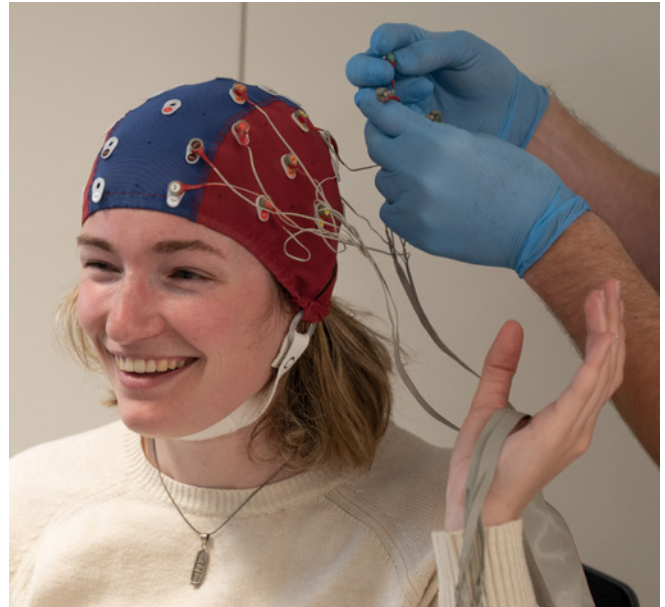


The Experience Lab

Understanding the emotions behind an experience



DISCOVER YOUR WORLD

EXPERIENCE LAB

Discover our Experience Lab!

People experience life every day from the moment they wake up until the moment they go to bed. In order to make a distinction between the experiences they want to remember and don't want to remember, people are guided by their emotions. They are even willing to pay for the way experiences make them feel, which means that emotions drive the value of leisure, tourism, hospitality, and entertainment experiences. Understanding and measuring emotions is thus important to create the best possible experience.

The Experience Lab is a state-of-the-art experience design, management and measurement facility, in which we are able to measure emotions directly from the body and the brain. Our research is driven by the interests of our institute and of our students - in the form of thesis and course assignments - or commissioned by industry partners at commercial rates.

Most of our projects contribute to solving persistent industry issues such as service quality, physical environment design, staff training, and crowding. Over time, we hope our insights will contribute to better quality experiences for everyone, eventually improving quality of life in general.

Be inspired and feel free to contact us, we will be happy to tell you what we can do for you or your company.

“

Emotions drive the value of leisure, tourism, hospitality, and entertainment experiences”



Marcel Bastiaansen
Head of the Experience Lab

Website

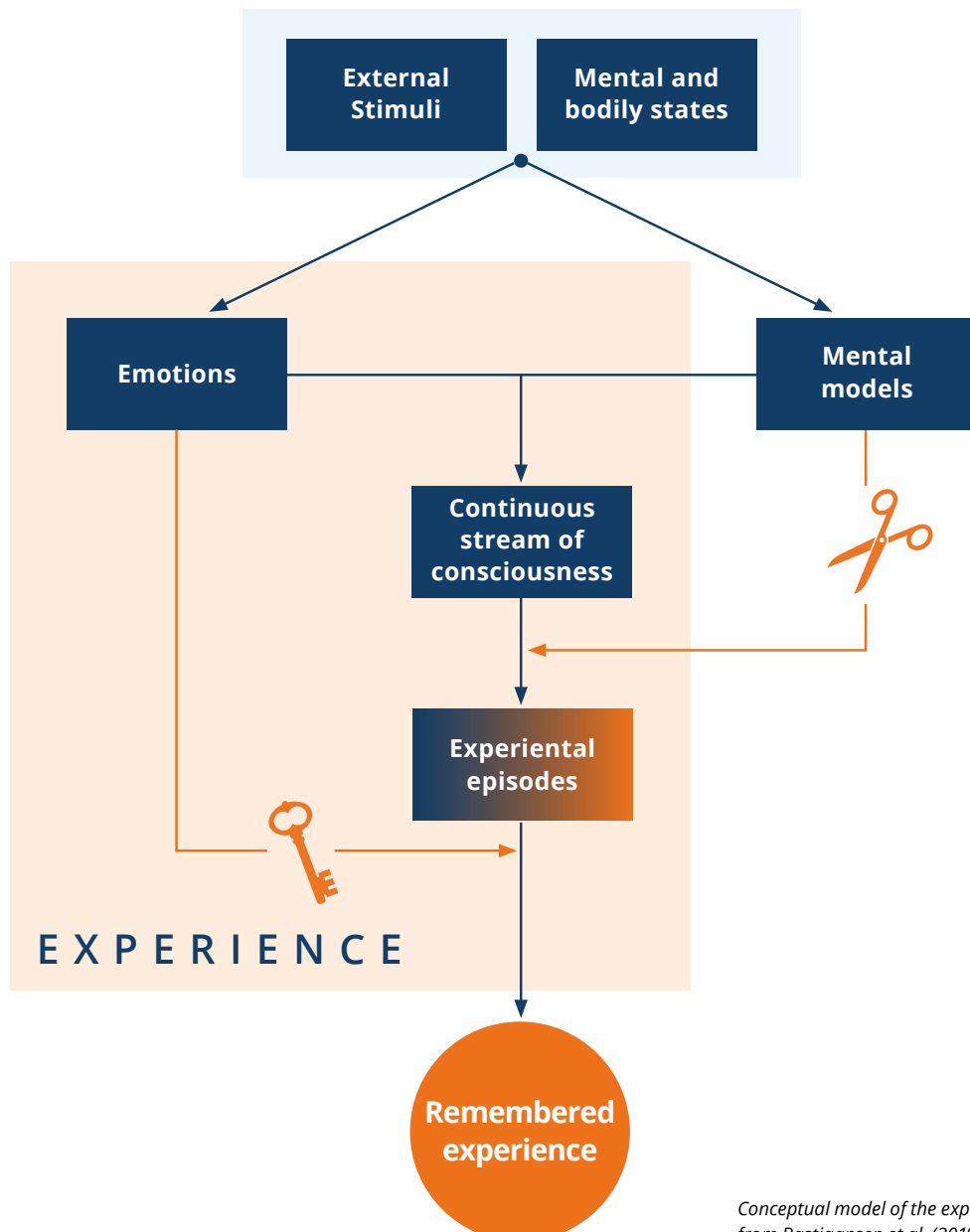
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EXPERIENCE

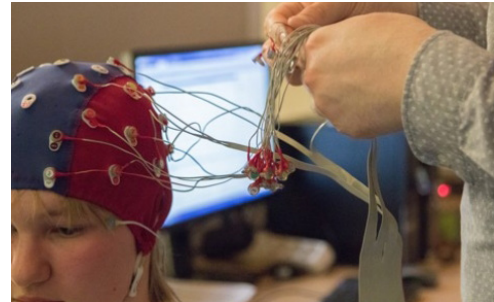
Experience Model



Conceptual model of the experience construct, from Bastiaansen et al. (2019)



EEG studies inside the Lab



Our Experience Lab features an Electroencephalography (EEG) device, which measures people's brain activity in reaction to photos, videos or websites. While sitting comfortably in our lab, participants in EEG experiments wear an elastic swim cap with electrodes registering their brain activity. These signals are amplified and recorded on a computer. When the signals are averaged over 30 or so participants, clear patterns start to emerge which reveal their emotional reactions to different marketing materials, for example. We can also simulate the experiences themselves in virtual reality, and thus measure when during a live or virtual experience people become more emotional. EEG is extremely precise in time, so we can see if a person is being emotional even before they are aware of it.

An example of the use of EEG is the Storysperience1 project in which the relationship between storytelling, experience and memory was studied. Participants were shown two videos about Vincent van Gogh that were meant to be displayed in a museum. In one of the videos the information was presented in a very factual way and delivered in a neutral tone. In the other video the information was presented as a story to evoke emotions. The emotional experience of these two videos were measured with EEG in the Experience Lab. Studies like these help to understand when people are more emotionally engaged in a museum experience. The more emotionally engaged, the better people remember an experience which can be valuable in terms of, among other things, worth-of-mouth advertising.

[See also Project 1 on page 5](#)



Wim Strijbosch

One of the researchers in the lab who is actively working with EEG is Wim Strijbosch

"In my PhD, I aim at identifying how the temporal dynamics of emotions in an experience relate to how experiences are remembered and evaluated. I have studied these processes in the context of a virtual reality film and watching artworks using EEG, and in the context of a musical theatre show using skin conductance. These signals were then related to how study participants either remembered or evaluated their experience."

[See also Project 4 on page 5](#)



Using wearables

Using smartphones and wearable wristbands outside the lab

Our Experience Lab researchers do not only stay indoors. We can go out into the field for experience measurements during actual tourism, leisure, hospitality, and entertainment experiences as well. There, we use smartphones and the Empatica E4 wearable wristbands to record signals of emotions in the body. Phones track location and allow participants to take photos. The wristbands track motion, temperature, heart rate, and most importantly, the sweating of the skin, which is extremely sensitive to emotional engagement.

Examples of projects using wearables

To measure visitor experiences in Europapark Germany, skin conductance responses were recorded during a roller coaster ride with and without VR add-on. To uncover the differences in emotional engagement, the skin conductance recorded was compared among the participants who rode the roller coaster with VR add-on and without VR add-on.

[See also Project 2 on page 5](#)

Emotional experience during a museum exhibit was measured using Empatica wrist monitors and beacons in every room of the exhibition. Mapping out emotional experiences helped in understanding the difference in emotional engagement between young adults who frequently engage in cultural activities and young adults who do not.

[See also Project 3 on page 5](#)

Multiple projects have been done testing emotional experiences on autonomous vehicles. These studies showed how comfortable people felt while using the bus. Mapping the experiences out over the road shows at which moments passengers are most at ease and when they are not.

[See also Project 6 on page 5](#)

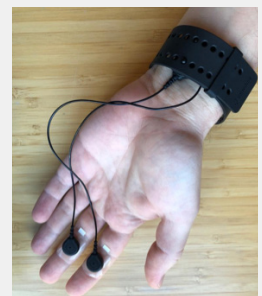


Ondrej Mitas
Senior Researcher Experience Lab



Empatica E4

The Empatica E4 wrist monitor with wires to measure from the fingers connected to it.





Earlier Projects



1 [Van Gogh Storysperience](#)



2 [Experiencing a VR roller coaster](#)



3 [JOIN: Youth in an inclusive society](#)



4 [PhD Measuring Emotions and Experiences](#)



5 [Self-driving transportation in Drimmelen](#)



6 [Experiencing Autonomic Transportation](#)



Wilco Boode
Technical facilitator Experience Lab

No lab is complete without a technical facilitator

"As the technical facilitator, I assist in developing and maintaining the technical capabilities of the lab. My activities range from building new software solutions for research, to maintaining and providing hardware used to gather data during the research projects."



Interested in what the Experience Lab can do for you?

Feel free to contact us!

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