TECHNOLOGY, MIND & SOCIETY

AN APA CONFERENCE

OCTOBER 3-5
WASHINGTON, DC
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AMERICAN PSYCHOLOGICAL ASSOCIATION

2019 PROGRAM

#APATech19

TECHNOLOGY, MIND & SOCIETY

AMERICAN PSYCHOLOGICAL ASSOCIATION

Full Program

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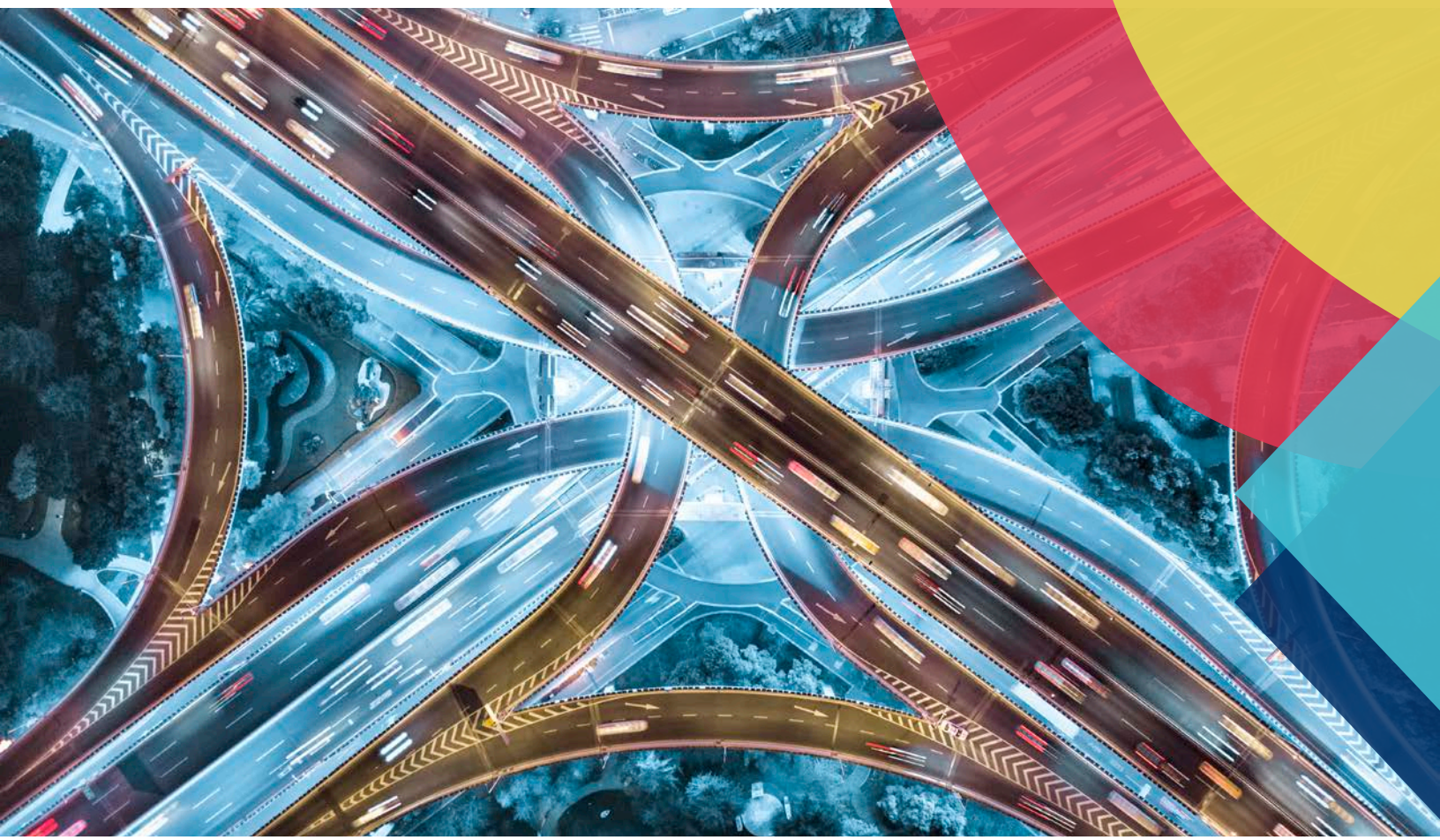

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Agenda at a Glance

THURSDAY

5:00-7:15 p.m. **Keynote** *Independence Ballroom*	Opening Session, Keynote, and Poster Highlights **Is Clinical Virtual Reality Ready for Primetime?** *Albert "Skip" Rizzo, PhD* CEP
7:15–8:30 p.m. *Constitution Ballroom*	Welcome Reception

FRIDAY

7:30–9:00 a.m. *Constitution Ballroom*	Poster Session 1 and Continental Breakfast			
9:15–10:30 a.m. **Keynote** *Independence Ballroom*	**Aging and Technology Systems: Benefits and Challenges** *Sara Czaja, PhD* CEP			
10:45 a.m.–Noon **Concurrent Sessions 1**	Games and Virtual Reality For Fostering Education and Knowledge *Paper Session. Lafayette Park.*	Bias and Technology *Paper Session. Farragut Square.*	Using Digital Data to Measure and Understand Mental Health *Symposium. Independence FG.* CEP	Using Online Technologies to Build Computing Skills That Meet Future Workforce Needs *Panel. Independence D.*
	Wearable Biometrics Technology: Investigating its use in simulated and live law enforcement training *Symposium. Independence BC.* CEP	Developing Technology-Based Mental Health Interventions *Paper Session. Independence HI.* CEP	Robotics and Psychology *Paper Session. Independence E.*	
Noon-1:15 p.m.	Lunch on your own			
1:15–2:30 p.m. **Concurrent Sessions 2**	Interactivity with Automation *Paper Session. Independence D.*	Older Adults and Technology *Paper Session. Independence BC.* CEP	Games for Growth: Innovative Approaches to Applying Digital Games in Therapy *Panel. Independence HI.* CEP	Machine Learning For Analyzing Behavior *Paper Session. Lafayette Park.* CEP

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FRIDAY CONTINUED

1:15–2:30 p.m. **Concurrent Sessions 2**	Rethinking Anthropomorphism: The Antecedents, Unexpected Consequences, and Potential Remedy for Perceiving Machines as Humanlike *Symposium.* *Independence E.*	Virtual Reality in The Tech Innovation Network—A Model of Clinical, Industry, and Academic Partnerships for Developing, Testing, and Implementing Mental Health Technologies *Panel.* *Independence FG.* CEP	National Science Foundation Funding Initiatives and Opportunities: The Role of Social, Behavioral, and Economic Sciences in Research on Human-Technology Interaction *Farragut Square.*	
2:45–4:00 p.m. **Concurrent Sessions 3** *All Paper Sessions*	Psychology and Cybersecurity *Farragut Square.*	The Future of Work, Job Skills, and Automation *Independence BC.* CEP	Psychological Assessment and Treatment Via Technology— *Independence HI.* CEP	Physiology and Psychology *Layfatte Park.*
	Algorithms and Advice *Independence E.*	Virtual Reality for Health and Well-Being *Independence FG.* CEP	Deception and Trust Online *Independence D.*	
4:00–4:30 p.m. *Independence Foyer*	Networking Break			
4:30–5:45 p.m. **Keynote** *Independence Ballroom*	**The Potential of Policy, Partnerships, and Combinatorial Innovation** *Kumar Garg, JD*			

SATURDAY

7:30–9:00 a.m. *Constitution Ballroom*	Poster Session 2 and Continental Breakfast
9:15–10:30 a.m. **Keynote** *Independence Ballroom*	**Stealth Assessment — What, Why, and How?** *Valerie Shute, PhD* CEP
10:30–11:00 a.m. *Independence Foyer*	Networking Break *Meet the Editor of APA's NEW journal:* Technology, Mind, and Behavior

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SATURDAY CONTINUED

11:00 a.m.–12:15 p.m. **Concurrent Sessions 4**	Challenges and Opportunities for Using Big Data *Paper Session. Independence D.*	Social Media and Well-Being *Paper Session. Independence E.*	Measuring Psychological Variables using Mobile Sensing Technologies: Modeling Big Data and Implications for Research and Designing Intelligent Support for Well-Being and Productivity at Work *Symposium. Independence FG.* CEP	Learning and Education in the Digital Age *Paper Session. Farragut Square.*
	Teletherapy *Paper Session. Independence HI.* CEP	Dietary Behavior and Technology *Paper Session. Independence BC.* CEP	Technology in Tandem: Characteristics and Effects of Joint Media Engagement in the Digital Age *Symposium. Lafayette Park.* CEP	
12:15-1:30 p.m.	Lunch on your own			
1:30–2:45 p.m. **Keynote** *Independence Ballroom*	**The Digital Revolution: The Potential Promise and Ethical Perils in Research** *Camille Nebeker, EdD, MS* CEP			
3:00–4:15 p.m. **Concurrent Sessions 5**	Children and Technology *Paper Session. Independence BC.* CEP	Work and Management in a High-Tech World *Paper Session. Farragut Square.*	Machine Learning and Education *Paper Session. Independence E.*	Engaging Patients and Tranforming Care *Paper Session. Independence HI.* CEP
	The Candid Body-Worn Camera? How Officer Body-Worn Cameras Inform (and Misinform) Our Understanding of Police Encounters *Symposium. Independence D.*	Transforming Access to Mental Health Care for Rural and Undeserved Populations *Symposium. Independence FG.* CEP	Reflections on Cyberlearning: Exploring Tensions in the Co-Evolution of Learning Technologies with Advances in Learning Theories and Methods *Panel. Lafayette Park.*	
4:30–5:30 p.m. *Independence Ballroom*	Closing Panel			

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OCTOBER 4

FRIDAY

R-4

Virtual or Reality? Same Effects of Short-Term Relaxation Scenarios on Affect and Stress

Introduction: The sociotechnical system approach proposes an inter-dependence of technical and human systems. Developments of the one require adaptations in the corresponding domain (Mumford, 2000). Digitization has a deep impact on the way of working (Parviainen, Tihinen, Kääriäinen, & Teppola, 2017). As a result cogni-tive strain increases which also affects productivity and performance as the latest health report of the BKK, a German health insurance, demonstrates. Employees report negative emotional and cognitive effects leading to mental stress (Knieps & Pfaff, 2017). Reversely, recovery experiences positively relate to on-job behavior (Sonnentag, 2003). Studies show that short relaxation phases affect mood posi-tively (Kaida, Takahashi, & Otsuka, 2007) and memory performance (Lahl, Wispel, Willigens, & Pietrowsky, 2008). Large companies offer employees relaxation spaces varying from deck chairs to sleeping capsules. However, portable, cost efficient and moreover also effec-tive infrastructures have not been implemented yet. Virtual Reality (VR) applications meet these requirements providing a immersive environment. Several studies support relaxation potential of VR (Kosunen et al., 2016; Riva et al., 2007; Soyka et al., 2016). In this study we tested the effect of four relaxation conditions on mood and perceived stress.

Hypotheses and Research Question: H1 Independent of the method a relaxation phase increases positive affect (H1a) lowers negative affect (H1b) and perceived strain (H1c). H2 An immersive VR application enhances positive affect (2a) and lowers negative affect (2b) compared to an audio only application. H3 An immersive VR application lowers perceived strain compared to an audio only application.

RQ1: How does a professional immersive sleep capsule compared to a regular deck chair affect perceived relaxation effectiveness? RQ2: How stable are short-term relaxation effects and does this stability depend on the used relaxation method?

Method and Data: We conducted a 2 (VR vs. No VR) x 2 (sleeping capsule vs. deck chair) experimental within-between-subjects design. Relaxation was supported by music via headphones. Participants were assigned randomly and attended the same respective condition twice within a fixed delay of one week. After a brief information participants filled out a first set of questions, followed by a relaxation period of 15 minutes. During relaxation we obtained biofeedback via a heart rate wristband to include an objective perspective. Afterwards, the second part of the questionnaire was assessed. We captured mood with the German version of the Positive and Negative Affect Schedule (PANAS) by Krohne and colleagues (1996). We obtained strain by using the state subscale of the German version of the State Trait Anxiety Inventory (Laux, Glanzmann, Schaffner, & Spielberger, 1981). Besides demographic data, we also assessed simulator sickness, to control for biases, and qualitative feedback. Data consists of 61 data sets virtually equally distributed to all four conditions. The average age was 22.97 (SD = 5.79). 68.9% were students and 14.8% in employment. Low scores for simulator sickness in both points of measurement were found (M1 = 1.43, SD = .44; M2 = 1.33, SD = .35).

Results: To examine the relationship between relaxation and positive affect (H1a), negative affect (H1b) and strain (H1c) we conducted an ANOVA with repeated measures. Contrary to the assumptions positive affect decreased after applying the relaxation ($F(1, 57) = 7.26$, $p = .009$, eta2 = .113; Pre: M = 2.91, SE = .08 Post: M = 2.74, SE = .10). Additionally, there was a significant decrease of negative affect ($F(1, 57) = 17.01$, $p < .001$, eta2 = .230; Pre: M = 1.31, SE = .05; Post: M = 1.20, SE = .04). However, an interaction effect yielded that this effect was not stable between the two points of measurement ($F(1, 57) = 17.09$; $p < .001$ eta2 = .231; Pre 1: M = 1.38, SE = .06, Post 1: M = 1.14, SE = .03; Pre 2: M = 1.22, SE = .06, Post 2: M = 1.26, SE = .06). Strain decreased significantly after the relaxation ($F(1, 57) = 45.370$, $p < .001$, eta2 = .443; Pre: M = 1.99, SE = .05, Post: M = 1.77; SE = .05) confirming H1c. VR had no significant effect on neither mood (i.e. positive (H2a) nor negative affect (H2b)) nor perceived strain (H3).

Conclusively, we founds no effect of positioning condition (sleeping capsule vs. deck chair) (RQ1). The effects were stable in between the two sessions for strain and positive affect, whereas negative affect showed deviations (see interaction effect H1b) (RQ2).

Qualitative data suggests potential benefits of customizable VR-interfaces. Objective data will be added to validate self-reported findings and provided within paper session.

Conclusion: Results indicate that, independent of method, relaxation balances affect leading to a more neutral state. Neither visual surrounding nor physical positioning influenced relaxation effectivity.

Future research should focus more on objective measurements and performance tests after relaxation. Additionally, new applications enabling individual customization of the content should be tested to examine the influence of personal control.

Carolin Straßmann (University of Applied Sciences Ruhr West)

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