VR TO FIGHT CLIMATE CHANGE

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Posters:

1. Architecture
2. Algorithm
3. System Map

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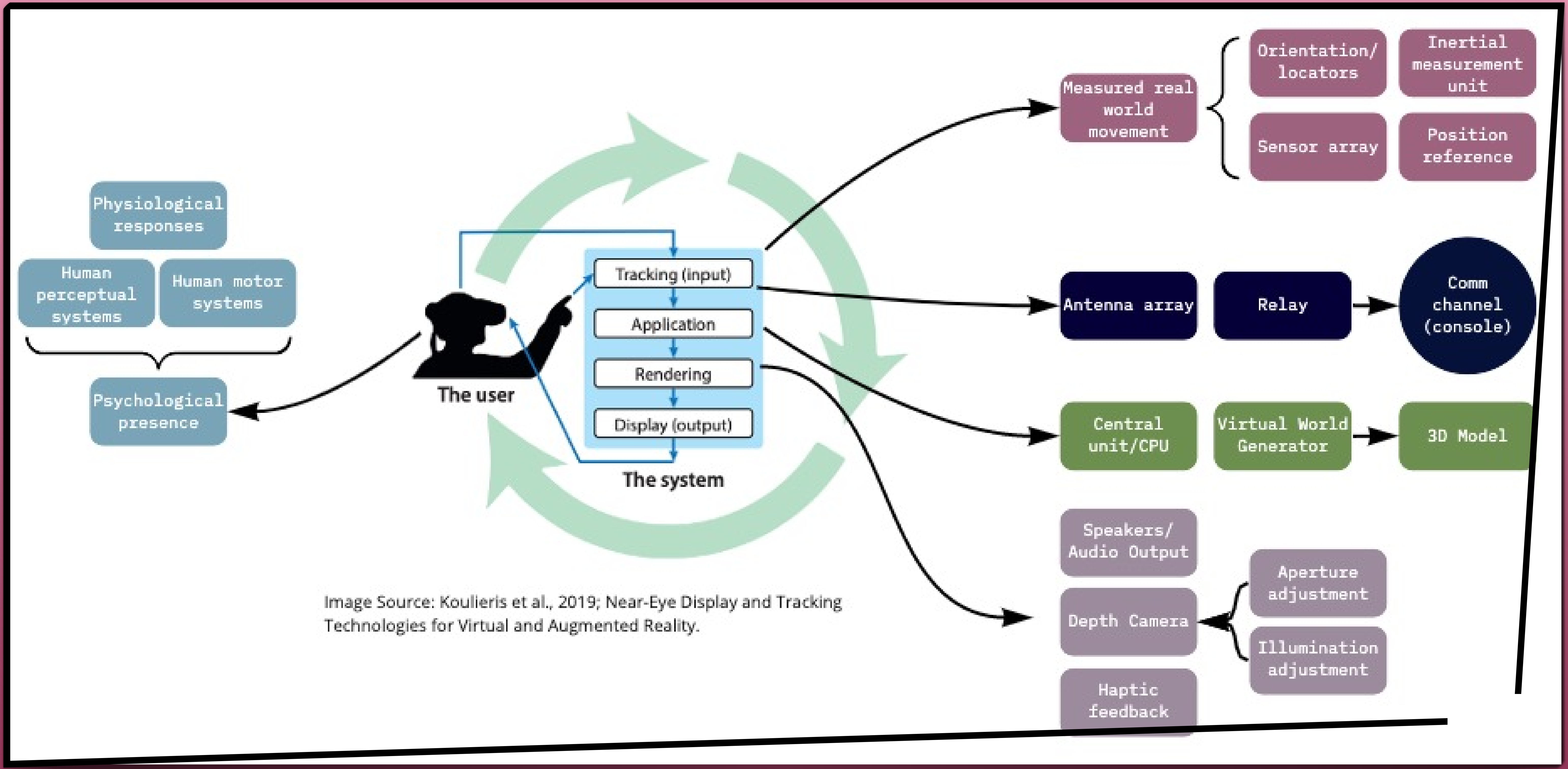
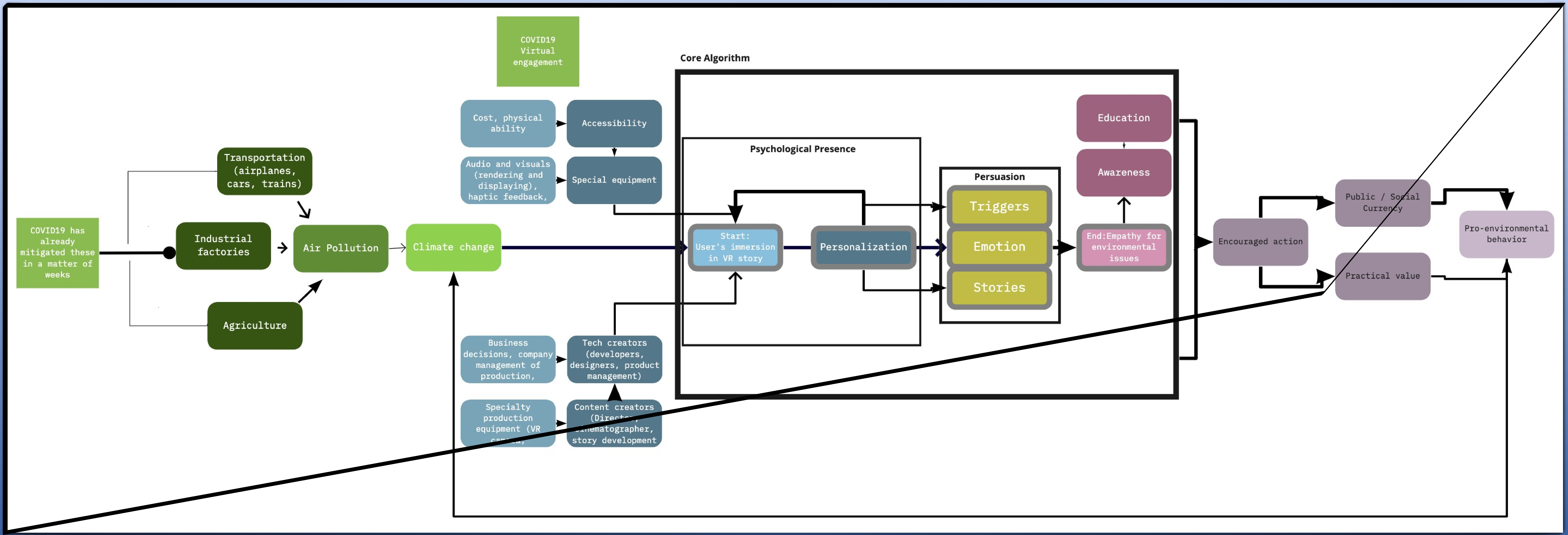
Architecture



Tracking, application, rendering, and displaying processes are central to an input-output cycle at the core of VR's technology. Tracking is the process by which hardware registers users' body movements, allowing them to feel real-world spatial awareness and meaningfully interact with their virtual world. For example, cameras constantly monitor the relative location and orientation of a user's head-mounted display. Application is the relay of this tracked location information to the VR console so that it can be translated to location in the virtual world. Rendering allows the VR environment to update seamlessly with the user's movement. Display is the sensory haptic output of the rendering process. When the user moves their body in reaction to what the VR system displays to them, the tracking process repeats and a feedback loop ensues.

The above diagram deblackboxes the input-output cycle as well as the soft and hardware elements that make these four main processes possible. All together, they constitute VR's technical structure.

Algorithm

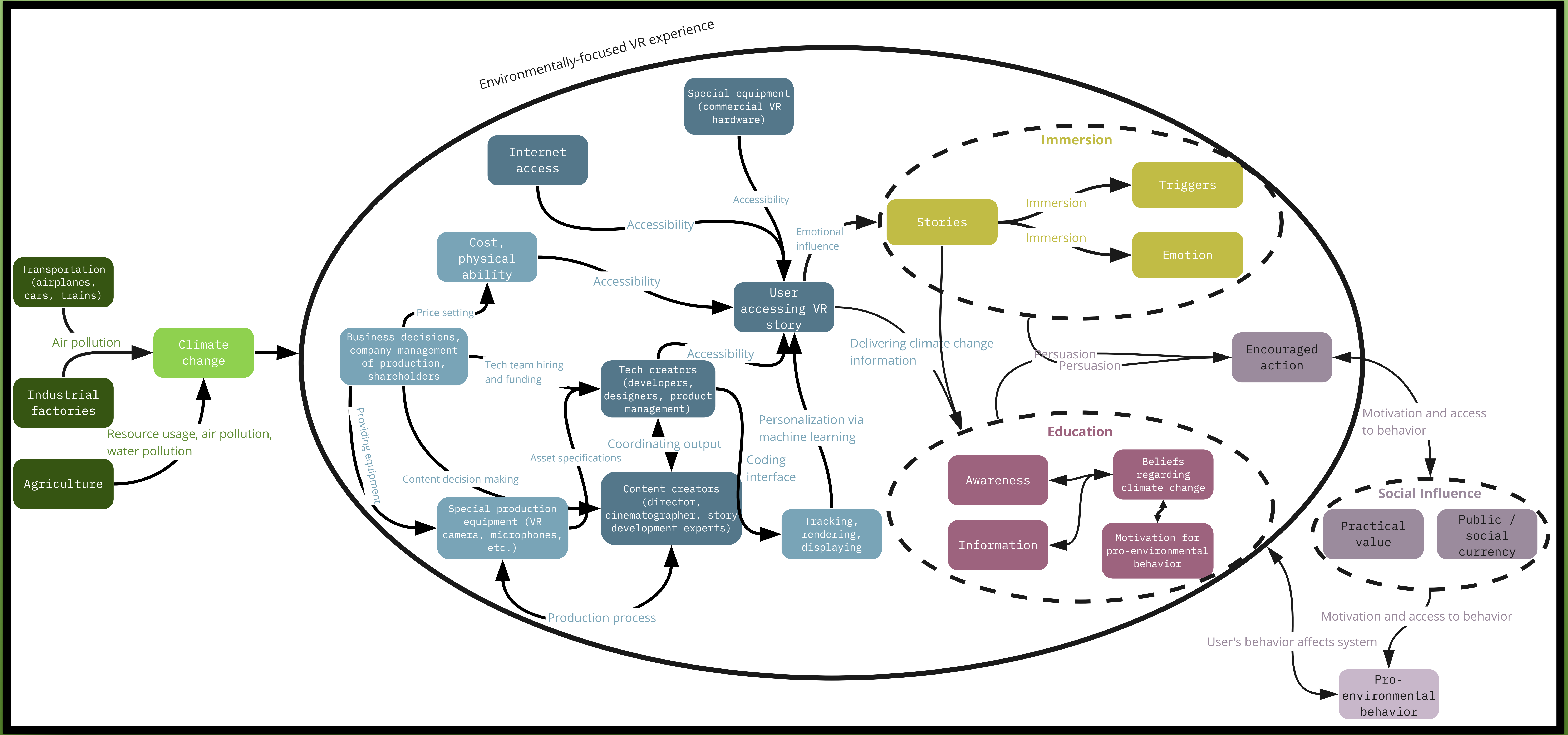


What underlying equation in VR use would produce pro-environmental action in the physical world? Several external factors impact the desired outcome: business decisions to fund pertinent VR storylines; users' financial, physical, and other ability to access the stories embedded in VR; and social influence forces that would bridge users from pro-environmental belief to behavior and that would help the belief and behavior catch on with others. Upon surveying these factors, we unpacked a core algorithm upon which the entire process relies.

VR stories can capitalize on user immersion by triggering emotions, providing information that leads to user empathy about climate change, and then defining an action the user can take to fight it. Once the user cares, social influence forces can persuade and enable the user to take action, as well as to promote that action among peers. Psychological presence in tandem with persuasive messages and a well-defined, achievable action is the core algorithm necessary in order for commercial VR to produce pro-environmental behavior to fight climate change.

System Map

This system map conceptualizes the various agents and forces that exist in and around commercial VR technology and human-induced climate change. Feeding into this system are industrial-scale agriculture, factories, and transportation, three major causes of climate change. Within the orbit of VR as its own socio-technical system, we identified several forces and actors: business management; people shaping the technology, such as developers; user access issues; hardware; and the stories, information, and encouraged action delivered to the user through VR.



At the output end of the system, we identified social influence mechanisms that would bridge the user from belief in needing to do something about climate change, to actually taking action. The final output, pro-environmental behavior that fights climate change, would feed back into the system, both by mitigating the initial causes of the problem and by its social influence drivers bringing more users to the pro-environmental VR experience.