



Beholding: The Neuroaesthetic Experience of a Synesthetic Dress

Virginia Rolling, Delaware State University
Karla Teel, Auburn University

Keywords: Synesthetic dress, multisensory, eye-tracking, aesthetics

Background: In 2016, the Met's seventh most visited exhibition, *Manus x Machina: Fashion in an Age of Technology*, had 752,995 visitors (Met, 2016). The significant attendance achieved during this exhibition focused on fashion merged with technology by featuring synesthetic dresses (i.e., multisensory technology-operated dresses) such as Hussein Chalayan's *Video Dress* that operated 15,600 light-emitting diode (LED) lights (Bolton, 2016; Schubert, 2006). With the recent incorporation of technology in fashion that can lead to synesthesia (i.e., seeing sounds and hearing sounds; Phillips, 2008), there needs to be a re-evaluation of the aesthetic experience from synesthetic dresses that use technology-enabled multisensory cues such as colored LED lights and digital musical sound.

One reason for viewing art includes receiving hedonic rewards (Leder, Belke, Oeberst, & Augustin, 2004). Since millennials are a generational cohort that are important to the future of museums (Foreman-Wernet, Dervin, & Funk, 2014), attention should be given to their aesthetic preferences. Currently, there is limited research on 1) the aesthetic impact of synesthetic dresses as artworks 2) how novel dress sensory cues such as sound and light are aesthetically processed, and 3) the use of eye-tracking technology for garments that are artworks. As such, this research is unprecedented in the areas of aesthetics, apparel, and museum research to 1) benefit museum art directors in understanding which sensory cues enhance museum visitor's aesthetic experiences and 2) assist artists and designers to improve design decisions for customized clothing to enhance individuals' daily quality of life. This information is important since wearable technology sectors are forecasted to increase in profitability with an annual growth rate of 23% over the next five years (Wade, 2017).

Approach: As a qualitative study applying a grounded theory approach, this study was an exploratory investigation using distinct data elicitation approaches (i.e., physiological measures, interview data, and observational data) to determine museum visitors' aesthetic experiences from beholding a silk-painted dress created by the researcher that incorporated digital music and colored LED lights. The purpose of this study was to investigate the impact that synesthetic dress sensory cues (i.e., dress, digital music, and colored LED lights) had on the beholder's aesthetic experience. Therefore, the following research question:

RQ1: Which sensory cues in a synesthetic dress [digital music, colored LED lights, both, or none] create a profound aesthetic experience for the beholder?

Methods: Millennial museum visitors, ages 19 to 37, were recruited for a purposive sample of 44 participants that were observed experiencing one viewing of the artwork (i.e., dress-only, music-only, lights-only, music-lights) with eye-tracking technology. Afterwards, each participant was

interviewed. The eye-tracking data was analyzed using Tobii Pro Studio. Observational data and interview data was coded for themes and reported using triangulation.

Results: Majority of participants were white (68%) females (61%) with an average age of 26 years. The heat maps indicated that the most emphasis was given to the belt. Furthermore, participants who viewed the music-lights dress were the most impressed and had a very affirmative response to wanting to see more similar dresses in museums. These participants in particular were observed with the most straight-faced expressions along with some smiles and had a lengthy view time of 36.20 seconds. These results indicated that diverse multisensory cues (i.e., music and colored lights) can provide a more impactful aesthetic experience so viewers can be ultimately impressed.

Conclusions/Limitations: Since the combination of multisensory cues of music with lights in a dress led to viewers being impressed for enhanced aesthetic experience, museum curators, fashion designers, and retailers should consider employing additional sensory cues to promote viewer hedonism. Furthermore, this research supports the application of familiarity mixed with novelty as ideal within design. Due to this research using only one particular dress style with specific music, it is suggested that further research be conducted with a different dress and alternative music. In addition, a different sample population is suggested such as synesthetes, a different generational cohort, and art experts.

References

- Bolton, A. (2016). *Manus x machina: Fashion in an age of technology*. London, England: Yale University Press.
- Foreman-Wernet, L., Dervin, B., & Funk, C. (2014). Standing in two worlds looking at an art exhibition: Sense-making in the millennial generation. *The Journal of Arts Management, Law, and Society*, 44(2), 101-117.
- Leder, H., Belke, B., Oeberst, A., & Augustin, D. (2004). A model of aesthetic appreciation and aesthetic judgments. *British Journal of Psychology*, 95(4), 489-508.
- Met (2016). 752,995 Visitors to costume institute's *manus x machina* make it the 7th most visited exhibition in the Met's history. Retrieved from <https://www.metmuseum.org/press/news/2016/manus-x-machina-final-attendance>
- Phillips, F. D. (2008). *Illuminating music: A research and product design study applying synesthesia and ambient peripheral display theory to the violin* (Master's thesis). Retrieved from http://etd.auburn.edu/bitstream/handle/10415/1527/Phillips_Foster_7.pdf?sequence=1&isAllowed=y
- Schubert, E. F. (2006). *Light-emitting diodes*. New York, NY: Cambridge University Press.
- Wade, J. (2017). Wearable technology statistic and trends 2018. Retrieved from <https://www.smartinsights.com/digital-marketing-strategy/wearables-statistics-2017/>