

Evaluating Metrics for Studying Horror Film Viewer Reactions

By:

Nolan Jacobs Walker

University Honors Program

Loyola Marymount University

Mentor:

Dr. John David Dionisio

Professor of Computer Science

Abstract:

In this proposal, I request funding to perform a pilot study to compare methods of evaluating the psychological reactions of viewers to specific horror film styles and techniques. I will monitor viewers' heart-rates and eye motion to track viewers' levels of fear during a screening of horror film scenes, and following the screening will also ask subjects to describe their feelings towards the films in a survey. By comparing these results with an earlier and a later screening of short films containing similar imagery to the horror films (but in a non-horror context), I will determine which metric provides the most consistent and effective results and begin to explore its functionality for examining the long-term impacts of horror films. These findings will allow the fields of film theory and psychology to move forward in determining which styles and techniques filmmakers should use to craft more impactful horror films.

Introduction

After watching Tommy Lee Wallace's *IT*, in which a clown emerges from a drain, my cousin developed a fear of drains. This account points to film's power to have lasting psychological impacts, a phenomenon that has been observed repeatedly (Shimamura). Two fields, film theory and psychology have studied how viewers respond to films. Film theory primarily focuses on the intended impact of the different components of a film, and psychological studies of film have generally explored the emotional impact of films as a whole. As a result, though, there is little research demonstrating the effective impacts of specific film techniques and styles on viewers' psychological responses to films.

However, with an advanced understanding of the effect of specific film techniques on psychological responses, filmmakers could better control viewers' emotions (Loria). Horror film creators in particular could benefit from such a study, for a greater control of emotion means a greater control of fear (Loria). Thus, a more detailed study of the link between psychology and film will allow filmmakers to create more effective movies, particularly horror movies. This begs the question: what are the impacts of specific horror film techniques on viewers? Yet, it is difficult to even ask such a question, for first, one must determine how to evaluate viewer response. While numerous methods have been used to study viewer reactions to film, there has been little consensus on which would be most effective. Thus, in my research, I plan to ask: Which metrics are most effective in measuring viewers' psychological responses to horror films?

Background

Psychology, in a basic sense, is the study of how and why organisms, particularly humans, think and act the way they do (Dine Young 11). This study includes trying to understand human emotions (Dine Young 97). Psychiatric research demonstrates that films commonly arouse

emotions in viewers, and on rare occasions, the psychological impact of a film is so strong that it has traumatic mental and physical effects (Dine Young 140). While such surveys excellently demonstrate the potential that a joint study of film and psychology may have, they also exemplify how most studies within the field of psychology on the impacts of films primarily focus on the effects of a film or genre as a whole. For example, in a recent study, researchers found that commercially successful films produce similar neural activity in viewers (Barnett). While this shows that films create collective psychological responses in viewers, it too does not explain what in particular about a film is impactful.

Film theory, on the other hand, takes a focused approach to the specific components of a film. *The Film Experience: An Introduction*, a prominent film theory textbook, extensively explains why different filmmakers have used certain techniques and styles (Corrigan). Again, such information is incredibly useful, for it demonstrates that the different components of a film are crafted with an intention to convey meanings and emotions and that there is a system of categorization by which these components may be analyzed. That being said, there is a lack of empirical evidence within film theory that these techniques and styles actually have their intended effects. Even works, such as *The Tools of Screenwriting*, that exemplify how filmmaking may be a formulaic endeavor, stop short of proving the theories they propose (Howard).

What if, though, an understanding of the psychological impact of specific film components was developed? Michael Grabowski, a published editor of work on neuroscience and media, suggests a more specific understanding of film's impact on emotion will allow filmmakers to accurately target specific emotional responses (Loria). In other words, they could know definitively which filmmaking elements to include in order to evoke desired viewer responses.

This is particularly promising for horror films, which create enjoyment through fear (Dine Young 140), for horror is already known to cause strong psychological reactions (Loria). What further enjoyment could filmmakers create when they take a formulaic approach to creating fear guided by psychology?

This potential has not gone unnoticed. In 2013, Arthur P. Shimamura, a neuroscientist at the University of California, Berkeley, coined the term *Psychocinematics* to describe the emerging study of the psychological impacts of film. Yet, while his text, *Psychocinematics: Exploring Cognition at the Movies*, outlines the new field's development, it demonstrates how there is still a lack of research definitively showing the impact of film techniques and styles on viewer emotions (Shimamura).

Due to this untapped potential, I wish to study the psychological impact of specific components of horror films on viewers. However, there is no clear understanding of which metrics should be used to measure viewer reactions. Numerous studies have demonstrated the potential of heartrate (Barnett), eye-tracking (Lee), and surveys (Barnett) for evaluating the psychological responses of viewers, including levels of fear. Still, there is yet to be a consensus on which is most effective. To ensure further research on psychocinematics is effectively carried out, the methods for doing so must first be evaluated. In my research, I plan to study the metrics suggested above to identify which is most effective in evaluating viewers' psychological reactions to horror films.

Methods

My research will be formatted as a pilot study. The first step in my research will be to obtain Institutional Review Board approval. I will ensure I perform ethical research primarily by using a questionnaire to find subjects who enjoy watching horror movies, which minimizes the

chances of subjects being negatively impacted. While this will limit the external validity of my research, it should not impact my ability to use my results to suggest which metrics to use in future research.

Once I have a pool of about forty subjects, I screen stock footage of ordinary objects, including, among other images, a moth, a logging truck, and a hotel hallway, to groups of three subjects at a time to establish a baseline for their psychological responses to media. This will be done in Loyola Marymount University's Mayer Theater. I will measure their reactions with an Apple Watch (heartrate monitoring), eye-tracking cameras, and a post-screening survey that asks about what emotions they experienced and why they believed they experienced them.

A week later, I will call the subjects back and monitor their responses to scenes from *The Silence of the Lambs*, *Final Destination 2*, and *The Shining*, films which contain the abovementioned images and are of the horror genre or are otherwise known to induce fear (Dine Young, Appendix C).

A week after the second screening, I will screen the ordinary stock footage again and monitor viewer responses (While not contributing to the main goal of my study, this simple extra step will allow me to see if the horror films have long-term impacts on viewers. Below, I explain why this addition to my research will benefit future studies).

Expected Results

In collectively analyzing these results, I can assess the different methods of evaluation based on the following patterns: If both the physical and verbal responses from each viewing vary greatly between subjects, I can conclude that subject responses to the clips shown are not consistent enough to determine which metric is best for measuring viewers' reactions. If the survey results are consistent but the eye-tracking and heartrate results are varied, then it may be

assumed that neither eye-tracking nor heartrate monitoring are sufficient metrics for studying viewer responses to horror in this context. A survey may be the only reasonable approach to such a study. If, however, either the eye-movement or heartrate results are consistent across subjects within the same round of viewing, then that may be the most appropriate metric for studying viewer response to horror. In this case, it will be especially interesting to see whether the survey results are consistent with the physical metric. Is the conscious response of a viewer different from the instinctive response?

Overall, I expect to see which metric(s) would provide the most consistent results for evaluating viewer psychological responses, as measured through fear, in future studies. Furthermore, by comparing the baseline results to the results from the third week, I may begin to study whether any of the films in particular had long-term impacts on viewers. If this is the case, the techniques in that film may be particularly effective, and thus, future studies may better be structured by focusing on those techniques. Finally, I will publish my results in a paper.

Conclusion

Both film theory and psychology study how films generally impact viewers. However, there is a lack of research on how specific film components impact viewers' thoughts and emotions. If filmmakers fully understood the effects of film styles and techniques, they could craft more effective films, particularly within the horror genre. Yet, it must first be understood how viewer reactions can be effectively evaluated. As such, I plan to ask what are the best metrics for evaluating responses to horror films. I will answer this question and lay groundwork for future studies by comparing the results generated by heart-rate monitoring, eye-tracking, and written surveys in a pilot study of viewer reactions to horror films.

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Necessary Resources/Budget

Resource	Cost
3 days in Mayer Theater (Each one week apart)	\$0
Institutional Review Board Approval	\$0
40 subjects (\$12 per hour compensation. 1 hour per week for 3 weeks)	\$1,440
3 Apple Watches	\$1,200
3 Eye-Tracking Sensors	\$600
Survey (printing)	\$50
TOTAL BUDGET	\$3,290