



Social Attention Bias in the Real World- Pilot Study

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Introduction

- Attention bias to threat is related to anxiety. The more anxious a person is, the more likely they are to attend to more threatening stimuli (Rubin et al., 2020).
- Eye tracking can be used to see what stimuli a person is attending to and psychophysiological monitoring can capture patterns of arousal and from there we can see the differences in attention bias between more anxious people and less anxious people (Fu et al., 2019).
- Past research has focused on this relationship in a lab setting. We aim to bring this experiment into the real world.
- Before we can do this, we must test the equipment we are using and create protocols for collecting data.
- Different environment alters the results because the real world is more dynamic than the lab setting

Participants and Materials

Participants = Current lab assistants in Geneseo's SED lab served as the five participants.

Materials = Empatica E4 wristband, which measures a person's electro dermal activity, blood volume pulse, accelerometers, heart rate (BPM) and temperature.



Protocol

- Participants first complete the STAI-S state anxiety questionnaire before starting the E4 recording. Students will then turn on the E4 empatica wristband and begin their event marking along their on campus route to get their weekly covid pooled test. After turning on the E4 wristband, students will complete a 5 min baseline recording and mark 7 events along their route.

 1. Leaving for appointment
 2. Entering Sturges building
 3. Checking in (the first person we talk to at the very first desk)
 4. Ready to administer the covid test to yourself
 5. Finished administering the covid test to yourself
 6. Leaving Sturges building
 7. Arrive at destination (Bailey, residence, or wherever)

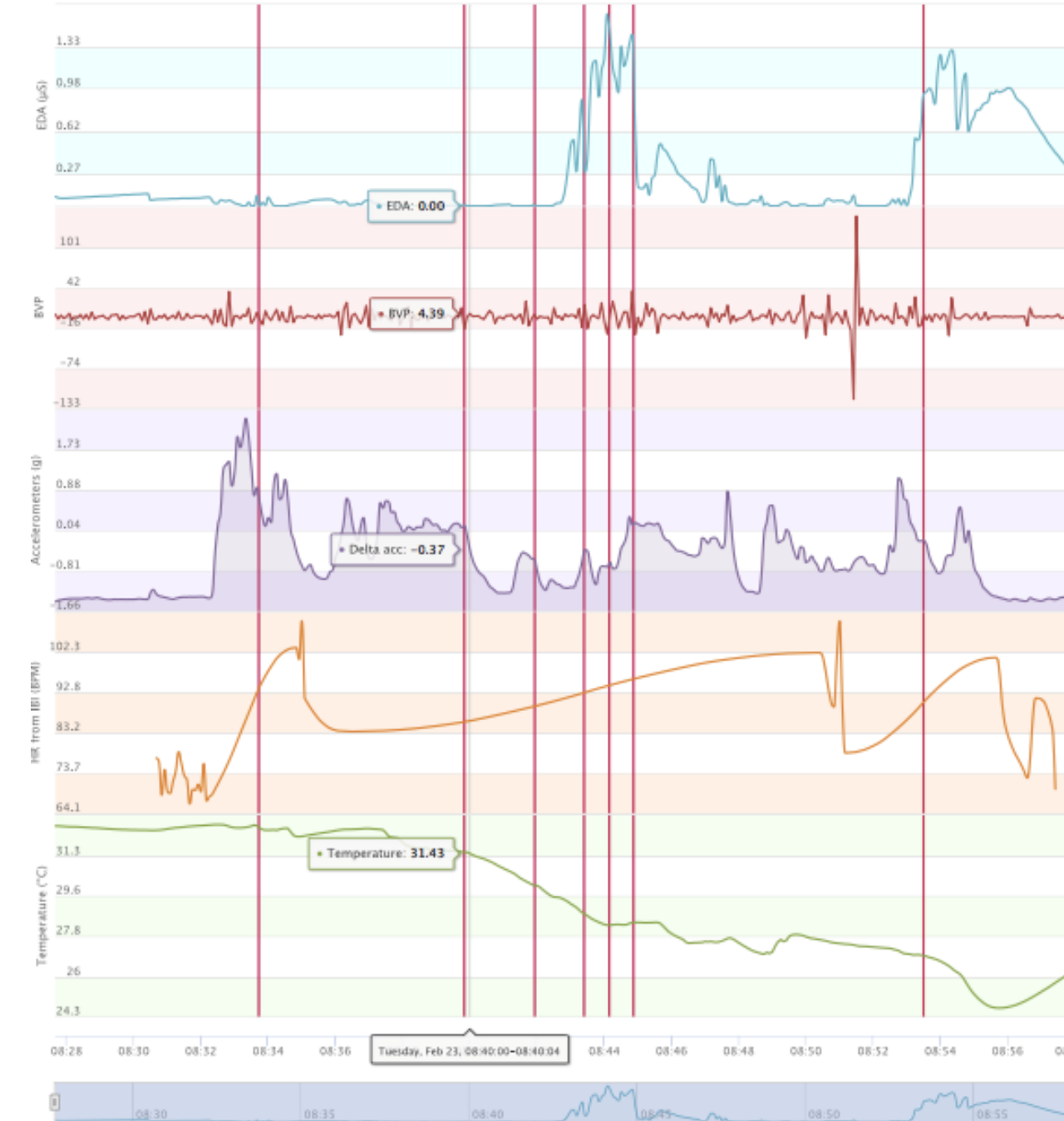
- After returning to the lab, students will turn off the E4 recording and complete the social interaction questionnaire.

Results

- Only 3 participants actually collected data. One participant had scheduling conflicts and couldn't get into the lab. Another participant attempted to collect data, but the wristband failed to record data at each event marker.
- Issues with collecting data
 - > Participant #2: Failed to press button hard enough for the first two event markers
 - > Participant #4: Experienced flashing red and green light throughout the experiment which is indication that data was not collected
 - > Participant #5: Was not able to collect data.

Data

Participant #1: All events marked



Participant #2: Several events missed

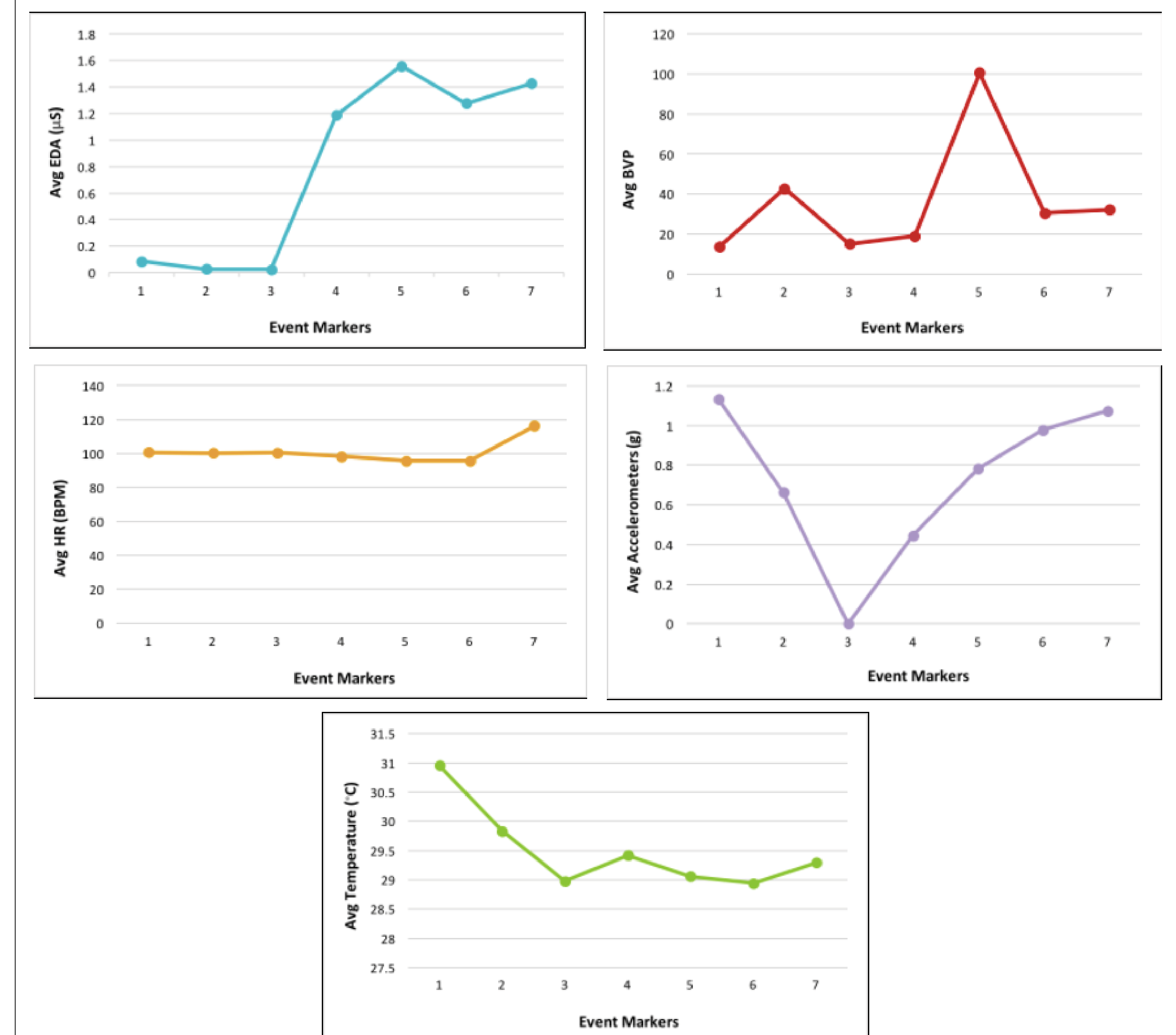


Participant #3: All events marked



Data Comparison

The graphs below demonstrate the averages of the three participants across several factors including Electrodermal Activity, Blood Volume Pulse, Heart Rate, Acceleration and temperature.



Conclusion

Overall this study will serve as a base and protocol for future data collection with the Empatica wristbands. Many problems arose with the protocol such as the wristbands not working correctly and participants incorrectly marking time stamps. The knowledge gained from this study will be used to prevent these problems for future work. When participants come in we will have several trials to get them accustomed to the wristband. The first trial will be to teach them the technology and when to mark the time stamps. The second trial will be to a test run to help the participants mark the correct data and have a run through of the protocol. The final trial will be the participants actually collecting data. To increase the number of participants for this study we will open it up to volunteers from the SUNY Geneseo community through SONA research participants sign up. We will design a study based off of this pilot work.

References

- Fu, X., Nelson, E., Borge, M., Buss, K., & Pérez-Edgar, K. (2019). Stationary and ambulatory attention patterns are differentially associated with early temperamental risk for socioemotional problems: Preliminary evidence from a multimodal eye-tracking investigation. *Development and Psychopathology*, 31(3), 971-988. doi:10.1017/S0954579419000427
- Rubin M, Minns S, Muller K, et al. Avoidance of social threat: Evidence from eye movements during a public speaking challenge using 360°- video. *Behavior Research and Therapy*. 2020 Nov;134:103706. DOI: 10.1016/j.brat.2020.103706.