Body signals as digital narratives: from social issues to digital characters

Vilelmini Kalampratsidou[1], Katerina ElRaheb[1]
[1] Department of Performing and Digital Arts, University of the Peloponnese, Greece

In this work in progress, building upon the research and outcomes of the project “Transition to 8: Bridging Social Issues, Tech, and Contemporary Art”(https://transitionto8.com/), we investigate how data -specifically biosignals- reporting social issues can enhance digital narratives. While biosignals provide rich resources and indications about bodily states, feelings, and emotions of people; through mappings into sounds and visuals, they can be used as material and toolkits for creating audiovisual artworks, 3D game environments, characters, etc. As such, using the material of Transition to 8, which was collected from physical worlds and transformed into digital environments and sound, we investigate how the same material could enhance digital narratives.

More specifically, the study [1] investigates the three main issues of the city of Eleusis, “environment”, “employment”, and “migration” by inviting locals to public discussions (sociodrama sessions) about these topics. The study exposes interesting outcomes about the connection between biosignals measured and the emotions expressed. The biosignals revealed the real tension of the feelings of the socially accepted emotions expressed by the narrator, the possible emotional engagement of the silent audience, and the connection of the narrator with the leader of the sociodrama. The digital findings were then given to artists along with the narration of the conversation and the former transformed the digital material into audio-visual art. By doing this, they managed to use the biosignals as digital narratives and transfer the physiological activities of the real to the digital world.

Collecting body signals such as heart activity, skin temperature, and conductance during social interactions is an informative process that can transparently reveal the embodied aspect of social communication experience. The study [2] has shown that biological activities triggered by felt emotions experienced in social interaction can be measured by wearable technology and highlight unseen events unfolding during the witnessed narrative of the interaction. As a result, it can be stated that body signals reveal data about emotional states that may not be expressed (yet are experienced) by a human within a social condition, as our personality may control how freely or conservatively we express ourselves.

Biosignals carry valuable information that could enhance various aspects of the digital narrative. In the Transition to 8 project, this idea was successfully executed by Alexandra Niaka (transitionto8.com/en-us/artworks/) who presented pieces of digitally transformed 3D environments. She created 3D-virtual spaces of monuments of Eleusis that were composed and decomposed by particles. She connected the particles’ gravitational forces, color, and density, with biosignals. In these artworks, the environment and the city of Eleusis were put at the center of the investigation.

Proceedings of DiGRA 2025

A different perspective on the same story could be revealed by observing the same narrative through the lenses of the people of Eleusis. In such artworks, the daily sufferings of the locals could be demonstrated not only by their beliefs, behavioral traits, and storylines but also by their biosignals which describe people's feelings and embodied experiences as recorded by the wearables. This perspective could lead our investigations to digital characters who express their otherwise hidden inner states. Such biosignal augmentation is commonly succeeded through visual and auditory modalities, yet these two give unlimited choices in a virtual world.

In conclusion, in this workshop, we will discuss ways that body signals could be used to enhance digital narration. The discussion will be unfolded around two main lines, how to enrich the narration 1)putting at the center the location of the storyline and 2) through the lenses of the people exposed to the social issues.

Bibliography

[1] El-Raheb K, Kalampratsidou V, Issari P, et al. Wearables in sociodrama: An embodied mixed-methods study of expressiveness in social interactions. Wearable Technologies. 2022;3:e10. doi:10.1017/wtc.2022.7

[2]Vilelmini Kalampratsidou, Georgia Koutiva, Katerina El Raheb, Marina Stergiou, Pandelis Diamantides, Akrivi Katifori, Yannis Ioannidis, Philia Issari, Eugenia Georgaca, Evangelia Karydi, Dora Skali, Antigoni Apostolopoulou, Nikolaos Papadopoulos, Panos Gkiokas, Virginia Vassilakou, and Yannis Pappas. 2024. Here is an episode! Synchronizing and organizing citizens' biosignals for global artistic inspiration. In Proceedings of the 9th International Conference on Movement and Computing (MOCO '24). Association for Computing Machinery, New York, NY, USA, Article 7, 1–8. https://doi.org/10.1145/3658852.3663339