



# Virtual Reality: Ethics



# Ethics in VR

Brief lecture not in the book.

- Safety
- Ergonomics
- Privacy
- Addiction
- Accessibility



# Safety





# Gorilla Arm



# Gorilla Arm





# Eye strain





# Ergonomic considerations

- More strenuous interaction
  - Having hands in the air
  - Walking around
- Looking at a bright screen /blue light)
- Converging to follow objects (syncing eyes)
- Accommodating, i.e., adjust focus
- Limits on how long users can engage in activity.

# Mental health



# Mental health

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# Mental health





# Addiction





# Games addiction

- WHO: gaming disorder
- Unhealthy obsession with games
- Health / job issues.
- World of warcraft
- Skyrim
- Large immersive VEs. / potential with VR.
- Limit interaction

— WHY? —

# Access your whole audience.

And improve the experience for everyone (including you)!

## DID YOU KNOW?



**1.14  
BILLION**

People have  
a disability  
worldwide.

That is ~3.5x  
the population  
of the U.S.



## COMMON DISABILITIES

Cognitive

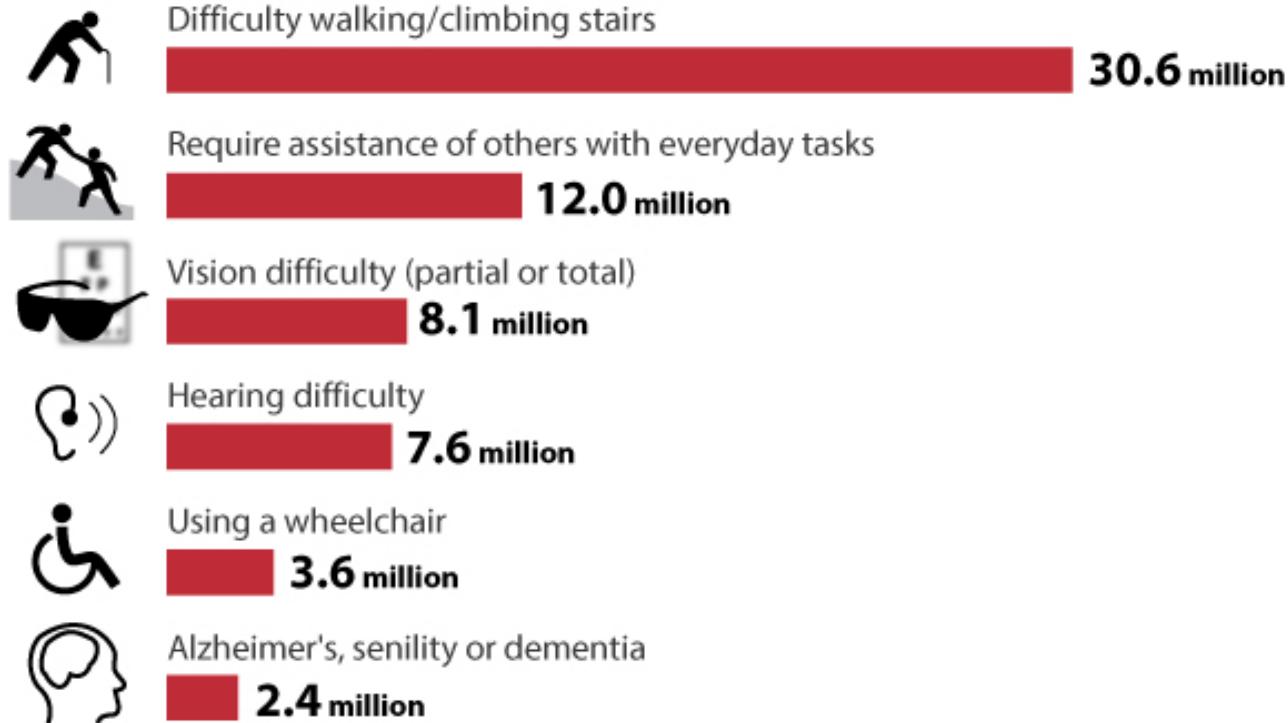
Visual

Fine motor

Temporary

# Accessibility

## How Common are Specific Disabilities?

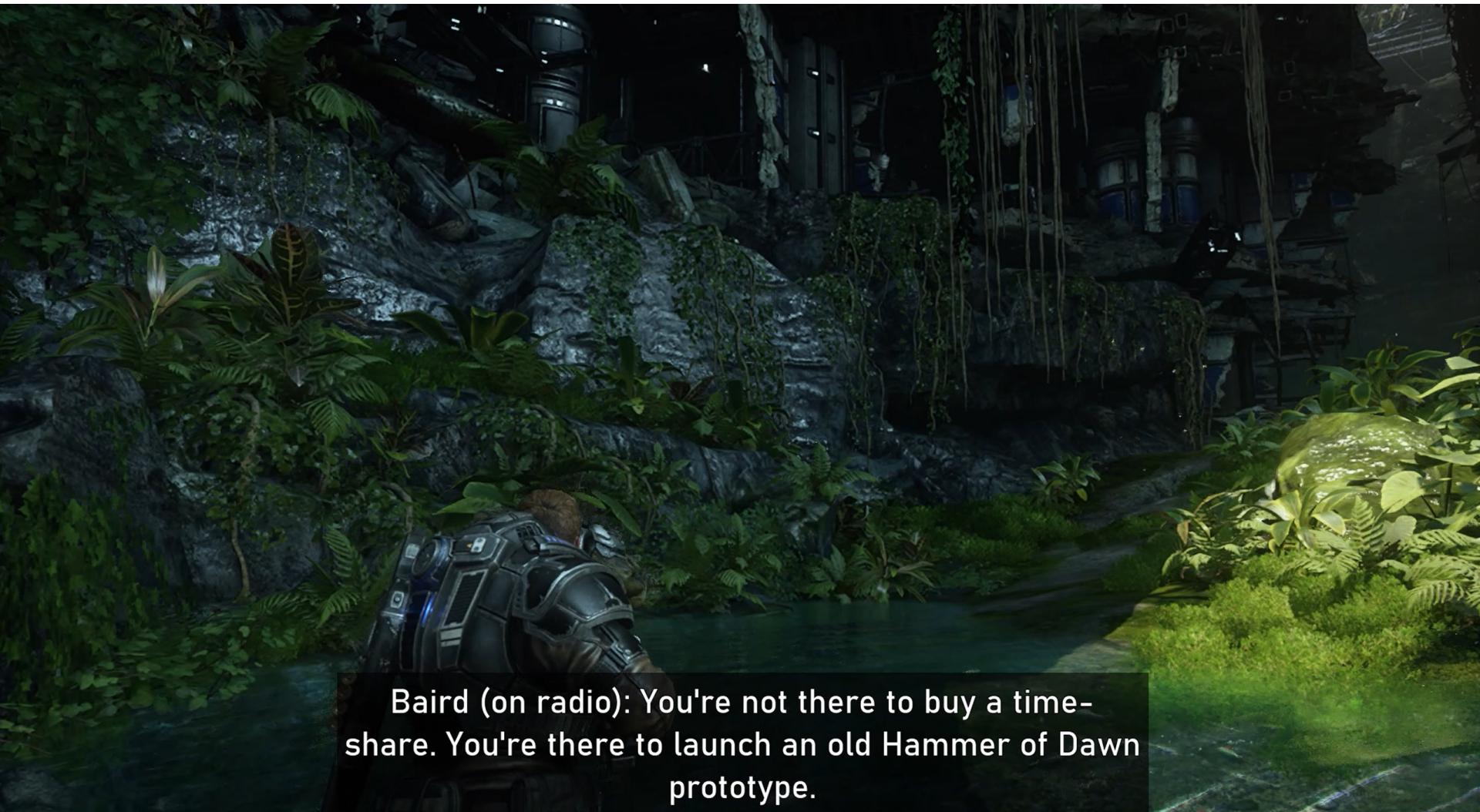




# Accessibility



# Captions



Baird (on radio): You're not there to buy a time-share. You're there to launch an old Hammer of Dawn prototype.

# Captions



# Colorblindness



Avoid red on green text

1 in 12 males is colorblind



# Accessible controller





# Oculus

**oculus** launch pad

## DESIGNING ACCESSIBLE VR EXPERIENCES