

Dissertation Intro Draft

~~Head mounted format~~ virtual reality is currently experiencing a massive resurgence in popularity. The two dominant competitors in the market, Oculus and HTC, offer hardware at consumer-attainable price points. When I initially began conducting this research, building a computer with reasonable specifications for VR, and HTC Vive hardware cost about \$3000. Although this setup still remains the industry standard for VR development, Oculus has released much more reasonably priced hardware in the time since then. The Oculus Go, a self-contained head mounted VR display that does not require a computer to run is currently available for around \$200. This aggressive pricing, and fast innovation on the part of VR hardware manufacturers suggest that head mounted VR has finally poised itself for mass adoption - something it failed to do during previous waves of VR popularity throughout the last few decades.

Along with these hardware developments, there have been commensurate advancements in the software tools that VR developers use to create for the head mounted VR platform. For my own research I have used the Unity game engine to develop my VR simulation. The code library most widely used for Unity-based VR development at the time I began to program my software was *SteamVR*. In the time since beginning this project, *SteamVR* has enjoyed constant development, increasing ease-of-use even for those without a traditional programming background such as myself. In addition the continued improvement of *SteamVR* a number of other VR libraries for Unity have been developed. Due to the increased development of all of these libraries, ease-of-use has become a major selling point. The competition between libraries has driven the technological “barrier to entry” down significantly.

As the technological barrier to entry for these tools has decreased, they have proportionally become more attractive to artists. Part of this attraction stems from the sheer tactical concern of being able to spend more time creating than learning a new programming language from the ground up, or any other related inconveniences that may come as a result of integrating new artistic technologies into one’s work. The result of this phenomenon has been an increased number of computer musicians exploring the connection between music and VR.

This incident is not isolated, and I theorize that it is part of a larger movement in all medium creative work that I have dubbed the Postmodal Era. Although this work focuses mainly on the music-VR connection, it is important to understand the context into which this phenomenon fits, and the implications it will have for future artistic work in the community at large. As with the lowering of technological barriers to entry within the sphere of VR development, similar phenomena have occurred, and are currently occurring in almost every other artistic discipline. I first became aware of this around 2013 when I began to explore 3D animation. There were two key discoveries that I made around this time that suggested a larger phenomenon was occurring. Firstly, it would have been very difficult for me to incorporate 3D animation into my work even five years prior. Briefly put, reasons for this likely included the rapid increase of CPU/GPU speed in consumer-level computers, and the simplification of tools being used for animation. Secondly, after attending most of the major national and international conferences in computer music, I noticed that there was an increased representation of multimedia work, and specifically 3D animation. It was clear that this evolution towards

Rephrase HTC and Oculus as “dominant competitors in the market offer, hardware at consumer attainable price points that continue a downward trend

Code libraries such as SteamVR increase the ease of use even for those without traditional coding backgrounds. Improvement on such libraries continues to develop. Thus ease of use has become a major predictor of adoption.

Condense verbiage a bit here?

“in creative work that incorporates a wide variety of mediums”



Other than Unity, take out references to other specific technologies



change incident to phenomenon or something?

postmodality was happening not only in my own work, but internationally. Put simply, the Postmodal Era is an era of artistic work that releases the compulsory fealty of the artist to any set medium.

Within the realm of the postmodal music-VR connection, scholars such as Hamilton, Serafin, and many others have created a number of interesting case studies exploring this link. The first section of this work is dedicated towards summarizing their research and drawing a boundary around research that can be considered useful for further research into this connection. So far little research has been done into how to approach this combination of mediums from a design perspective - essential info for those starting off in this new field. The second section of this work explores the deeper implications of existing research on this connection, and integrates more tangentially related disciplines that contain useful information on the link between music and VR. The psychedelic experience, symbolism of dreams, and artistic involvement in multimedia are examined in this section, and are considered as a larger gestalt, as myth. Examples of myth as a governing principle in historical postmodal work are considered in one of VR's parent disciplines, opera, as well as one of my own works for fixed media audio and 3D graphics. This analysis is conducted with the intent of putting forth a new framework for those creating in this music-VR medium.

In the final section of this work I codify the trajectory and symbolism of myth in terms and concepts illustrated most clearly by the work of Joseph Campbell in his monomyth model. I apply this model in the development of my own VR case study *Spektra*. After an initial public testing session of *Spektra* I corroborated feedback from participants and developed a modified version of the music-VR instrument for another testing session.

I conclude with ending remarks on this iterative development of *Spektra* and resultant findings. It is my hope that this work is helpful for computer musicians wishing to integrate VR into their own work. In the first two sections, theoretical principles are presented which serve not as an exhaustive literature review, as the VR field is far too amoebic to rigidly pin down, but as a demonstration for the music-VR artist beginning their own research. Of course my own literature review will provide some useful jumping-off points in terms of scholars to read and important papers in this area. The iterative nature of the creation of *Spektra* will serve to illustrate one potential framework that I have found useful for creating a work that utilizes the music-VR connection.

