

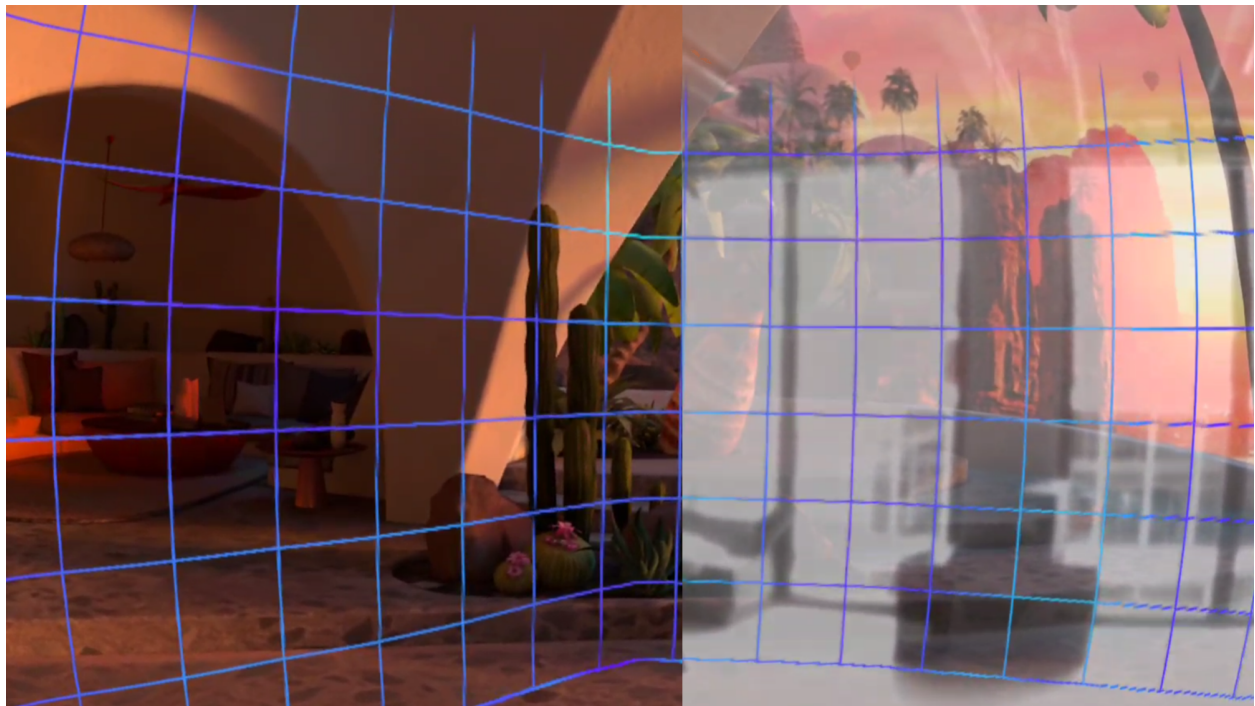
Experiences and Attitudes towards the Safety Boundaries in Virtual Reality

The goal of the survey is to investigate the users' experiences and attitudes towards the safety boundaries in Virtual Reality (VR). The safety boundaries are often a wall-shape interface surrounding the VR user's play area. They keep VR users protected in the safe zone defined by themselves. For example, Oculus Guardian, Chaperon (Vive), and Windows Mixed Reality boundary.

In the survey, we will ask you questions according to your opinion about the settings of your safety boundaries and the incidents that happened while interacting with the VR safety boundaries. In some of the questions, we would like to ask you to provide your personal experience/story of breaking out of the safety boundaries.

To participate, you must be actively using or own a VR headset with the safety mechanisms (e.g., Oculus Quest, Oculus Rift, HTC Vive, Windows Mixed Reality).

The survey should only take 10-15 minutes, and your responses are completely anonymous and confidential. You can only take the survey once. Questions marked with an asterisk (*) are required.



An image of the safety boundary in VR (example from Oculus Guardian). Current VR technologies require users to set up a play area. The safety boundary informs the VR user when she/he is getting too close to the limit of (and breaking out of) the play area.

Part 1

Q1: Which of these roles do you identify the most with?

Gamer
Developer
Designer
Researcher
Other: _____

Q2: How old are you?

Q3: What gender do you identify as?

Female
Male
Non-binary
Prefer not to say
Other: _____

Q4: Please estimate how many hours per week you use your VR headset?

Q5: Please indicate the ratio of time spent between sitting and standing up positions while using the VR headset (% of all the time spent sitting / % of all the time spent standing up).

0% / 100% (Fully Standing)
10% / 90%
20% / 80%
30% / 70%
40% / 60%
50% / 50% (Equally Spent Time)
60% / 40%
70% / 30%
80% / 20%
90% / 10%
100% / 0% (Fully Sitting)

Q6: Please indicate the ratio of use between the room scale (standing) and stationary (sitting) setups while using the VR headset (% of all the time using room scale setup / % of all the time using stationary setup).

0% / 100% (Fully Stationary)

10% / 90%

20% / 80%

30% / 70%

40% / 60%

50% / 50% (Equally Spent Time)

60% / 40%

70% / 30%

80% / 20%

90% / 10%

100% / 0% (Fully Roomscale)

Q7: When setting the boundaries, generally do you remove obstacles as shown in the instructions?

Yes, I remove them

No, I keep them inside the boundaries

Part 2

Q8: During the usage of VR, how often do you notice the safety boundaries?

Never

Rarely

Sometimes

Often

Always

Q9: During the usage of VR, how often do you break out of the safety boundaries (e.g., getting closer to the boundary and passing through the boundary with the controller or headset).

Never

Rarely

Sometimes

Often

Always

Q10: I trust the VR safety boundaries to keep me from the physical harm (e.g., colliding with the environment).

Strongly disagree
Disagree
Neither agree nor disagree
Agree
Strongly Agree

Q11: The safety boundaries make me feel safe during my daily usage of VR.

Strongly disagree
Disagree
Neither agree nor disagree
Agree
Strongly Agree

Q12: The safety boundaries are useful to keep me safe during my daily usage of VR.

Strongly disagree
Disagree
Neither agree nor disagree
Agree
Strongly Agree

Q13: The warnings of the safety boundaries are sufficient to keep me alert during VR interaction.

Strongly disagree
Disagree
Neither agree nor disagree
Agree
Strongly Agree

Q14: The warnings of the safety boundaries are sufficient to keep me safe during VR interaction.

Strongly disagree
Disagree
Neither agree nor disagree
Agree
Strongly Agree

Q15: I do continue my action in spite of the warning of VR boundaries.

Strongly disagree
Disagree
Neither agree nor disagree
Agree
Strongly Agree

Q16: The VR safety boundary makes me feel annoyed.

Strongly disagree
Disagree
Neither agree nor disagree
Agree
Strongly Agree

Part 3

Q17: Please describe how you behave after you notice a warning of the safety boundary during a VR experience.

Q18: Have you ever broken out of the safety boundary during a VR experience? We define the "breaking out" as leaving the safety boundary with any body part (e.g., controller, headset).

Yes (to Q19)
No (to Q23)

Q19: In this breaking out experience, did you notice the warning of the safety boundary?

Yes
No

Q20: Please elaborate why you broke out of the safety boundaries in VR?

Q21: Please indicate the type of applications you used when the breaking out happens.

Gaming
Productivity
Cinema

Development
Other: _____

Q22: Please describe the most memorable experience when you broke out of the safety boundaries in VR. Please also indicate why you did it, what happened afterwards and how you felt about it.

_____ (continue to Q25)

Q23: Please describe the reason why you stay inside the safety boundary and did not break out during your daily usage of VR.

Q24: Please describe the most memorable accident you had while staying inside the safety boundary.

_____ (continue to Q25)

Part 4

Q25: Please list one to three positive adjectives that come to your mind when you think of the VR safety boundaries.

Q26: Please list one to three negative adjectives that come to your mind when you think of the VR safety boundaries.

Q27: What would you change about the way that current safety mechanisms (e.g., Oculus Guardian) are working?
