission of Value.**

Part of Studies in Emotion and Social Interaction. Cambridge University Press. (2019).

Daniel Dukes, Université de Fribourg, Switzerland

Fabrice Clément, Université de Neuchâtel, Switzerland



<https://www.cambridge.org/gb/academic/subjects/psychology/social-psychology/foundations-affective-social-learning-conceptualizing-social-transmission-value?format=HB&isbn=9781108473194#bookPeople> ■

## Awards and grants

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**Tobias Brosch and Ulf Hahnel** were granted a 4 year project by the Services Industriels de Genève entitled “Public Attitudes toward Geothermal Energy Projects in Geneva (PAGE2): From public concerns and warning signals to communication solutions” (2019-2023).

**Boris Cheval** was granted a 2 year Ambizione SNSF Fellowship for his project entitled “Behaviors minimizing energetic cost: A reward? » (2019-2021).

**Didier Grandjean** was appointed Full Professor in Psychology at the Faculty of Psychology and Educational Sciences at the University of Geneva in August 2019. He also was granted a 4 year SNSF project entitled “Influence of peripheral information on behavioural and spatio-temporal neural mechanisms of vocal emotion production and perception” (2019-2023).

**Frédéric Grouiller** was granted a 2 year SNSF project entitled “Real-Time multimodal imaging of functional brain networks using simultaneous EEG and fMRI acquisitions” (2020-2022)

**Thibaud Gruber** was granted a SNSF Eccellenza grant for his project “Why do we use tools? Investigating the drivers of tools use in non-humans and humans” (2020-2024). He also received on November 2019 a grant from the National Geographic Society Committee for his work on “Filling the gap: Documenting behavioral patterns of Bugoma chimpanzees, Western Uganda”.

**Steve Humbert-Droz** obtained the prize of the Outstanding Student Paper for “Aesthetic properties without perception” at the 77th Meeting of the American Society for Aesthetics in October 2019.

**Arturs Logins** was granted a 4 year SNSF Ambizione fellowship entitled “Graded Epistemology” (2020-2024).

**Michele Davide Ombrato** was granted a 9 month scholarship by the Fondation Ernst & Lucie Schmidheiny (2019).

**Ulrike Rimmele** obtained an SNSF Eccellenza grant for her project “How emotion, stress and their regulation shape and alter episodic memories across the life span.” (2020-2024).

**David Rudrauf** received a 36 month SNSF grant for his project “Implementation of artificial affective agents capable of complex emotion and social perspective taking in virtual reality for behavioral science” (2019-2022).

**David Sander, Eran Halperin, Olga Klimecki & Patricia Cernadas Curotto** were granted a 2 year UNIGE-HUJI Joint Seed Money Funding Scheme 2019 grant entitled “Compassion training in intractable conflict” (2019-2021).

**David Sander** obtained a 2 year SNSF grant entitled “Socio-emotional competences and academic performance in adolescents: a comparative evaluation of mindfulness meditation, improvisation theatre and board games interventions at school” (2020-2022).

**Yoann Stussi** was awarded the Young Scientist Award from the Swiss Psychological Society (SSP). The SSP awards every two years a young researcher for their outstanding scientific work in the field of psychology.

**Noémie Treichel** obtained the “Best Short Talk Award” at the 2019 conference of the Swiss Psychological Society (SPS) in Bern for her talk “The influence of cognitive, social and emotional phenotypes on the sense of humor: The case of Autism Spectrum Disorder and Williams syndrome”. ■

**Alpine Brain Imaging Meeting (ABIM), Champéry**

(January 12-16, 2020). The 15th edition of ABIM will take place in Champéry (Switzerland). The program and details for registration are available at <https://www.unige.ch/ABIM/>

**Le pouvoir émotionnel des odeurs, Musée de la main UNIL-CHUV, Lausanne**

(February 15, 2019 - February 23, 2020). The exhibition « Quel flair ! Odeurs et sentiments » is a collaboration between the Swiss Center for Affective Sciences and the Musée de la Main UNIL-CHUV in Lausanne. In the framework of this exhibition, a lecture series is programmed : January 14, 2020 with Prof David Sander and February 4, 2020 with Dr Camille Ferdenzi. Guillaume Legendre will lead a workshop on February 13, 2020 during the Night of the Museums. <https://www.museedelamain.ch/>

**Le Théâtre des émotions, Theatre Forum de Meyrin, Geneva**

(Season 2019-2020). The theater invited the Swiss Center for Affective Sciences to reflect on some plays presented through the theatrical season. Conferences and meetings with the public are also scheduled throughout the season : January 22, 2020 with Prof David Sander; February 20, 2020 with Prof Florian Cova; March 27, 2020 with Prof Didier Grandjean, and May 5, 2020 with Dr Alison Montagrin <https://www.forum-meyrin.ch/le-theatre-des-emotions>

**De l'Amour, Palais de la Découverte, Paris**

(October 8, 2019-August 30, 2020). The Swiss Center for Affective Sciences is the scientific partner of this exhibition on love. The exhibition questions this mysterious feeling, convening contemporary scientific works in biology, neuroscience, psychology, and artistic expression. <http://www.palais-decouverte.fr>

**Annual Research Forum 2020 (ARF), Geneva**

The next edition of the Annual Research Forum will take place on February 4-5, 2020 at the Campus Biotech in Geneva. The ARF offers the opportunity to meet peers (old and new) and get updated on the fascinating research carried out at the Center, and the last logistic developments.

**SciFilmIt Hackathon, Zurich, Basel & Lausanne**

SciFilmIt Hackathon Geneva will take place at Campus Biotech on March 13-15, 2020. The 3-day hackathon will allow participants to learn about communication, enjoy inspiring seminars and create short films about science. Applications are accepted from early January 2020, and members of the SDS for Affective Sciences obtain 1 credit for participation. More information about the hackathon at [www.scifilm.it](http://www.scifilm.it).

**Knowledge and its Limits at 20, Geneva**

(May 14-15, 2020). A conference organized by Prof Fabrice Teroni and Dr Arturs Logins on knowledge-first epistemology. Further information on <https://www.unige.ch/lettres/philo/collaborateurs/corps-intermediaire/associates/arturs-logins/knowledge-and-its-limits-20/>

**Bundesverbandstag Williams-Beuren Syndrom 2020, Willingen, Germany**

(May 15-17, 2020). Prof Andrea Samson will lead a workshop on emotions in individuals with Williams syndrome by the chEERS Lab.

**La Nuit de la Science, Geneva**

(July 4, 2020). This event will be organized at the Geneva park La Perle du Lac and at Campus Biotech. It is a good opportunity for Geneva residents to discover scientific activities in a convivial way.

**Montreux Jazz Festival, Montreux**

(July 3-18, 2020). Prof Didier Grandjean will participate in a workshop on music, emotion and memories at Montreux Jazz Festival in collaboration with EPFL and Ecole de Design et Haute École d'Art du Valais.

**International Summer School in Affective Sciences (ISSAS 2020), Bogis-Bossey**

(July, 2-9, 2020). The 9th ISSAS will take place at the Château de Bossey, bringing together leading scholars and promising young researchers from varied disciplines working on the topic of emotions and well-being (<http://www.affective-sciences.org/issas>). ■

## Homage to Prof. Patrizia Lombardo and Prof. Martial Van der Linden

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It is with deep sadness that we inform you of the passing of Prof. Patrizia Lombardo and Prof. Martial Van der Linden in 2019.

Our thoughts go out to their family and numerous friends.

Prof Patrizia Lombardo and Prof. Martial Van der Linden will be honoured at the Annual Research Forum (ARF) which will take place on February, 4-5, 2020 at Campus Biotech.

## On our website <https://www.unige.ch/cisa/>

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**Research materials** are available at <https://www.unige.ch/cisa/research/materials-and-online-research/research-material/>. Free of charge for non commercial research projects.

**Online Platform on Emotional Competence** at <https://www.unige.ch/cisa/research/materials-and-online-research/online-research/>, including the major contributions and debates in the literature on emotional intelligence, potential applications, as well as results of the most recent research. ■

## Other websites of interest

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**XPhi Replicability:** <https://sites.google.com/site/thexphireplicabilityproject/> The XPhi Replicability project, coordinated by Dr. Florian Cova, seeks to reach a reliable estimate of the replicability of empirical results in experiment philosophy. ■

## Publications

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## Publications

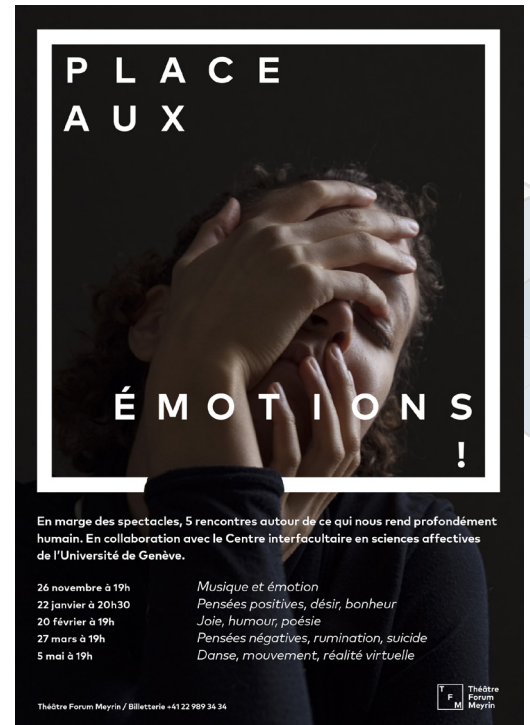
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Exposition: Quel Flair! Odeurs et sentiments!  
Lausanne - 15.12.2019 – 23.02.2020



Théâtre Forum Meyrin  
Genève - 26.11.2019 - 05.05.2020



Exposition « De l'amour »  
Paris - 08.10.2019 - 30.08.2020



Neuchâtel International Fantastic Film Festival  
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The Swiss Center for Affective Sciences is hosted by the  
Université de Genève  
Centre Interfacultaire en Sciences Affectives  
9, ch. des Mines - 1202 Genève - Switzerland  
Tel: (+41) 22 379 09 31

Editor: [carole.varone@unige.ch](mailto:carole.varone@unige.ch)

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