

# *Storyboarding and storytelling in VR*

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Since we are investigating the VR medium from storyboarding and previsualisation perspective, we would like to discuss tools and methods that we can incorporate in our exploration of VR storyboarding. Before we get into the meat of storyboarding with and four VR, we need to outline the purpose of storyboarding. The main aspect to consider in storyboarding is that it is used to communicate and translate the visuals from script to screen. These visuals are used to pitch ideas to the director and different departments to communicate the base level of pre-production work required for any given scene. Storyboarding as a tool for quick iterations not only helps in pre-production but can also be used as an effective method to pitch for projects' funding.

Here are the key elements of storyboarding that remain universal even in the VR workflow:

- Storyboarding is efficient in speed and economical being a useful tool for planning.
- It identifies the major beats and plans for continuity in storytelling.

Using these characteristics, we can move on to identify the requirements for VR. What makes storyboarding and storytelling in VR different?

Since the very beginning of film making our means of communicating visuals was captured within a simple 2D plane. This is called *framing*. Using the fixed frame, we can easily compose a shot showing the audience exactly what we want them to see and convey depth in creating the illusion of 3D within this fixed two-dimensional plane. However, in VR we can only suggest framing through composition since the user is given free rein in three in a 360-degree frameless environment. Before we find solutions to framing, here we point the difference between games and films and what VR has to offer in relation to these two genres. Conventional film involves a more passive form of consuming and entertainment, whereas in both games and the use of VR it always requires a certain level of interactivity. Interactive films and VR films attempt to combine the two. However, I would like to discuss the potential options for VR games without involving too much interactivity from the user.

The main problem with VR film is attention. How can we have as phone makers control what the viewer sees so as to not miss pivotal story elements? Logan Dwight pointed out that “film is all about controlling the viewer’s attention by framing subject matter” however, we lose this control entirely giving the viewers control over what they focus their attention on. To grasp the users’ attention, one must understand the different types and learn about the psychology of attention. Selective attention is obtained by intensive changes in the environment. Dividing attention suggests that a user requires directed attention only ones at a time, whereas a sustained attention as a combination of previous types to involve the viewer for a long period of time.

Let us begin with some of the solutions of obtaining attention. The first idea is a cone of focus. Understanding that focus in VR is broken up into primary, secondary, and tertiary will allow to choreograph actions according to their importance. Primary action is what film makers want the audience to focus on. Secondary action are areas that support and keep the user involved in primary attention. Tertiary represents the extremities of low interest. To keep the viewer immersed in primary and secondary zones is important to note that the angle of view is also difficult in this area as we will later discuss. Guiding action is within the primary and secondary that takes a user into different areas of focus. If the viewer shifts their position the primary action, other zones shift accordingly. Here is an example from the film Pearl (Osborne, P.,

2017): a simple shift in alignment of objects in the case of the film's characters can increase and divert areas of attention (Figure 14)



Fig 14. Pearl (Osborne, P., 2017)

As seen below, (Fig.15) with the image of the baby most attention is focused on the babies face however, changing the alignment towards the text causes the area focus to spread into the words.



Fig 15. Attention focus changes with alignment.

Tiding action and shifting attention also depends on comfortable viewing angles. Comfortable fields of view vary from 90 degrees to 154 degrees; however, this may vary depending on whether the user is seated or standing. Distance also plays an important role in attention since humans have evolved to pay more attention to objects closer to them.

The sweet spot in VR space ranges between 0.5 to 10 metres; beyond 20 metres objects become almost entirely unnoticeable. One major aspect of grasping users' attention through VR or points of interest (POI) for monotonous image as evidenced in the Icelandic Rocks have zero points of interest which encourages the viewer to look around for areas of focus whereas in the Japanese Tram scene there are several points of interest: the people, the environment, the conductor, etc. (Figure 16).



(Fig. 16) Japanese Tram

It is important to note that too many points of interest can cause zero POI effect. Moving on to the types of storyboarding for and with VR there are several combinations that can be encouraged depending on what is being produced but few of which are presented in this article.

Despite the ever-growing variety of tools and software one universal aspect of storyboarding remains right and true: Thumbnailing. It covers most important elements and will remain in use to Neuralink, replacing the efficiency and speed that it provides. Conventional methods of storyboarding despite many attempts to keep 2D relevant in this storytelling space seems unreliable at this point. Too many efficient tools are on the rise to depict important elements of primary secondary and tertiary action within the VR space; therefore, in this space it is important to note that these tools remain only relevant within the first iteration

of visualising during thumbnailing, or immediately from script. Software like Blender combining efficient methods of 2D sketching and 3D modelling allows users without a VR headset to involve themselves in the creation of VR or 360 stories.

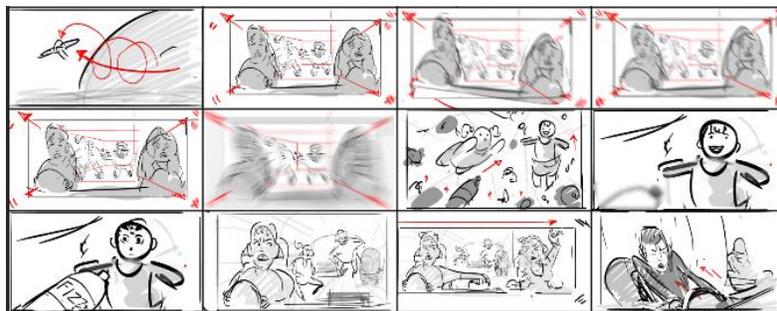
Creating a combination of blocking out 3D assets while sketching performance allows a mixture that is extremely powerful, not to mention the accessibility of cameras and animation tools to create animatics. However fascinating, several aspects of this method can and will be replaced by VR technology.

### ***Previz Photography***

Apart from utilising sketches in both the conventional and hybrid methods, movies such as *I Am Mother* (Sputore, G., 2019) have taken to VR previsualisation to photograph and prepared images before production or building sets. Despite the cumbersome activity of both blocking out 3D in a realistic manner for live action this allows the story artist and film maker to fit the boards to an almost accurate version to the set being built.

Storyboarding in VR increasingly replaces the hybrid in pre-visualisation methods utilising tools like Anim VR and storyboard VR directly. The only shortcoming is that a creative requires an expensive piece of equipment to involve themselves in VR, but this is becoming more and more accessible to people every day.

Here a showcase is presented discussing the recent storyboarding project “*Terra, Terra!*” (2020). The idea here is to accommodate for various viewpoints within a given scene that allows the audience the choice of different perspectives. Lighting cues and action will be planned in accordance with the primary action within a scene. Traditional storyboarding method has been used for thumbnailing in Photoshop. (Figure 17)



(Fig. 17) “*Terra Terra!*” (2020). Storyboard by Leroy Dias.

In conclusion, storytelling in VR will heavily depend on understanding the psychology of people and learning more and more as film makers and entertainment artists to adopt the methods of design that will actively capture user’s attention. Since film poses many difficulties in allowing a fine balance between active and passive engagement the story artist and film maker must actively participate in identifying the key elements of story efficiently and effectively to then proceed in developing and employing methods that support guiding the user’s attention in VR. In the next chapter this paper will discuss the different types of immersion in VR.

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