

# Awareness of AR Activity Survey 2021

N.B. This survey was delivered entirely online, and used Qualtrics loops to repeat questions for each of the AR activities described in the paper and associated video figure. Where this printed version of the survey refers to `#{Im://Field/#}`, this is a variable to be replaced based on the current loop (i.e. the current AR activity the questions are focusing on).

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## Start of Block: Consent

### Q1 Bystander Awareness of Augmented Reality Activity

**You are being invited to take part in a survey which will take approximately 15 minutes to complete.**

**Your participation is voluntary, and you are free to withdraw at any time, without giving any reason, and you are free to omit answering any particular question, without providing a reason.** Your participation will help us in conducting our research, and is greatly appreciated.

Before you decide whether to take part, it is important for you to understand why the research is being done and what it will involve. Please take time to decide whether or not you wish to take part. If there is anything that is unclear, or you would like more information, or you have any questions, please feel free to raise these concerns with the researcher present, or any member of the study team.

### **Purpose of survey**

This survey will explore attitudes towards use of Augmented Reality headsets in public, and how these devices might make bystanders aware of their activity.

### **Do I have to take part?**

Your participation is voluntary, and you are free to withdraw at any time, without giving any reason, and you are free to omit answering any particular question, without providing a reason.

### **What is the compensation for taking part in this study?**

You will not be paid for your involvement in this study. However, we will offer a random prize draw for taking part (£30 amazon voucher or local equivalent if available, draw to be made by mid September 2021).

### **What will I be asked to do?**

You will be asked to complete a questionnaire which will take around 15 minutes.

### **Will my taking part in this study be kept confidential?**

Yes, all data collected from you will be treated confidentially, will be seen in its raw form only by the experimenters, and if published will not be identifiable as coming from you.

### **What will happen to the results of the research study?**

The results of the study may appear in research publications. The results may also be presented at scientific meetings or in talks at academic institutions. Results will always be presented in a confidential format where anonymity is preserved.

### **Contact for further information or queries?**

You may ask more questions about the study at any time - before, during and after - the study. You can contact the researchers, [mark.mcgill@glasgow.ac.uk](mailto:mark.mcgill@glasgow.ac.uk) and [j.ohagan.1@research.gla.ac.uk](mailto:j.ohagan.1@research.gla.ac.uk)



Q2 Please indicate your consent to take part:

- 1. I confirm that I have read and understand the participant information for the above study and have had the opportunity to ask questions. (1)
- 2. I understand that my participation is voluntary and that I am free to withdraw at any time, without giving any reason, and am free to omit answering any particular question, without providing a reason. (2)
- 3. I understand that all data collected from me will be treated confidentially, will be seen in its raw form only by the experimenters, and if published will not be identifiable as coming from me. (3)
- 4. I understand that the data collected may be used in publications, presentations or on websites where this research will be disseminated. (4)
- 5. I agree that the anonymized data can be made publicly available after this research is completed. (5)
- 6. I am over 16 years old. (6)
- 7. I agree to take part in the study. (7)

End of Block: Consent

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## Start of Block: Existing knowledge of AR

### Q3 Age

- Under 18 (1)
  - 18 - 24 (2)
  - 25 - 34 (3)
  - 35 - 44 (4)
  - 45 - 54 (5)
  - 55 - 64 (6)
  - 65 - 74 (7)
  - 75 - 84 (8)
  - 85 or older (9)
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### Q4 Gender

- Male (1)
  - Female (2)
  - Non-binary / third gender (3)
  - Prefer not to say (4)
- 



### Q5 In which country do you currently reside?

▼ Afghanistan (1) ... Zimbabwe (1357)

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Q6 Have you used Augmented Reality (AR) before?

- Yes, but smartphone AR only (e.g. instagram filters, snapchat lenses, IKEA furniture app etc.) (1)
  - Yes, including AR headsets (2)
  - No (3)
  - I don't know (4)
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Q7 Do you know what an **Augmented Reality (AR) headset** is?

- Yes (1)
- Sort of (2)
- No (3)

End of Block: Existing knowledge of AR

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Start of Block: What are AR headsets?

**Q8 Augmented Reality (AR) headsets** come in various form factors - from looking like normal glasses (see picture below), toward looking more like helmets

They typically contain a variety of powerful sensors such as cameras, microphones, and have see-through displays that allow the wearer to see computer-generated virtual elements mixed with their view of reality. These work much like smartphone AR you may have experienced previously, but all rendered on your headset or glasses instead.

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**Q9** We're going to ask you about your attitudes towards a series of activities or scenarios that might be enabled **if people in the near future commonly wear and use AR glasses in their everyday lives, replacing everyday usage of smartphones**. Each scenario will be depicted both in textual form and graphically (image or video). **Please read the text and look at the graphics before answering the questions**. There will be 11 scenarios in total.

End of Block: What are AR headsets?

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Start of Block: AR Activities / Scenarios (looping block)

Q22 Scenario or activity: [\\${Im://Field/1}](#)

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Q23 Did you know that AR headsets have this capability ([\\${Im://Field/3}](#))?

- I knew AR headsets could do this (1)
  - I was somewhat aware AR headsets could do this (2)
  - I did not know AR headsets could do this (3)
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Q24 From the perspective of being a bystander

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Q25 Imagine that the following groups were to use an AR headset to perform this activity (*{Im://Field/4}*) on, or near, you. **How would you wish to manage your consent to this, if at all:**

	Opt-in by default, no consent required (1)	Opt-in by default, with ability to withdraw your consent (2)	Opt-out by default, with ability to request your consent (3)	Opt-out - I would never consent to this activity (4)
Close friend (1)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Friend (2)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Familiar stranger (e.g. you recognize them from work or as a regular on public transport, but do not interact with them) (3)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Stranger (4)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Stranger with accessibility needs e.g. overcoming a situational, temporary or permanent impairment such as deafness or blindness (5)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

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Q26 Would you want the user's headset to be able to **automatically opt you in/out of this activity** (*#{Im://Field/4}*) based on your pre-provided AR privacy preferences, if possible?

- Definitely yes (1)
  - Probably yes (2)
  - May or may not (3)
  - Probably not (4)
  - Definitely not (5)
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Q27 If **a stranger were to use an AR headset to perform this activity** (*#{Im://Field/4}*) on, or near, you how concerning would this be?

- Very concerning (1)
  - Somewhat concerning (2)
  - Neutral (3)
  - Unconcerning (4)
  - Very unconcerning (5)
- 

Q28 Is use of this feature (*#{Im://Field/4}*) on an AR headset **more or less concerning to you than using this feature on a smartphone or tablet?**

- Much more concerning than smartphones (1)
- Somewhat more concerning (2)
- About the same (3)
- Somewhat less concerning (4)
- Much less concerning than smartphones (5)



Q29 The following questions refer to different ways by which an AR headset could make bystanders aware of it's users activity, as illustrated in the video below.  
 For each of these options, try to imagine how this activity ( $\{\text{Im://Field/4}\}$ ) would be portrayed e.g. for (3) the icon changes to to represent the activity, for (4) the full view changes to a clear portrayal of what the device is doing.

Q30 What would your preference be in terms of how a **stranger's AR headset could make you aware of this activity** ( $\{\text{Im://Field/4}\}$ )...

	1 - No awareness of activity (1)	2 - Basic awareness device sensing is active (e.g. LED colour) (2)	3 - Awareness of activity type sensing is being used for (3)	4 - Full, real-time awareness of what the headset is doing (4)
...assuming your consent had been sought? (1)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
...assuming your consent had NOT been sought? (2)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Q31 From the perspective of being the AR user

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Q32 Assuming you were performing this activity ([\\${Im://Field/4}](#)) on your AR glasses, what would your preference be in terms of how **your headset would inform other people** of what you were doing?

- 1 - No awareness of activity (1)
  - 2 - Basic awareness device sensing is active (e.g. LED colour) (2)
  - 3 - Awareness of activity type sensing is being used for (3)
  - 4 - Full, real-time awareness of what the headset is doing (4)
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Q33 **OPTIONAL** - Do you have any comments regarding your attitudes towards this AR scenario?

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End of Block: Other Scenarios (looping block)

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Start of Block: Final questions

Q34 Having been shown some of what it is possible to do with an AR headset, would you say you are now more or less uncomfortable with the possibility of people wearing and using AR headsets in public?

- Much more uncomfortable (1)
  - More uncomfortable (2)
  - Neutral / No change (3)
  - More comfortable (4)
  - Much more comfortable (5)
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Q35 How comfortable are you with people wearing and using AR headsets with cameras and microphones in public?

- Extremely uncomfortable (1)
  - Somewhat uncomfortable (2)
  - Neither comfortable nor uncomfortable (3)
  - Somewhat comfortable (4)
  - Extremely comfortable (5)
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Q36 **OPTIONAL** - Do you have any comments regarding this survey?

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Q37 **OPTIONAL** - If you wish to be considered for the prize draw (£30 Amazon vouchers or local equivalent if available) please leave your email address below.

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End of Block: Final questions

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