

JAHRESBERICHT 2021

Allgemeine Psychologie und Methodologie



**Fakultät für Psychologie
Universität Basel**

JAHRESBERICHT 2021

Allgemeine Psychologie und Methodologie

Mitarbeiterinnen und Mitarbeiter der Abteilung (per 31.12.2021)

Abteilungsleitung

Prof. Dr. Klaus Opwis

Administration

Paula Giger

Assistierende

Dr. Florian Brühlmann
M.Sc. Lena F. Aeschbach
M.Sc. Sebastian Perrig
M.Sc. Nicolas Scharowski

Hilfsassistierende

B.Sc. Nick von Felten
B.Sc. Ariane Haller
M.A. Claire Reymond
B.Sc. Melanie Svab
B.Sc. Memeti Zgjim

Lehrbeauftragte

Dr. Javier Bargas-Avila (HS 2021)
Dr. Julia Martinis-Bopp (HS 2021)
Prof. Dr. Andreas Gold (FS 2021, HS 2021)
Dr. Chri Hübscher (FS 2021)
Prof. Dr. Christian Rösler (FS 2021, HS 2021)
Dr. Mirjam Seckler (FS 2021)
M.Sc. Beat Vollenwyder (HS 2021)

Kurze Chronologie des Jahres 2021

Kurzer chronologisch geordneter Gesamtüberblick über bemerkenswerte Vorkommnisse im Jahr 2021 Sicht der Abteilung für Allgemeine Psychologie und Methodologie

In der November-Ausgabe von Uni Nova (11/2021), dem Wissenschaftsmagazin der Universität Basel, wird im Beitrag *Künstliche Intelligenz räumt auf* auch auf die Themen «Transparenz» und «Vertrauen» eingegangen, und Florian Brühlmann und Nicolas Scharowski werden zitiert.

Am 1. Dezember 2021 fand in den Räumlichkeiten der Fakultät das *UX Basel Meetup* als hybride Veranstaltung statt. Dort wurde u.a. von Sebastian Perrig eines seiner Forschungsprojekte im Rahmen des Vortrags «Measuring UX - Current State and Future Opportunities» vorgestellt.

Weitere besonders bemerkenswerte Vorkommnisse sind für 2021 keine zu berichten. Die Situation wird weiterhin durch die andauernde Pandemie dominiert. Als Folge ist der direkte persönliche Kontakt und Austausch auf ein Minimum beschränkt. Eine sehr schwierige Situation für alle...

Personalia in 2021

Februar 2021

Nicolas Scharowski beginnt seine Tätigkeit als neuer Assistent in der Abteilung.

März 2021

Dominik Kayser beendet seine Tätigkeit als Hilfsassistent in der Abteilung.

Juli 2021

Philipp Baumgartner und *Lorena Weder* beenden ihre Tätigkeiten als Hilfsassistenten in der Abteilung.

September 2021

Zgim Memeti beginnt seine Tätigkeit als neuer Hilfsassistent in der Abteilung.

Oktober 2021

Ariane Haller beginnt ihre Tätigkeit als neue Hilfsassistentin in der Abteilung.

Ehrungen/Auszeichnungen

Der bei der ACM SIGCHI Annual Symposium on Computer-Human Interaction in Play (CHI PLAY 2021) in Wien (Österreich) eingereichte Konferenzbeitrag *Transparency in measurement reporting: A systematic literature review of CHI PLAY* von Lena F. Aeschbach, Sebastian Perrig, Lorena Weder, Klaus Opwis und Florian Brühlmann wurde mit einem *CHI PLAY Best Paper Honorable Mentioned Award* ausgezeichnet. Der Award wird den besten fünf Prozent der eingereichten Beiträge („top 5%“) zuerkannt.

Drittmittel in 2021

2021 konnten Drittmittel im Umfang von rund CHF 50'000 erfolgreich eingeworben werden, die insbesondere zur Finanzierung zusätzlicher Personalanstellungen (Lehrbeauftragte, Assistierende, Doktorierende, Hilfsassistierende) genutzt wurden.

Lehrveranstaltungen

Frühlingssemester 2021

Bachelorstudium

Denken, Problemlösen, Expertise (Vorlesung; Opwis)

Lernschwierigkeiten: Ursachen, Diagnose, Prävention und Intervention (Gold, LA)

Empirisch-Experimentelles Projektseminar (Aeschbach)

Wie schreibe ich eine Bachelorarbeit in der Mensch Maschine Interaktion?

(Aeschbach, Brühlmann, Opwis, Perrig, Scharowski)

Masterstudium

Aktuelle Forschungsthemen der Mensch-Maschine Interaktion I

(Aeschbach, Brühlmann, Perrig, Scharowski)

Online Forschung in der MMI: Fragebogenkonstruktion und Analyse (Brühlmann, Perrig)

Usability-Testing: Evaluation der Mensch-Maschine Interaktion (Brühlmann, Scharowski & Seckler, LA)

Konzeption und Design von User Interfaces II (Hübscher, LA)

Einführung in die Analytische Psychologie C.G. Jung (Roesler, LA)

Praxis der analytischen Psychotherapie C.G. Jungs: Anwendung und Vertiefungen (Roesler, LA)

Masterprojekte

Mensch-Maschine Interaktion (Aeschbach, Brühlmann, Opwis, Perrig, Scharowski)

Doktoratskolloquium am 9. Juni 2021

Aesthetic evaluation of digitally reproduced art images (Claire Reymond)

Kollaboratives Lernen: Qualität in Gruppenprozessen im CSCL (Lisa Paneth)

Master of Advanced Studies in Human Computer Interaction Design (MAS-HCID)

Psychologie: Einführung in die Kognitive Psychologie (Opwis)

Herbstsemester 2021

Bachelorstudium

Kognitive Psychologie I: Wahrnehmung, Aufmerksamkeit, Gedächtnis
(Propädeutische Vorlesung; Opwis)
Einführung in die Mensch Maschine Interaktion (Bargas-Avila, LA)
Empirisch-Experimentelles Projektseminar (Scharowski)
Wie schreibe ich eine Bachelorarbeit in der Mensch Maschine Interaktion?
(Aeschbach, Brühlmann, Opwis, Perrig, Scharowski & Martinis-Bopp, LA)
Einführung in die Analytische Psychologie C.G. Jung (Roesler, LA)
Praxis der analytischen Psychotherapie C.G. Jungs: Anwendung und Vertiefungen (Roesler, LA)

Masterstudium

Ästhetik: Wahrnehmungsforschung aus kognitionspsychologischer Sicht (Opwis)
Lesen und Lernen mit digitalen Medien (Gold, LA)
Forschungsmethoden der Mensch Maschine Interaktion I (Aeschbach, Brühlmann, Perrig,
Scharowski, Vollenwyder)

Masterprojekte

Mensch Maschine Interaktion (Aeschbach, Brühlmann, Opwis, Perrig, Scharowski)

Doktoratskolloquium am 29. September 2021

The time for X-ray baggage screening (Robin Riz à Porta)
Leistungsmessungen an Sicherheitskontrollstellen (Daniela Buser)
Meta-Forschung und Theoriebildung in der Player Experience (Lena Aeschbach)
Guided digital behavior change intervention (Birgit Schmid)

Publikationen in 2021

Peer-Reviewed Artikel und Beiträge

Aeschbach, L. F., Perrig, S., Weder, L., Opwis, K. & Brühlmann, F. (2021). Transparency in measurement reporting: A systematic literature review of CHI PLAY. *CHI PLAY 2021: Proceedings of the 2021 ACM Annual Symposium on Computer-Human Interaction in Play (article 233, 21 pages)*. 18.-21. October 2021 (Virtual). New York, NY: ACM.

Measuring theoretical concepts, so-called constructs, is a central challenge of Player Experience research. Building on recent work in HCI and psychology, we conducted a systematic literature review to study the transparency of measurement reporting. We accessed the ACM Digital Library to analyze all 48 full papers published at CHI PLAY 2020, of those, 24 papers used self-report measurements and were included in the full review. We assessed specifically, whether researchers reported What, How and Why they measured. We found that researchers matched their measures to the construct under study and that administrative details, such as number of points on a Likert-type scale, were frequently reported. However, definitions of the constructs to be measured and justifications for selecting a particular scale were sparse. Lack of transparency in these areas threaten the validity of singular studies, but further compromise the building of theories and accumulation of research knowledge in meta-analytic work. This work is limited to only assessing the current transparency of measurement reporting at CHI PLAY 2020, however we argue this constitutes a fair foundation to assess potential pitfalls. To address these pitfalls, we propose a prescriptive model of a measurement selection process, which aids researchers to systematically define their constructs, specify operationalizations, and justify why these measures were chosen. Future research employing this model should contribute to more transparency in measurement reporting. The research was funded through internal resources.

Krauss, L., Ott, C., Opwis, K., Meyer, A. & Gaab, J. (2021). Impact of contextualizing information on aesthetic experience and psychophysical responses to art in a museum: A naturalistic randomized controlled trial. *Psychology of Aesthetics, Creativity, and the Arts*, 15, 505-516.

Contextual information influences aesthetic experience and psychophysiological responses to art, yet these influences have seldom been analyzed with real artworks in a real museum. Consequently, this study set out to assess the aesthetic experience and psychophysiological responses of participants in an art museum viewing 6 artworks of Flemish expressionism. Participants were randomly assigned to one of the experimental conditions, either receiving elaborative information or descriptive information on the artworks. Aesthetic experiences were assessed via a questionnaire and through psychophysiological markers. A systematic influence of contextual information on aesthetic experience could not be shown. However, artworks had effects on aesthetic experience and heart rate, heart rate variability, skin conductance, and skin conductance variability. The results indicate that the characteristics of the artwork itself have a stronger impact than provided contextual information, at least when they are perceived as originals in a museum.

Linxen, S., Sturm, C., Brühlmann, F., Cassau, V., Opwis, K. & Reinecke, K. (2021). How WEIRD is CHI? *Proceedings of the 2021 CHI Conference on Human Factors in Computing Systems (CHI 2021)*, Yokohama, Japan, 8. – 13. Mai 2021, Paper 143 (14 pages).

Computer technology is often designed in technology hubs in Western countries, invariably making it WEIRD, because it is based on the intuition, knowledge, and values of people who are Western, Educated, Industrialized, Rich, and Democratic. Developing technology that is universally useful and engaging requires knowledge about members of WEIRD and non-WEIRD societies alike. In other words, it requires us, the CHI community, to generate this knowledge by studying representative participant samples. To find out to what extent CHI participant samples are from Western societies, we analyzed papers published in the CHI proceedings between 2016-2020. Our findings show that 73% of CHI study findings are based on Western participant samples, representing less than 12% of the world's population. Furthermore, we show that most participant samples at CHI tend to come from industrialized, rich, and democratic countries with generally highly educated populations. Encouragingly, recent years have seen a slight increase in non-Western samples and those that include several countries. We discuss suggestions for further broadening the international representation of CHI participant samples.

Pimmer, C., Brühlmann, F., Odetola, T. D., Dipeolu, O., Oluwasola, O., Jäger, J., & Ajuwon, A. J. (2021). WhatsApp for mobile learning. Effects on knowledge, resilience and isolation in the school-to-work transition. *The Internet and Higher Education*, 100809 (15 pages).

This study investigated the use of instant messaging in the school-to-work transition, a crucial stage of learning and development. Newly graduated health professionals ($n = 235$) participated either in WhatsApp groups in which moderators shared knowledge and facilitated professional discussions or in the control group. The results show that participants in the WhatsApp groups had markedly higher levels of knowledge, greater resilience as well as lower levels of professional isolation— in comparison with the control group. They also reported less stress when searching for a new job. These findings are affirmed by the qualitative analysis of open survey questions: knowledge acquisition emerged as the main benefit followed by connectedness and professional informational benefits. A further interesting result is that the general, day-to-day use of WhatsApp outside of the intervention was linked to higher levels of resilience. Another finding is that although the actual (measured) and self-reported frequency of participation in the WhatsApp groups correlated highly, these measures did not predict the outcome variables in the regression analysis. This observation questions the frequency of participation as a proxy for the success of engagement.

Kurzbeiträge / Vorträge / Poster/ Publierte (peer-reviewed) Extended Abstracts

Kayser, D., Perrig, S., & Brühlmann, F. (2021). Measuring players' experience of need satisfaction in digital games: An analysis of factor structure of the UPEQ. *CHI PLAY 2021 Extended Abstracts of the 2021 ACM Annual Symposium on Computer-Human Interaction in Play*, pp. 158-162. October 2021 (Virtual). New York, NY: ACM.

In this work, we explore the factorial structure of the Ubisoft Perceived Experience Questionnaire (UPEQ) and its correlation with game enjoyment. For this purpose, an online survey was conducted on the experience with the video game League of Legends. Three hundred and sixty-nine participants provided information about their in- and out-of-game demographics and rated their experience with the game using the UPEQ and the subscale Interest/Enjoyment from the Intrinsic Motivation Inventory. Using confirmatory and exploratory factor analysis, we found weaknesses in the 3-factor model of the UPEQ and propose a 6- or 7-factor structure as a basis for new research and improvement of the UPEQ.

Scharowski, N., Opwis, K. & Brühlmann, F. (2021). Empirical hints of cognitive biases despite human-centered AI explanations. *2021 CHI Conference on Human Factors in Computing Systems (CHI 2021), Workshop: Operationalizing Human-Centered Perspective in Explainable AI* (5 pages).

In explainable artificial intelligence (XAI) research, explainability is widely regarded as crucial for user trust in artificial intelligence (AI). However, empirical investigations of this assumption are still lacking. There are several proposals as to how explainability might be achieved and it is an on-going debate what ramifications explanations actually have on humans. In our work-in-progress we explored two post-hoc explanation approaches presented in natural language as a means for explainable AI. We examined the effects of human-centered explanations on trust behavior in a financial decision-making experiment ($N = 387$), captured by weight of advice (WOA). Results showed that AI explanations lead to higher trust behavior if participants were advised to decrease an initial price estimate. However, explanations had no effect if the AI recommended to increase the initial price estimate. We argue that these differences in trust behavior may be caused by cognitive biases and heuristics that people retain in their decision-making processes involving AI. So far, XAI has primarily focused on biased data and prejudice due to incorrect assumptions in the machine learning process. The implications of potential biases and heuristics that humans exhibit when being presented an explanation by AI have received little attention in the current XAI debate. Both researchers and practitioners need to be aware of such human biases and heuristics in order to develop truly human-centered AI.

Qualifikationsarbeiten (Abschluss in 2021)

Dissertationen

Cortesi, Sandra (2021). *Youth and the participatory promise*. (Datum der Disputation: 26. August 2021).

Masterarbeiten

Bier, Johannes (2021). *Meeting people: Exploring what makes social virtual reality appealing to users*.

Kayser, Dominik (2021). *I could do better! The Dunning-Kruger effect and its implications on player experience in League of Legends*.

Saraceno, Sebastian (2021). *Rewards in gamification: A conceptual replication and extension*.

Ueffing, David (2021). *The effects of smartphone app aesthetics: A boost in performance and usability*.

Weder, Lorena (2021). *Flavour choices in digital narrative games: The effect on identification and enjoyment*.

Widmann, Denise (2021). *The impact of color on website aesthetics in regard to gender differences*.

Bachelorarbeiten

Bähler, Marline (2021). *Graphic design guidelines which concern white space and their effect on the User Experience*.

Cabrera, Laura (2021). *Differences in website color preferences between Asia and Europe*.

Di Matteo, Lorena (2021). *Information processing online: Mechanisms of handling (mis)information on social network sites*.

Güler, Elham Darejati (2021). *Digital games for children education*.

Henz, Tina (2021). *The use of mental health applications: An overview of the state-of-the-art and evaluation of the effectiveness*.

Kaufmann, Yannick (2021). *Video game effects in psychotherapy on people with mental illness and their potential: A systematized review*.

Laverde, Deborah (2021). *Does gaming have an impact on aggressive behavior?*

Wyss, Lukas (2021). *The influence of anonymity on toxic behavior in multiplayer online games*.

Memeti, Zgjim (2021). *Challenge as a mediator: From experiencing negative emotions to a positive player experience*.

Masterstudierende (per 31. Dezember 2021)

Alt, Roman
Bornand, Elea
Caroni, Pietro
Felten von, Nick
Graf, Simon Andreas
Haller, Ariane
Jeker, Rahel
Kayser, Dominik
Lüthi, Camille
Margelli, Daphne Petala Naomi
Marty, Linus
Memeti, Zgjim
Paro, Damian
Saraceno, Sebastian
Thomaser, Marika
Treichler, Christoph
Ueffing, David
Widmann, Denise
Weder, Lorena

Doktorandinnen und Doktoranden (per 31. Dezember 2021)

Aeschbach, Lena F.
Buder, Daniela
Henzen, Nicolas
Laasner, Lea
Linxen, Sebastian
Müller, Livia
Paneth, Lisa
Perrig, Sebastian
Reymond, Claire
Riz à Porta, Robin
Ruf, Alessia
Scharowski, Nicolas
Schmid, Birgit
Vollenwyder, Beat
Wyssenbach, Thomas
Wüst, Alexandra