



Human Design
Group

All you want to know about **cybersickness**

Nawel Khenak, Ph.D.
VR expert

Opérations et Opérateurs du Futur

31/03/2023

Cybersickness?

Cybersickness causes **light to severe discomfort** in **more than 60%** of users of immersive technologies **during or after** exposure (Lawson, 2014)

Disorientation

Vertigo,
postural instability,
difficulty focusing,
etc.

Oculomotor

Eyestrain, headache,
blurred vision,
vestibulo-ocular reflex
disturbance, etc.

Nausea

Stomach awareness,
pallor, cold sweating,
increased salivation,
vomiting, etc.

Sopite syndrome

Fatigue,
difficulty focusing,
dizziness, etc.

Risks for the project

- Cybersickness can compromise
 - The usability of the technology
 - The progress of the project



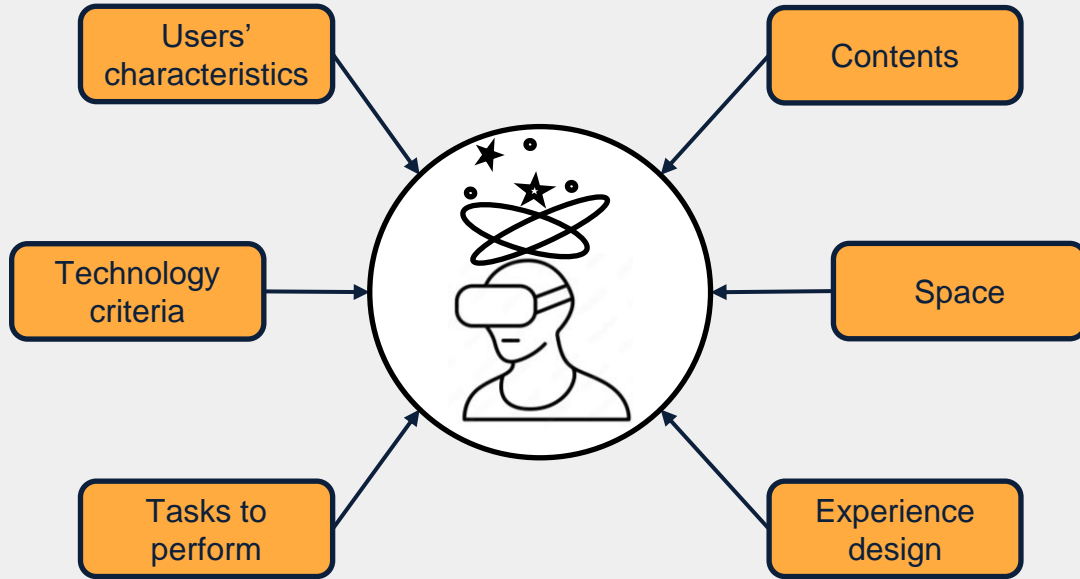
Le Congrès américain met en pause le casque militaire AR de Microsoft...
parce qu'il rend les soldats malades

🕒 13 janvier 2023 à 16:43

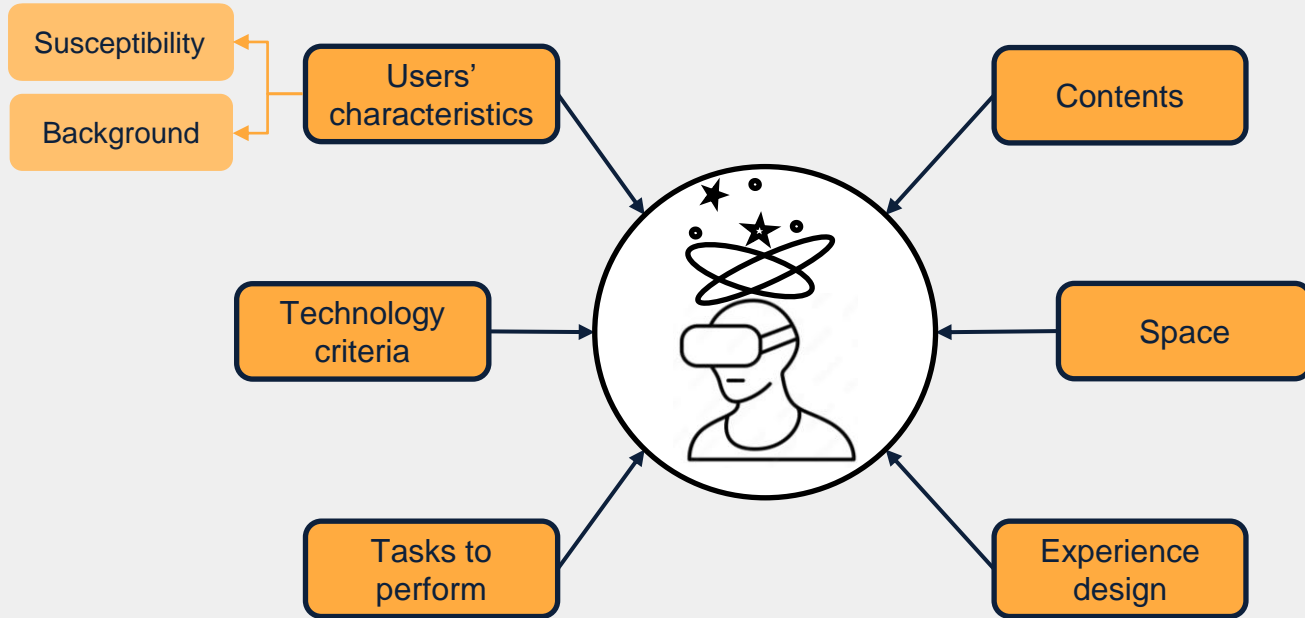
“Cybersickness must be overcome in order to drive mass adoption of immersive technologies”

(Stanney et al., 2020)

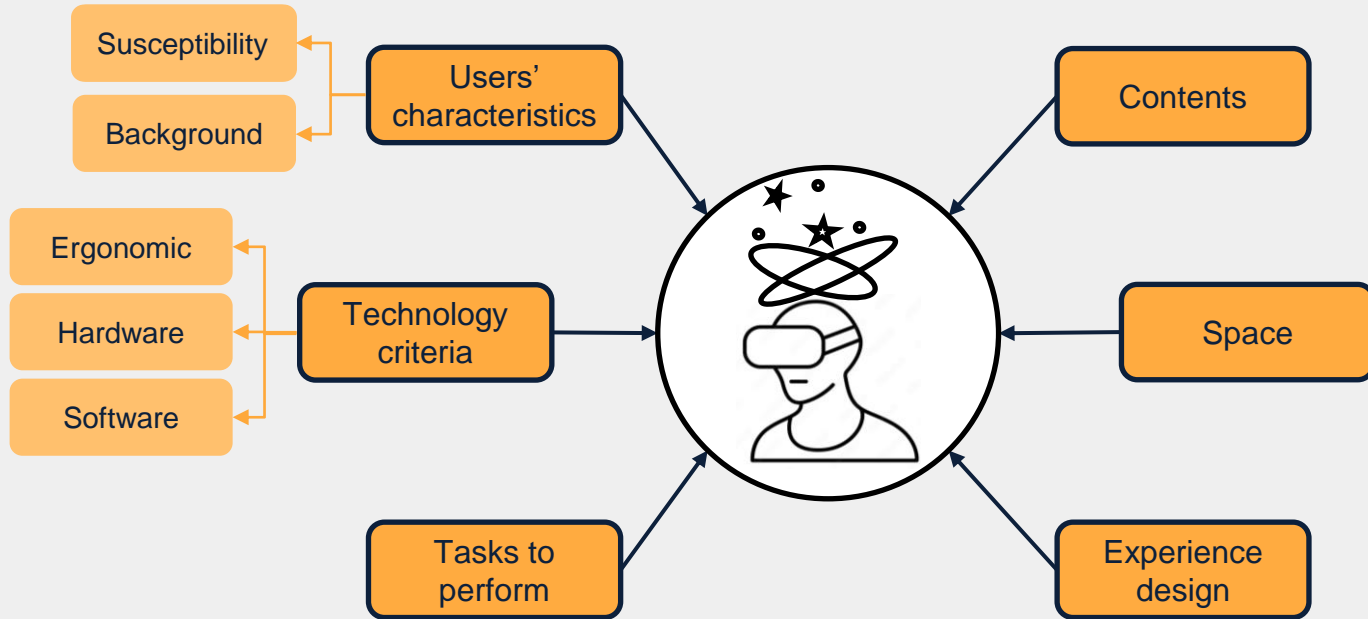
Factors impacting cybersickness



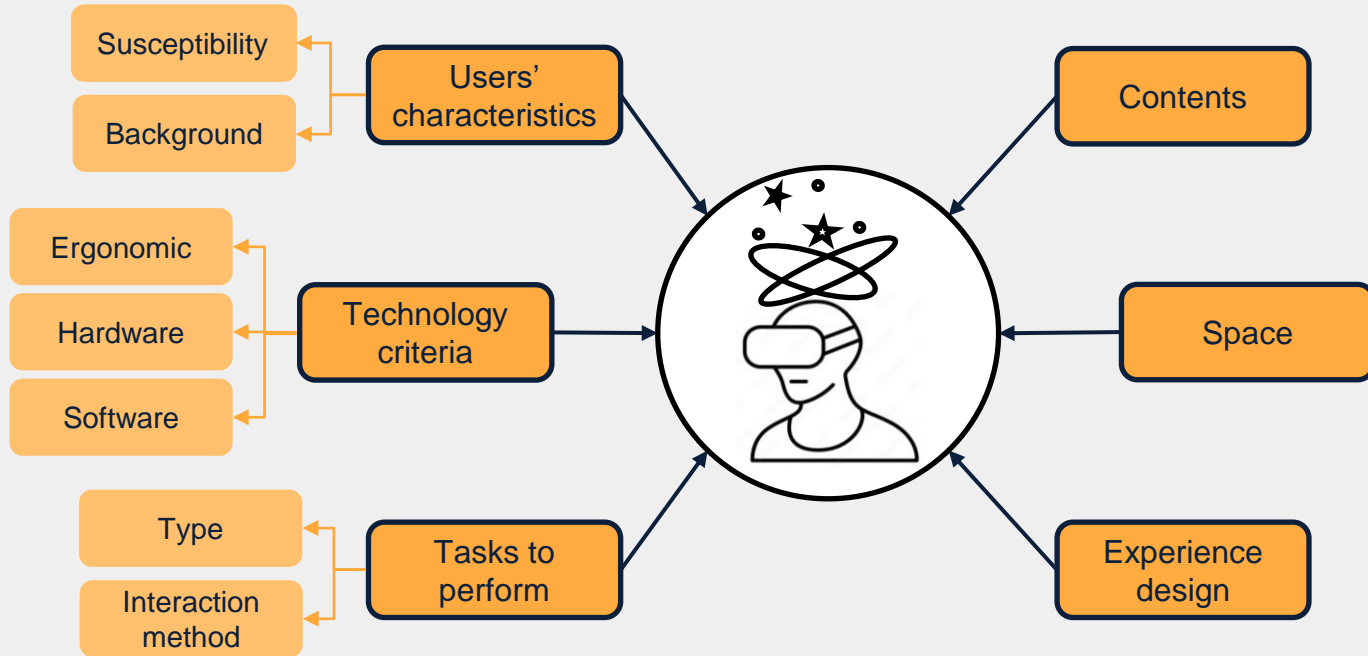
Factors impacting cybersickness



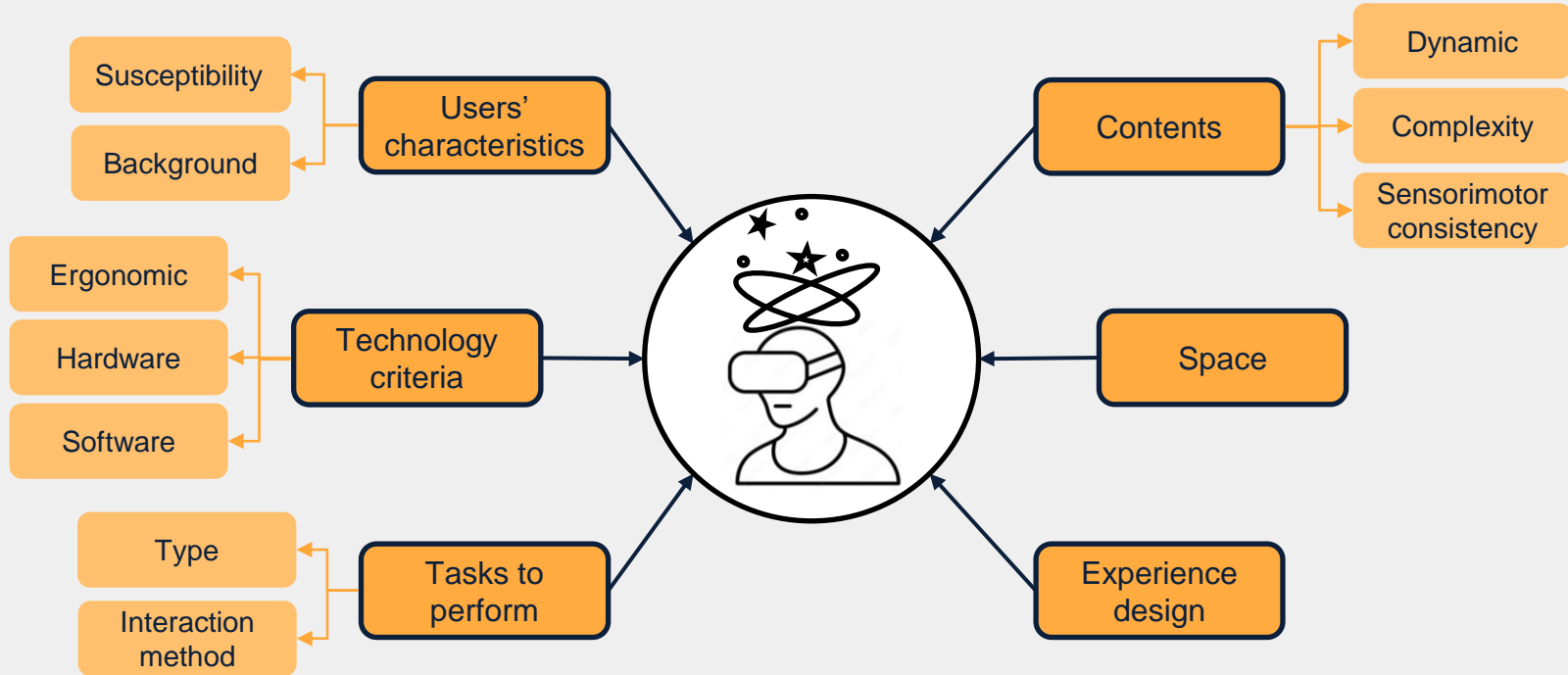
Factors impacting cybersickness



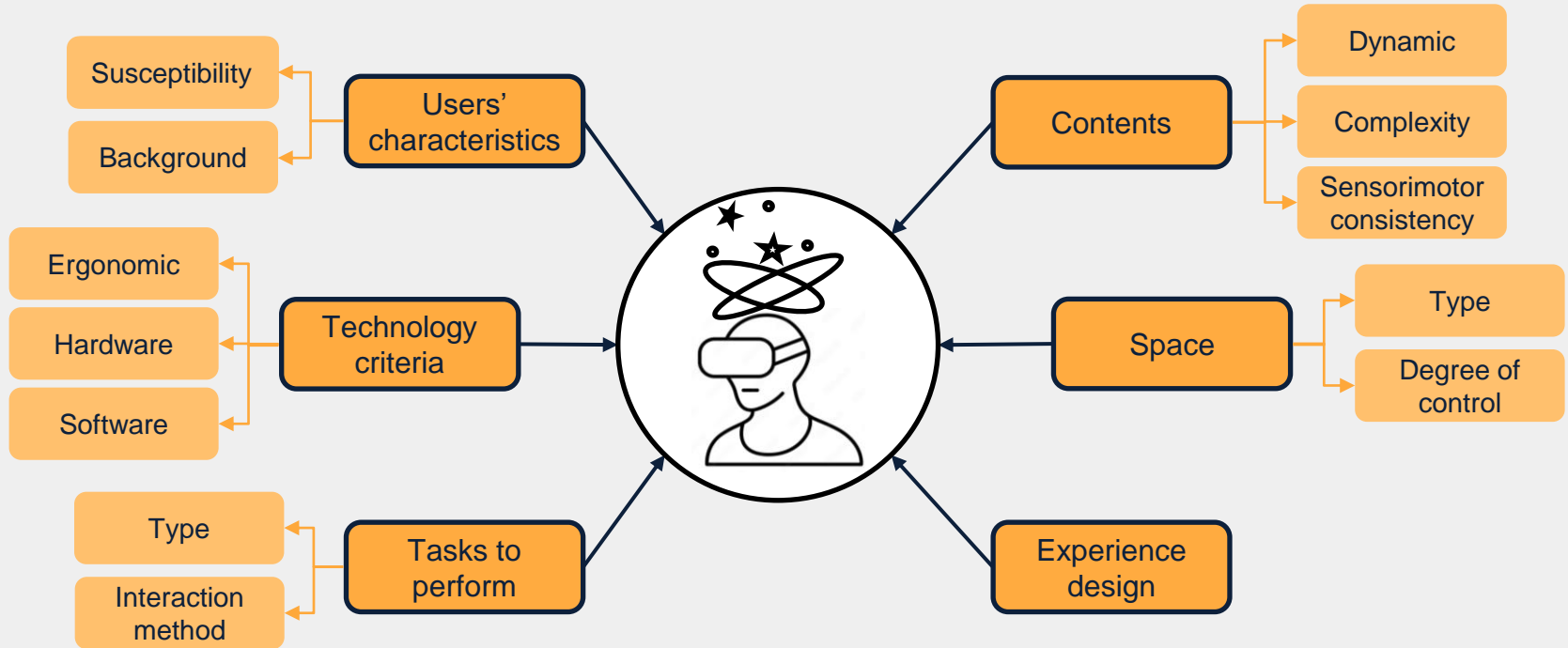
Factors impacting cybersickness



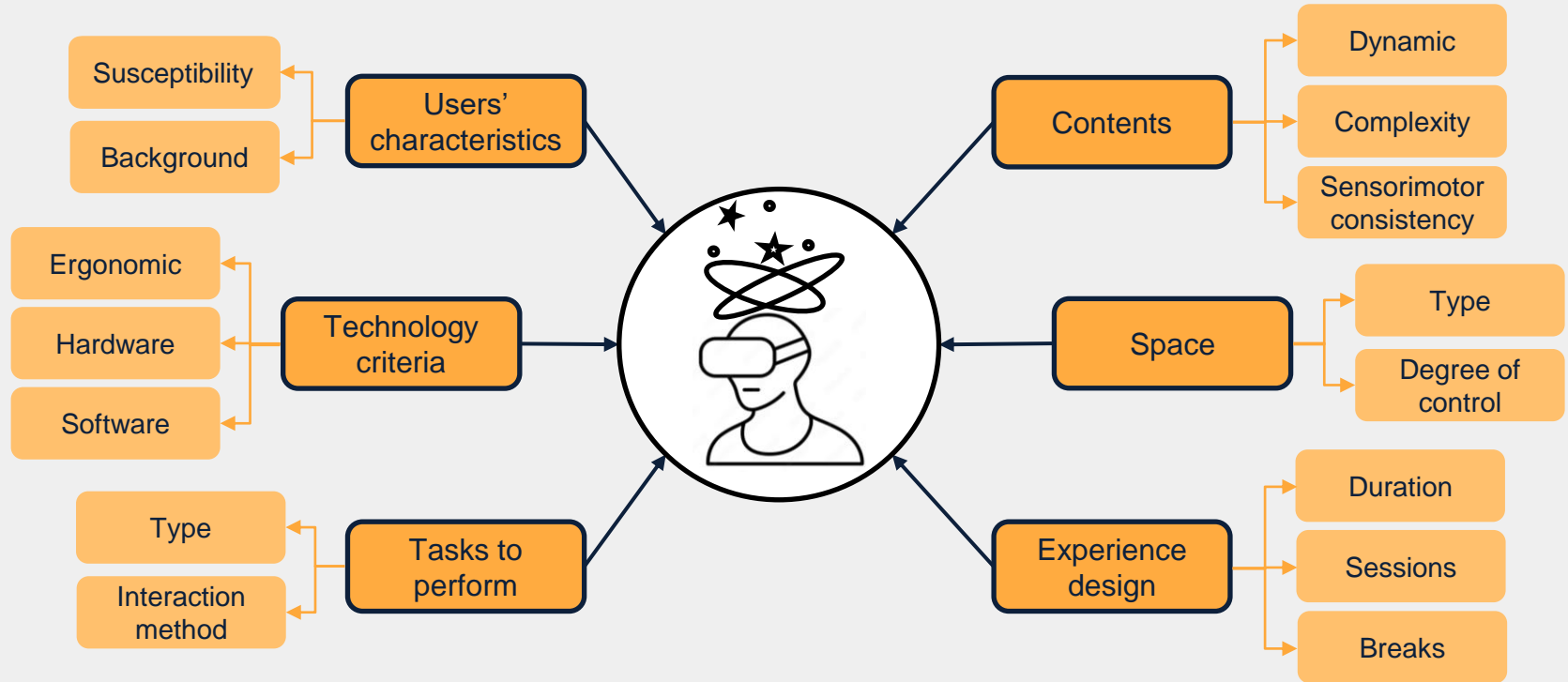
Factors impacting cybersickness



Factors impacting cybersickness



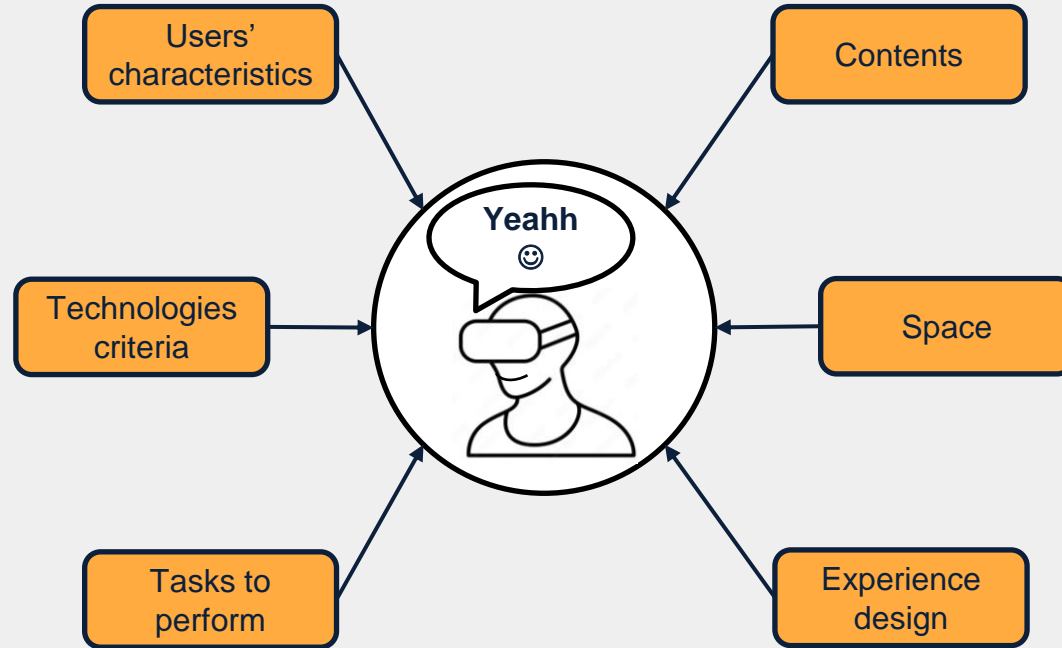
Factors impacting cybersickness



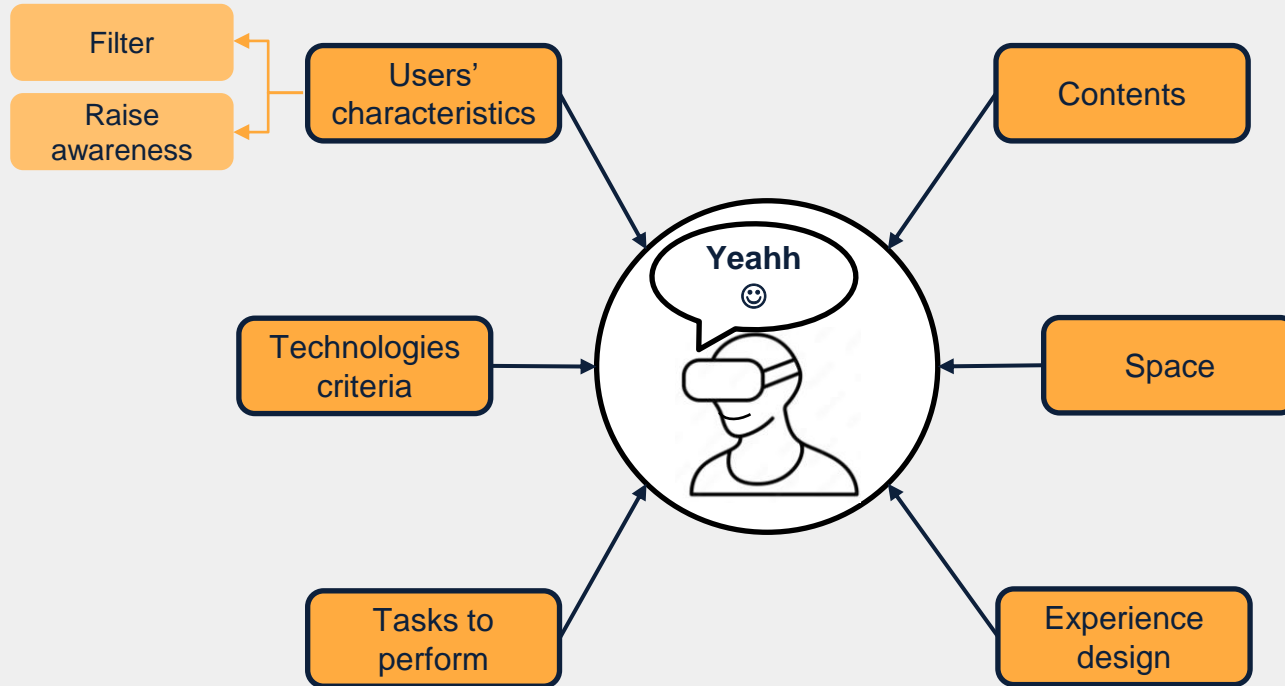
How to mitigate cybersickness?

- How to **support** the users?
- How to **choose** the immersive technology?
- How to **design** the task and the content?
- How to **organize** the space and the experience?

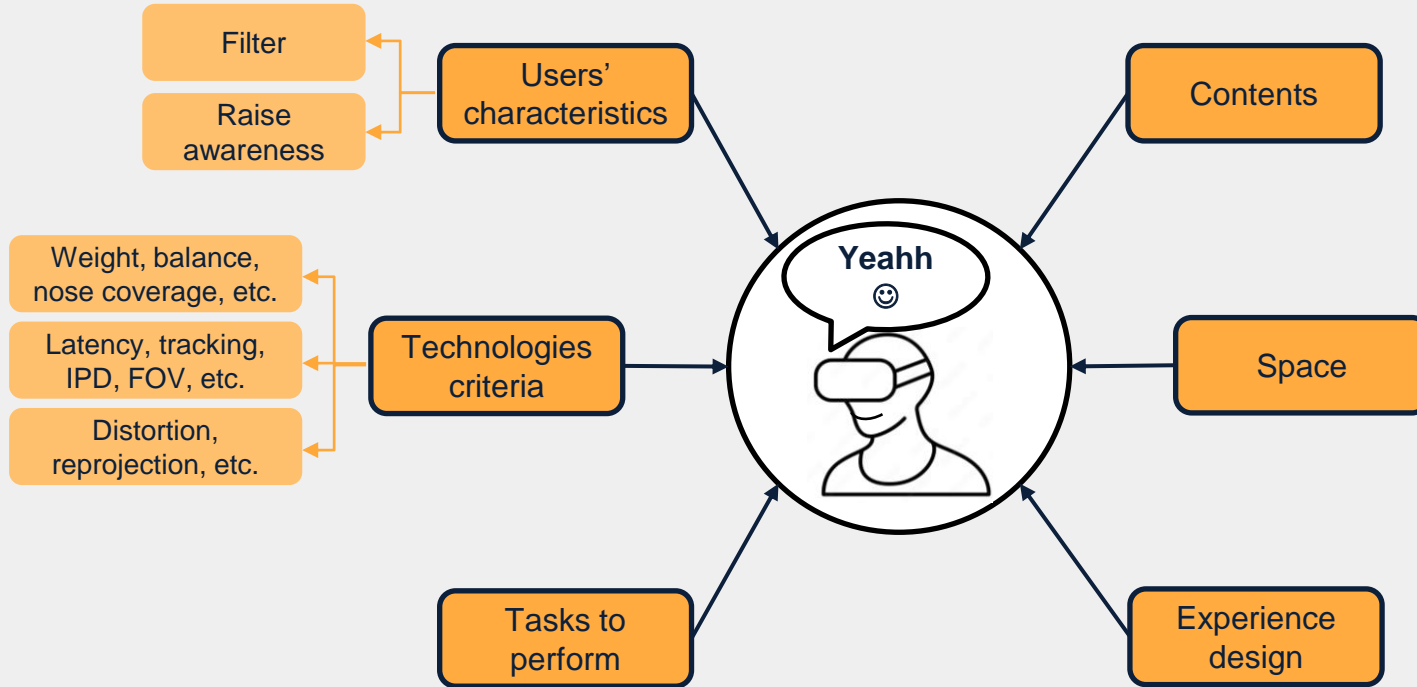
Practices reducing cybersickness



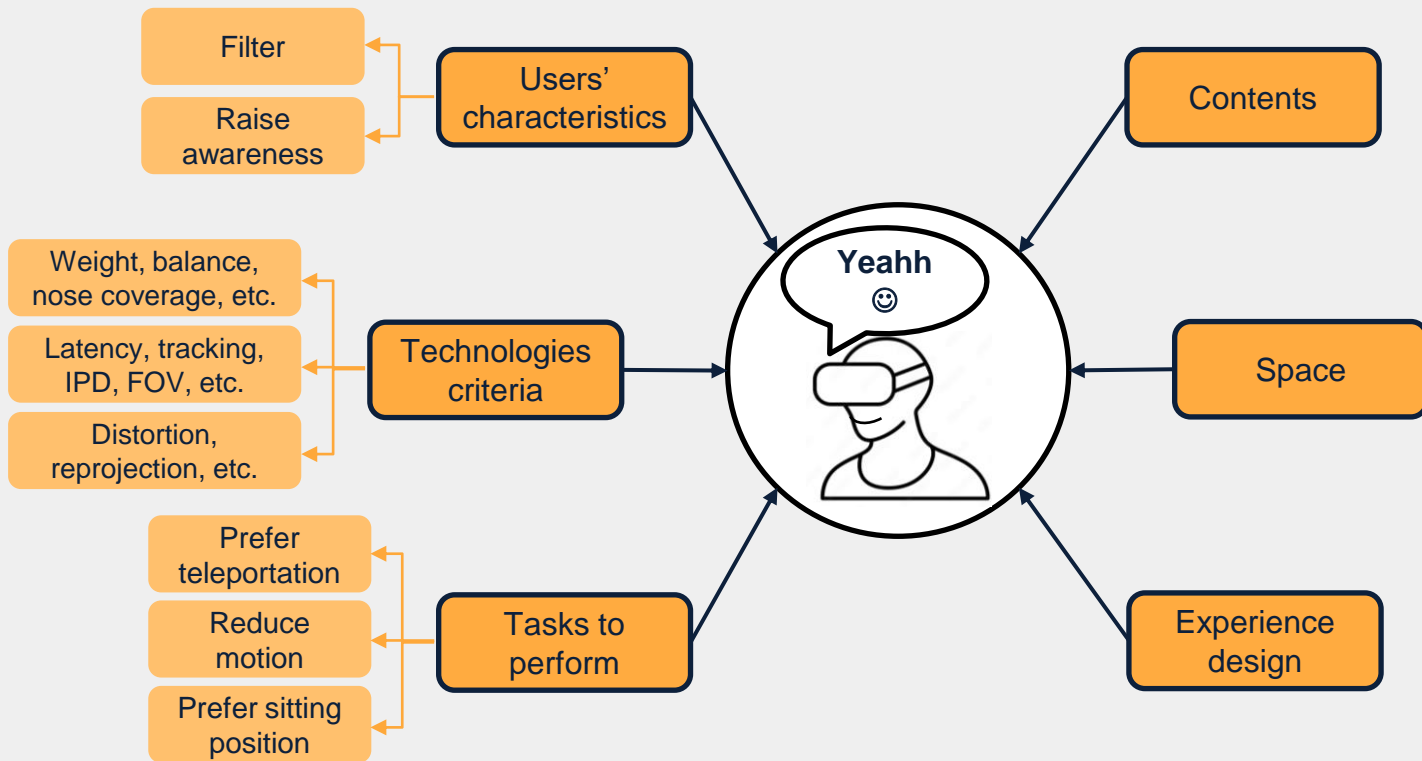
Practices reducing cybersickness



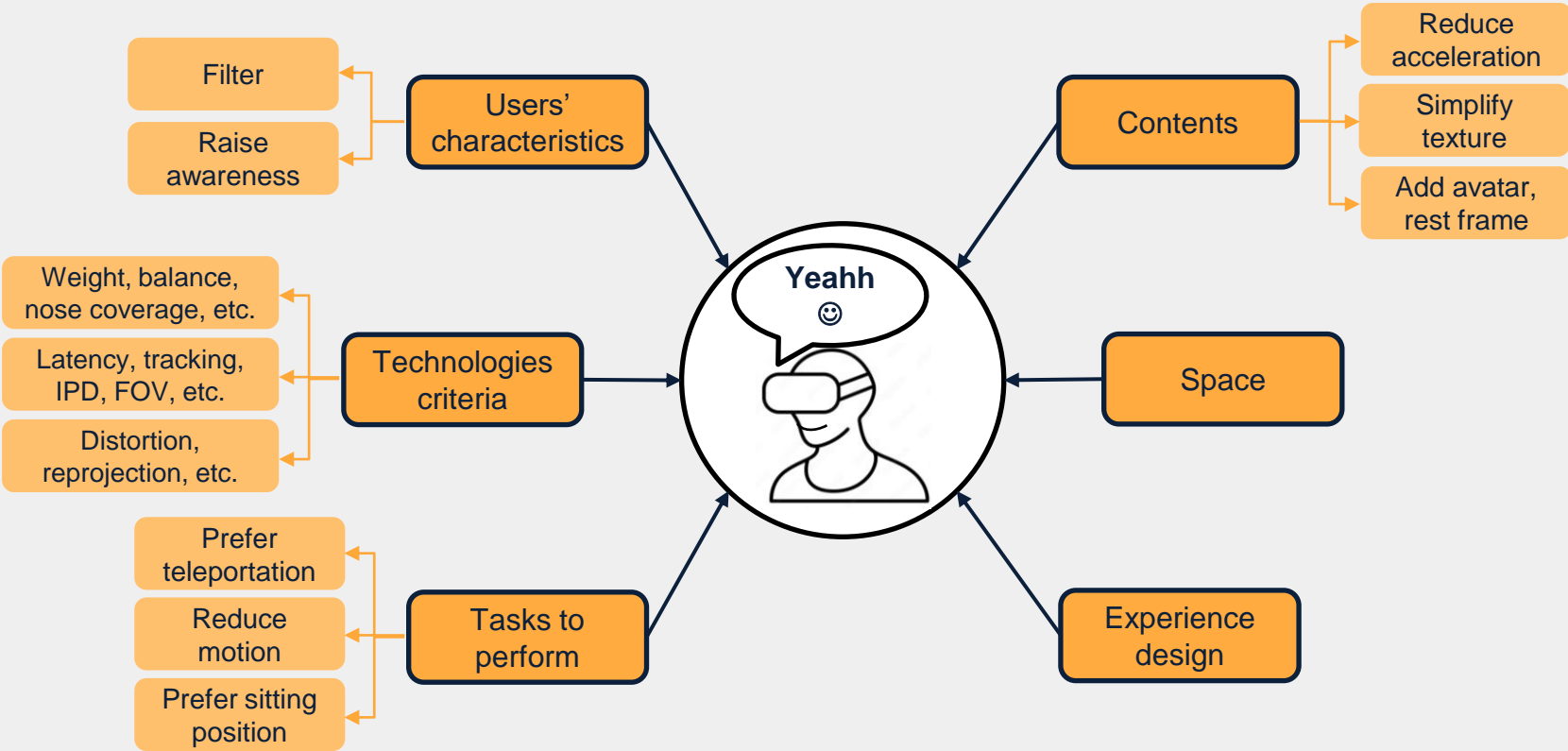
Practices reducing cybersickness



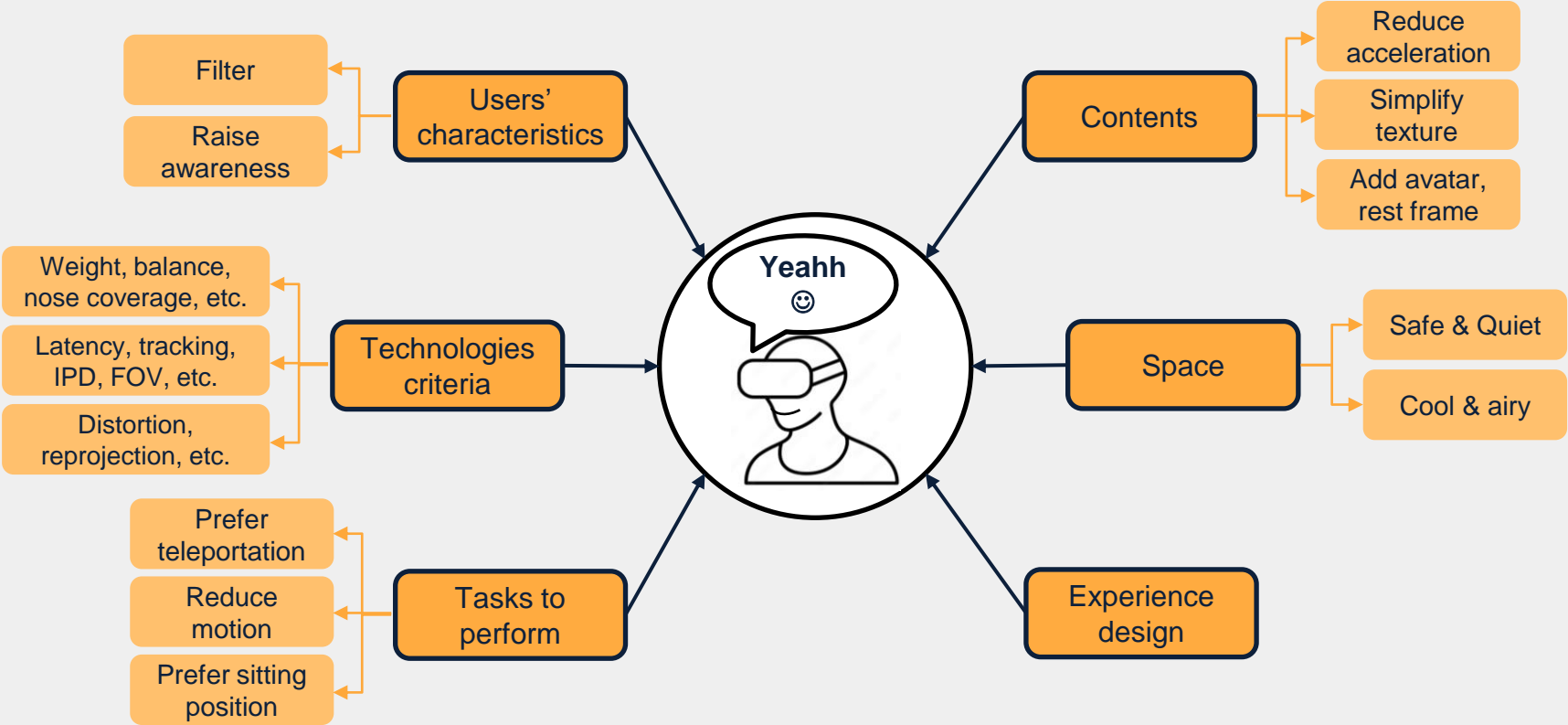
Practices reducing cybersickness



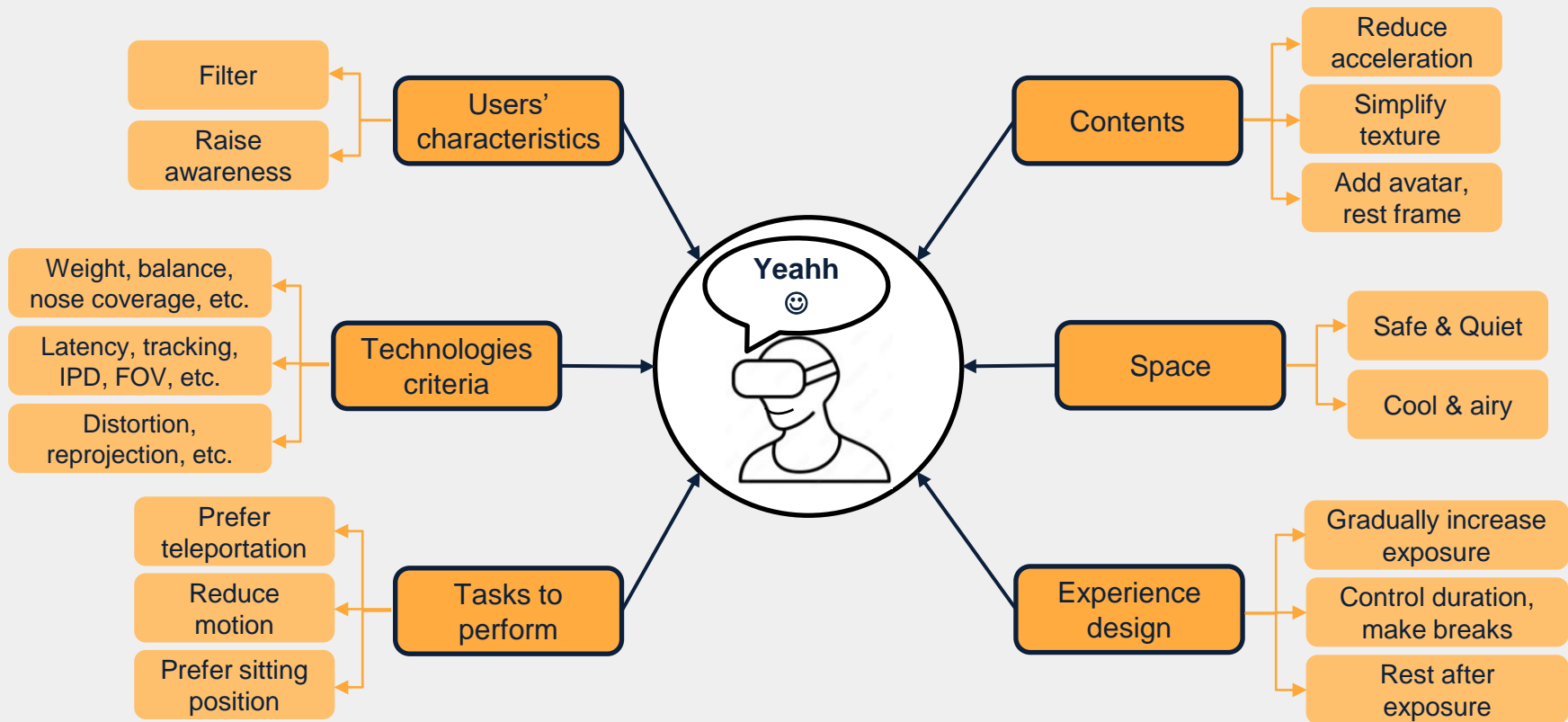
Practices reducing cybersickness



Practices reducing cybersickness



Practices reducing cybersickness



What's next?

- Identify the effect of each factor and how to mitigate it
- Evaluate the correlation between the factors identified and the symptoms
- Edit a set of recommendations to mitigate cybersickness and its factors
- Establish a model of cybersickness



**Human Design
Group**

Thank you 😊

All you want to know about **cybersickness**

Nawel Khenak, Ph.D., VR expert

nawel.khenak@humandesign.group

31/03/2023