

Unity assets

Figure 1 shows the assets hierarchy of Unity. As explained in the *Materials* section, many virtual objects were mapped to a new *AR Origin*. This *AR Origin* was positioned to correspond to the real world, allowing the researchers to anchor stationary items to it, and easily scale and move the AR assets in the real world.

- World-locked interfaces are contained in the HMI Locations folder, which is a subfolder of the *AR Origin* and therefore stationary to this origin and thus the real world.
- The vehicle-locked interfaces are mapped to the *sedan-car-01* asset, locking it to the vehicle's position.
- The head-mapped interfaces are mapped to *XRRig*, which contains the position and rotation of the Varjo XR-3 HMD, and therefore follows the participants' head movements and appears as a HUD.
- The *GazeTimers* folder and *TextLocation* item include the positions for the attention attractor stimulus and the post-trial question respectively.
- *Planes* consists of the rigid ground planes on which the virtual vehicle drives. These are not visible to the participant during the experiment.
- *HMI Triggers* holds the triggers that influence the vehicle's behaviour, such as *Interface activation*, *deceleration point* and *stopping point*.

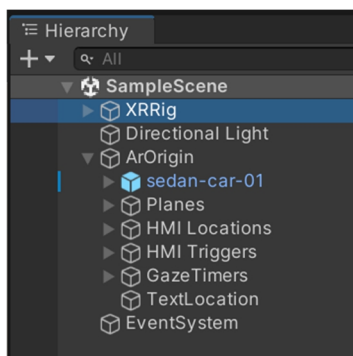


Figure 1. AR assets mapped to *AR Origin*.

Unity controls

Unity was set up in such a way that the experimenter could control all conditions from within Unity (Figure 2). The check boxes on the right under *Behaviour Script* of the UI were used to select whether the vehicle would yield or not, which interface would be active, and where the attention attractor stimulus would be located. Moving one menu up under *Logger*, the open text boxes provide the ability to insert the participant number and trial number.

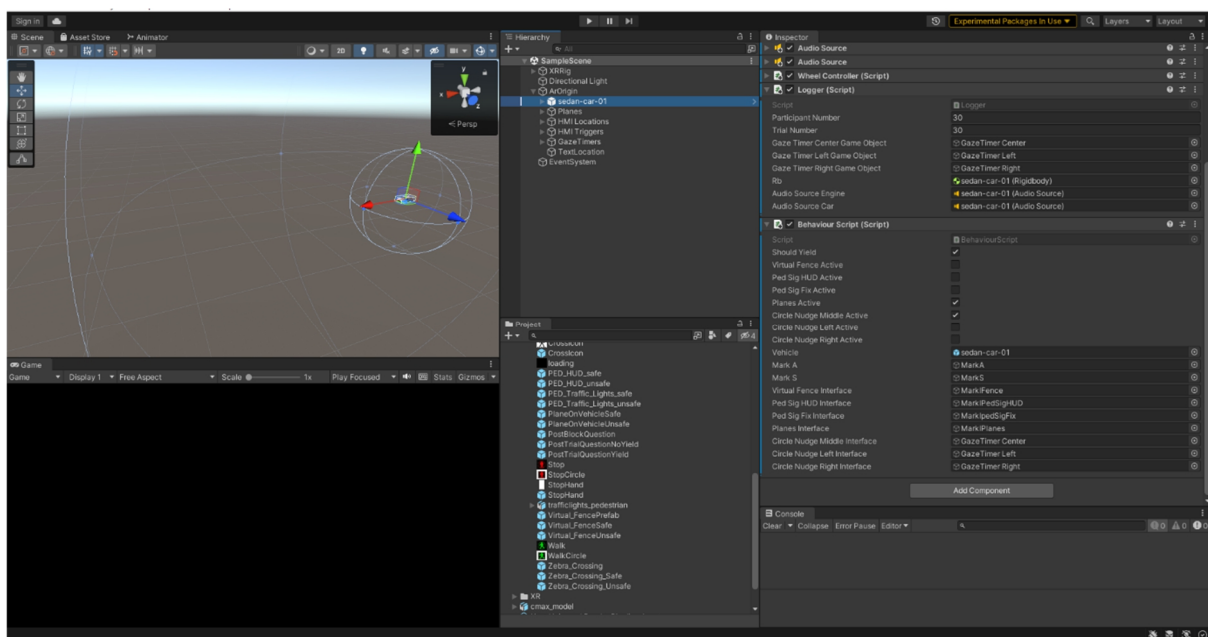


Figure 2. Unity interface via which the experiment conditions were controlled during the experiment.