

The Uncanny Valley: Utilizing Hyper Realism as a Narrative Tool in Contemporary Animation

Abstract

In the pursuit of photorealism in animation, one major challenge persists and that is the uncanny valley. The use of hyper realistic characters has historically done more harm than good, causing unease and discomfort with viewers. As a result of this, filmmakers and animators have sought out to overcome the valley with advancements in motion capture and rendering technology. Although the effects have been somewhat diminished, the issue still remain. This raises the question: instead of avoiding the uncanny valley, can filmmakers use it to their advantage ? This report aims to answer that question, arguing that the uncanny valley can be deliberately and strategically used as a tool in storytelling.

Keywords: Uncanny Valley, Hyper Realism, Animated Films, Digital Characters

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Introduction

With recent advances in Computer Generated Imagery (CGI) bringing animation closer to photorealism, one might expect audiences to welcome hyper realistic characters, but instead these characters are often met with disdain, as they provoke a feeling of discomfort in viewers. This response, commonly referred to as the uncanny valley, has been traditionally seen as a limitation in 3D animation, with animators and filmmakers having to employ various techniques to avoid or mitigate its effects (Brenton et al., 2005).

This report aims to challenge that notion, arguing that the unease created by these hyper realistic characters can be deliberately harnessed as a tool in storytelling.

Literature Review

Introduction to the Uncanny Valley

The concept of uncanny valley was first proposed in 1970, by Japanese robotics professor Masahiro Mori. In his essay, Mori hypothesized that people would quickly shift from empathy to revulsion while encountering humanlike robots (Mori, MacDorman and Kageki, 2012). He suggested that increasing realism would initially increase familiarity and acceptance, until it reaches a certain point, which he described as the valley, where that familiarity would drop and quickly change to discomfort.

This happens because increased human resemblance makes it easier for people to spot subtle imperfections. When faced with these realistic robots, there is generally an expectation of complete human accuracy, fueled by an instinctive need to connect with something human. As a result, when they fall short of those expectations people quickly lose the empathy they previously formed. Elements that cannot be accurately replicated in robots such as subtle

movements, facial expressions and skin quality, become very noticeable, throwing people off and reinforcing the discussed phenomenon.

The Uncanny Valley in Animation

Although the uncanny valley was initially proposed in relation to the creation of humanlike robots, it has since been discussed in the context of film, especially in discussions surrounding the use of hyper realistic computer generated (CG) characters. Much like humanlike robots, slight imperfections such as inaccuracies in skin shading and subtle motions like eye darts are also easily noticed by viewers when watching hyper realistic characters, causing the same revulsion that one would experience while being faced with a humanlike robot.

The uncanny valley became a prominent discussion in animation after the release of *Final Fantasy* in 2001, whose hyper realistic features were initially seen as a technological achievement, but ultimately did not succeed commercially (Kaba, 2013). It is generally believed that *Final Fantasy*'s box office failure can be attributed to the uncanny valley. Many critics described the discomfort the characters caused them, with Peter Travers of *Rolling Stone* magazine noting, "...but then you notice coldness in the eyes, a mechanical quality in the movements." (Marisa Book, 2007, cited in Kaba, 2013). In the subsequent years, many popular animated films, such as *The Polar Express*, *Beowulf*, faced similar criticism. These films all received harsh reviews, for their failed attempt at creating convincing life-like animations (Kätsyri, Mäkäräinen and Takala, 2017). As a result of this, the uncanny valley has been seen in the animation world as a major thing to avoid, with animators employing various techniques just to prevent it from happening. Lucia Modesto, while working on Dreamwork's *Shrek*, one of the most successful 3D films of all time, noted that her team had to pull back when designing the

character Fiona as she was beginning to look too real and it was creating a distinctive unpleasant effect (Kaba, 2013).

Avoiding the Uncanny Valley

The evolution in motion capture technology has been instrumental in upending the uncanny valley in contemporary animation. It allows real life actors to act out scenes, capturing more accurate motion, body language and facial expressions. It also gives actors the opportunity to add real personality to a character, preserving human nuance and emotional authenticity. Another important advancement in escaping the uncanny valley, has been the use of rendering techniques such as subsurface scattering to create more realistic and appealing skin textures for computer generated (CG) characters.

Despite these technological advances, the uncanny valley remains difficult to conquer. Even with productions that make use of realistic motion capture and advanced rendering techniques, it is still possible to end up with characters with no emotional authenticity. This indicates that the problem of the uncanny valley is not a only a technological problem and therefore cannot be solved through technological advances alone(Geller, 2008). This is evident when looking at films such as *The Polar Express* and *Beowulf*, which made use of motion capture technology, alongside some of the best actors in the industry, but still could not deliver convincing performances (Kaba, 2013).

Uncanny Valley as a Narrative Tool.

Rather than seeing the uncanny valley as a problem to be solved, animators could see it as a resource in storytelling. The discomfort caused by the uncanny valley can be intentionally

harnessed to signify alienation or identity instability. This can be an effective tool for psychological horror films, sci-fi, or dystopian films in which the emotional response of the viewer is meant to be one of unease rather than empathetic involvement. By reducing empathy, filmmakers could also put a layer between the audience and characters, encouraging the viewers to pay more attention to motives and symbolisms rather than identifying and sympathizing with the characters. The alienation of characters caused by the uncanny valley could also be used as a tool in telling emotionally heavy stories. Telling stories that involve heavy emotional trauma, can be difficult when the audience can easily relate to or empathize with the characters who are often the victims of the trauma. Filmmakers can easily circumvent this by using hyper realistic characters as a psychological buffer, allowing disturbing events to unfold without risking traumatizing the audience.

Conclusion

In conclusion, in the context of hyper-realistic animation, the uncanny valley should be recognized as more than an issue related to the technology itself, but as a natural phenomenon that could still hold high narrative value. Even with the development of motion capture technology, the visual inconsistencies that were first noticed as early as 2001 with the release of *Final Fantasy*, still remain. This enduring presence of the uncanny valley suggests that it is more than a barrier to immersion, but can also be a powerful expressive space within animation. Animation and film can utilize and explore the uncanny valley in a manner that treats the feeling of unease as a potential storytelling tool. Hyper-realistic characters can provoke unease, challenge empathy, and reinforce complex narrative themes. When employed with intention and control, the uncanny valley becomes a tool for emotional manipulation and thematic exploration,

expanding the expressive possibilities of contemporary animation. As animation continues to evolve towards photorealism, its most compelling uses may not lie in its ability to perfectly imitate life, but in a strategic exploration of what it means to fall just short of it.

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