

Strengths, Weaknesses, and Design Constraints of VR LARP

First a few disclaimers. VR is a relatively new medium for LARP and so it is still developing. While I'm sure that roleplay in VR has existed in one form or another since the creation of VR, dedicated roleplay groups first began popping up around six years ago. The roleplays that existed back then are basically unrecognizable compared to the ones that exist today (April 2024), and so, the discussion in this document will be limited to approximately the past two years.

Additionally, I have never participated in a real life LARP before. I have read a lot about Nordic LARP, but am distinctly aware how difficult it is to convey how it feels to participate in a roleplay through words alone. I do however have the experience of adapting variousLARPs and roleplays for play in VR and so can speak to some of the things that worked and didn't work.

Finally, everything that follows is the opinion of one person. I would draw from community wisdom if I could, but almost all discourse related to VR roleplay takes place verbally, or in private groups. We are currently in the process of encouraging discussion surrounding VR roleplay design, especially in the written form so that people outside of the discussion might be able to reference those discussions in the future.

Choice of Platform

Before we begin talking about VR LARP design, we must discuss the hardware and the software.

There are two major types of VR headset that have their own pros and cons. PCVR encompasses any VR headset that uses an external computer to run its software. These headsets tend to be wired to an external computer that is responsible for running the software. With this type of headset, the quality of the VR experience will depend greatly on how powerful of a computer it is connected to. Modern desktop computers tend to be fairly powerful nowadays, but laptops or older computers will likely struggle to support VR.

Android headsets (sometimes called standalone VR) are a complete package. The headset itself has a computer powerful enough to run VR inside of it, without the need for any external hardware. These headsets tend to be cheaper than purchasing PCVR, as they do not require the purchase of a powerful computer to function. They also tend to have wireless capabilities. However, these headsets also tend to have relatively weak hardware, usually being just enough to run VR. This limitation can lead to compatibility and performance issues for any application

that was not specifically developed with Android in mind. Additionally, being wireless, these headsets also tend to struggle with battery life. For the purpose of roleplay, I would recommend purchasing a battery pack alongside a standalone headset to greatly increase its battery life, while still being significantly cheaper than PCVR. As a final note, most standalone headsets can be connected to a desktop computer and used as a PCVR headset.

In my opinion, there are two publicly available platforms that as of the time of writing, are relevant to running VR roleplay. While it certainly may be possible to run roleplays in other platforms, all the other publicly available ones come with some serious downsides. Additionally, this is only considering publicly available platforms. While it would certainly be great to create our own platform for roleplay, no one in the community has the time nor the resources to put together something like that.

VRChat is currently the most popular VR application. It is primarily a social platform and is not designed specifically for roleplay. VRChat allows for users to upload custom avatars and worlds using most, but not all of the features of the Unity Game engine. Given its popularity, as a social platform, the majority of the current VR roleplay community is based in VRChat. VRChat is available both for PCVR and Android headsets, however, not all user uploaded content is created to be compatible for Android headsets. Unfortunately, many roleplays in VRChat are not available for Android as a result.

Strengths of the Medium

I believe that the two main strengths of VR LARP are in Accessibility and Embodiment. Accessibility comes in all forms:

There is of course the initial investment of purchasing VR, and setting up a space to use it. But once you do, the cost of participating in roleplay becomes fairly negligible. There is of course no need to travel to a VR LARP, which allows people from all around the world to participate in the same game rather easily. A side effect of this is that it becomes easy to participate in more roleplays. There are already multiple roleplays being run on every day of the week, increasing the chances that at least one of them fits your schedule (though I must admit, the vast majority of these do not resemble the Nordic Style). Many people in the community regularly roleplay multiple times per week.

The major recurring expenses that the VRChat roleplay community faces involve the creation of bespoke worlds and custom avatars. It is impossible to give a single estimate of cost, since that will depend greatly on the complexity and scope of the project. But if you would like something custom made, you will either have to commission someone else to do it for you, or take the time to learn 3D modeling and the Unity game engine. Fortunately, both the major VR platforms mentioned give us the tools to avoid world and avatar design entirely if we wish.

VRChat boasts millions of public avatars and worlds that users publish to the platform for others to use freely. It may take a little bit of searching to find something appropriate, but it is often possible to find that what you need has already been created by someone else.

Aexia comes with a built-in world creator that is easy to use even without any technical knowledge. As such, you can use it to create custom worlds without too much effort. While it is not implemented in the platform yet, one of the development goals is to incorporate the [Ready Player Me](<https://readyplayer.me/>) avatar creator into the platform to allow users to easily customize avatars for themselves.

Being virtual has some benefits for the comfort and physical safety of players. I personally struggle in crowded spaces, as I am easily overloaded in loud spaces. But being in VR allows me to literally adjust the volume of other players to a comfortable level, which has allowed me to roleplay in situations where I know I would have been extremely uncomfortable in real life.

There is a large subculture of players in VRChat who for one reason or another, choose to not speak in-game. Some people may be mute in real life, but there are others who are deeply uncomfortable with their voice or have some other personal reason to not speak. Players may communicate in game with text, but also more recently, Speech to Text to Speech software has become more accessible and many people use this to give themselves a voice.

I could likely think of more examples, but hopefully that gives you some idea into the sort of accessibility that VR can provide.

Embodiment is a bit more straightforward. While I've seen some very cool LARP costumes, the high-end of exploration and creativity offered through virtual avatars is not really comparable to LARP costuming. Of course, if playing a human character, one can embody any image body-type or imaginable. But that's only the beginning. I've seen people play anthropomorphic animals, robots, giants and dwarves, werewolves and other shapeshifters... In a fae themed roleplay, I have personally played a 60 cm tall fairy, and I would often fly up and sit on the branch of a tree next to another person who was playing a talking bird, all without needing any game mechanics or GMs to facilitate (being that small lead to some very interesting conversation dynamics with more human sized characters).

While adding extra complexity or scope in this way obviously makes design more difficult, it feels like there is a vast design space here that is still only just beginning to be explored.

Weaknesses of the Medium

VR roleplay is overall less immersive than IRL Larp. There are certainly cases where immersion can be enhanced through VR. However, the VR headset on your head, and the controllers in your hands serve as a constant reminder that the world is not real. In order to stay safe, players must maintain awareness of the physical world to avoid running into walls, or falling due to something in the room. It is something that you can eventually get used to, but with the current technology, it is not possible to create anything resembling a 360° LARP in VR.

Additionally, there is definitely some nuance in communication that is lost in VR. We mainly play with our eyes and ears. Smell and taste and touch are not present in VR whatsoever. Touch is a bit different in that some people experience a "phantom sensation" when their avatar comes into contact with another person's avatar. But this is distinctly different than touch because it requires sight or sound to be felt, and many people just don't experience it at all.

By default, a basic VR setup comes with three point tracking. That is, it tracks your head and your hand movements. Depending on the headset, the controllers may or may not track your finger movements, but a basic setup definitely doesn't track your legs. It is possible to set up to 10 point tracking, adding feet, chest, elbows and knees, but each extra tracker is an additional cost. Not to mention that in order to fully take advantage of this extra tracking you need a large space that allows you to move around without bumping into obstacles.

Face and tracking is not yet a common feature of VR headsets, and even if a headset supports it, most avatars do not. This means that your facial expressions do not get conveyed to other players at all. What most roleplayers in VRChat do is to use either hand gestures or the built in menu to control their avatar's facial expression.

With all of this combined, roleplayers usually end up "puppeting" their avatars. Instead of reacting as you would in real life, you think about how to best project your character to others through the means that you have available to you. This is something that can be gotten used to for sure,

Design Constraints

These things aren't inherently strengths or weaknesses in my opinion, but require designing around:

VR roleplay necessitates breaks, and those breaks must be out of character. In a long LARP, one might include time for food and drink or other forms of rest. However, it is very difficult to rest while wearing a headset, and it is even more difficult to have that rest line up with what is going on in-character. You might have a meal in character, but not have any food prepared in real life. Or your character may lean against a wall to relax, but there isn't an actual wall near you and so you end up holding an uncomfortable position. Finally, even light VR headsets add a non-negligible amount of weight that your neck has to support. In my opinion, the practical limit for a session of VR roleplay is around four hours. You can sometimes exclude setup and debrief times from this limit, as players can often sit down and rest during these times.

VR roleplay is prone to players disconnecting. Players with poor internet connection may struggle to play, and roleplay may be abruptly and unceremoniously interrupted at any time if the platform being used has server issues. Thankfully this doesn't happen too often on a large scale, but individual players may disconnect more often than others. More commonly, VR can be very performance intensive, and with lower end hardware, is prone to crashing. Aexia avoids this problem because their assets are all optimized by their developers. However scenarios designed for VRChat must leave room for players disconnecting due to technical issues.

Being online, we have to deal with network latency. In order to ensure a smooth connection, most platforms intentionally add a delay to their networking to act as a buffer. In most social settings, this is not too big of a problem. But any activity that requires synchronization between players ranges from very difficult to impossible. Because you are seeing other players a second or so in the past, people will be more prone to talking over each other. Things like singing on time, or rituals that require synchronization are usually impossible to perform live.

The final constraint is specific to VRChat, as while Aexia's built in worldbuilder is less flexible than the Unity Game engine, it is significantly easier to use. In VRChat, we have the luxury of creating exactly what we want, but we also have the burden of being forced to create everything. Worlds in VRChat tend to be static. This means that anything that isn't explicitly designed into the world by it's creator will not be present during the runtime of the roleplay. If a character would like to take a drink, and the world didn't have any cup props explicitly designed into it, you will be stuck using theatre of the mind. This has to be done for every single aspect of the world individually. In fact, if you add cups to your world, you will also have to add the ability to pick up those cups separately, because by default they will be immovable objects. We also have to be picky with what we do add. Each additional asset added to the world will decrease the performance of the world, eventually leaving players with uncomfortably low framerates. This applies to avatars too. VRChat has a hard maximum of 80 players in one instance. A more practical limit is 60 players for PCVR and 40 players for standalone. This is usually around the number where performance becomes too low to be playable for most people, even with optimized avatars. We've had one roleplay that circumvented this limit by hosting multiple worlds simultaneously, but this becomes a difficult logistic task.

In a way, it becomes easier to create big things as opposed to designing small details. Since each asset must be added individually, it may take the same amount of effort to add an entire building to a world as to decorate a single table within that building. This problem is compounded because for technical reasons, it is not easy to split the work of world design between separate people. Most roleplays usually have only one world creator design the whole world by themselves. For this reason, many existing roleplays use GMs to fill in the gaps for anything that did not make it into the world.