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## Swing: 2D and 3D Animation in Virtual Reality Work-In-Progress

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## Swing: 2D and 3D Animation in Virtual Reality Work-In-Progress

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*Abstract— Swing is a narrative film in virtual reality space utilizing 2D and 3D animation techniques combined in Unreal. The story unfolds in overlapping acts that depict the internal and external struggles of a young girl who is attempting and failing to swing on a playground swing. As she struggles with the swing, a rising inferno of jealousies surround her and the VR viewer. In this headspace, she imagines the demise of the children swinging successfully around her, and anger continues to build until she ends up taking it out on herself. When she finally hits rock bottom, she lets go, leans back, and swings. This film is a collaborative project between Mari Jaye Blanchard, Mark Reisch, Vicky Mejia Yepes, and was presented by Assistant Professor Reisch.*

*Keywords—VR, narrative story, swings, 2D animation, Quill animation, 3D animation, Unreal, virtual reality.*

In the film *Swing*, viewers are immersed in the animated mind of a girl on a playground who has become frustrated with herself for not being able to swing like the other children. The 3D-animated characters (representing the “real” world) become increasingly overshadowed by a coliseum of arches housing 2D-animated looping souls in a teenage take on Dante’s *Inferno*. Depending on the viewer’s proximity to the loops as they slowly rise from the ground, the souls’ stories can be heard. These stories are fictionalized versions of anonymously-collected accounts of jealousy as described by a diverse population in an online survey, and are combined into a single character’s experience to unify the struggle.

As the other children succeed, the viewer descends into the young girl’s personal hell, and bears witness to her anger via line animations created in *Oculus Quill*. The girl attacks the other children, albeit only in her mind, and the *Quill* lines disrupt the view of the 3D characters. When the girl begins attacking herself, she is momentarily launched into the air in a false and unsustainable flight. Her sobering return to the ground casts a literal light on her situation, and in looking towards that light she leans back, prompting the swing to swing.

The *Unreal* gaming engine was used to bring all the interactivity and production together to be viewed in VR. This film was presented as a work in progress.



*Fig. 1. Opening playground scene before entering Inferno*



*Fig. 2 Two characters inside the Inferno as the souls rise*

## I. DEMO OF FILM

While *Swing* is superficially about children on a playground, its overarching theme of frustration spawning hope springs from the experiences of two real women encountering adversity in seemingly small but impactful situations. This theme was partnered with virtual reality's singular ability to immerse viewers in an experience, and the recognition that VR stories based on emotion are less common than those focused more on action. This opportunity for empathetic viewing greatly altered the original format of this story, but the resulting iteration, which enabled the inclusion of over fifty shared stories, is that much richer.

## II. CONCLUSION

Virtual Reality offers new and exciting avenues for storytelling. The viewer is no longer locked to a 16:9 flat form, and can thus explore at will, presenting the director with the option of encouraging interactivity that can change the experienced narrative. In this film we are exploring how the viewer will engage with the narrative given two parallel but distinctly different stories that weave through each other, in the hopes that all iterations convey the thematic heart of the film.

Link to demo: <https://youtu.be/28CGKzT95x8>