VIRTUAL WHAT?

WHAT CAN WE LEARN IN A VIRTUAL WORLD?

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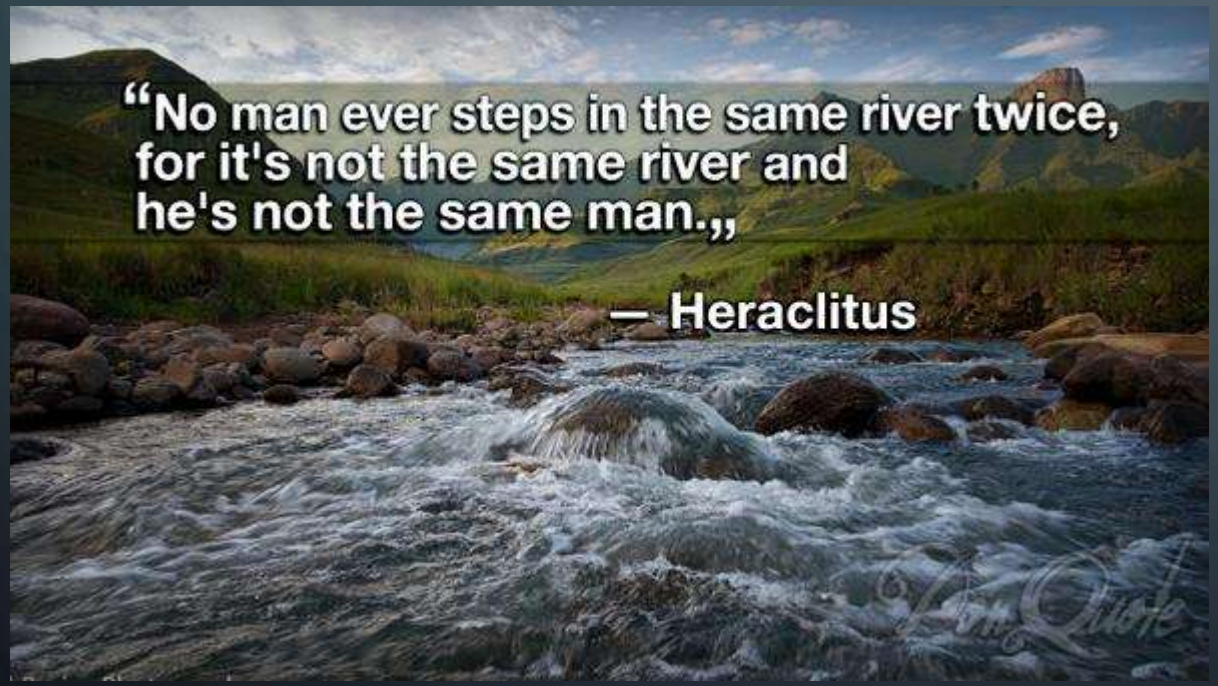
WHAT IS REALITY?

WHAT IS REALITY?

HERACLITUS



WHAT IS REALITY?

UNITY OF OPPOSITES

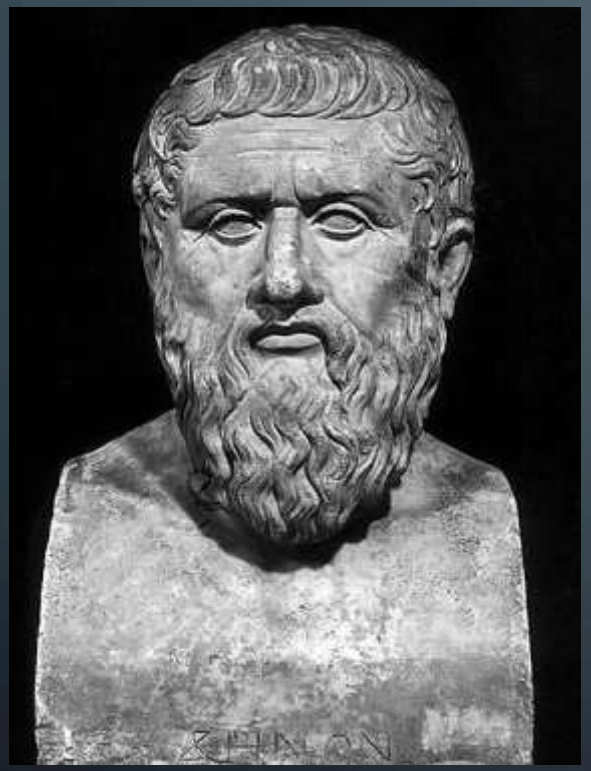
The Greek philosophical pioneer Heraclitus of Ephesus can be credited for being the first person in the West to develop a sound philosophical system.

His philosophy is the paradoxical notion that the nature of reality is a “unity of opposites”.

Heraclitus sought to expose this contradictory nature of reality through his paradoxical texts.

WHAT IS REALITY?

PLATO



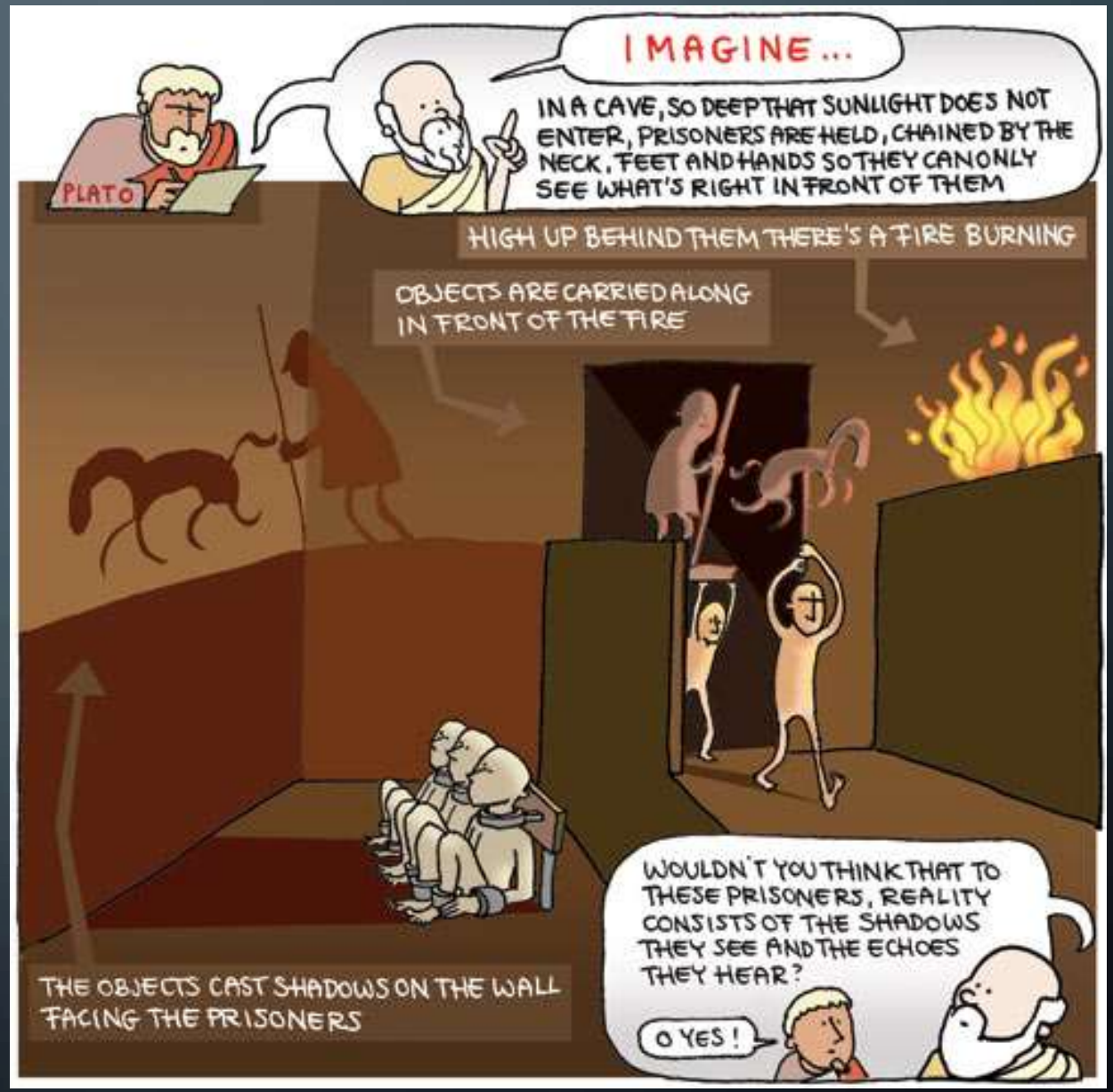
Plato's “Theory of Forms” can be seen as a direct response to Heraclitus’ philosophical system.

Plato’s Forms were needed to provide stable objects for knowledge as well as to answer the question of what is ultimately real. Plato views the body as the prison of the soul/mind.

The dualistic ontology inherent in Plato’s philosophy becomes even more explicit in his in his allegory of the Cave in the *Republic* and its “Two Worlds Doctrine”.

WHAT IS REALITY?

ALLEGORY OF THE CAVE



WHAT IS REALITY?

RENÉ DESCARTES

Descartes proposes a philosophical methodology which aims to structure knowledge much like an architect structures a strong physical structure, i.e. beginning with strong foundations.

Finding inspiration from Euclidian geometry, used in architecture, Descartes proposes to develop the first principles for a foundationalism epistemological system.

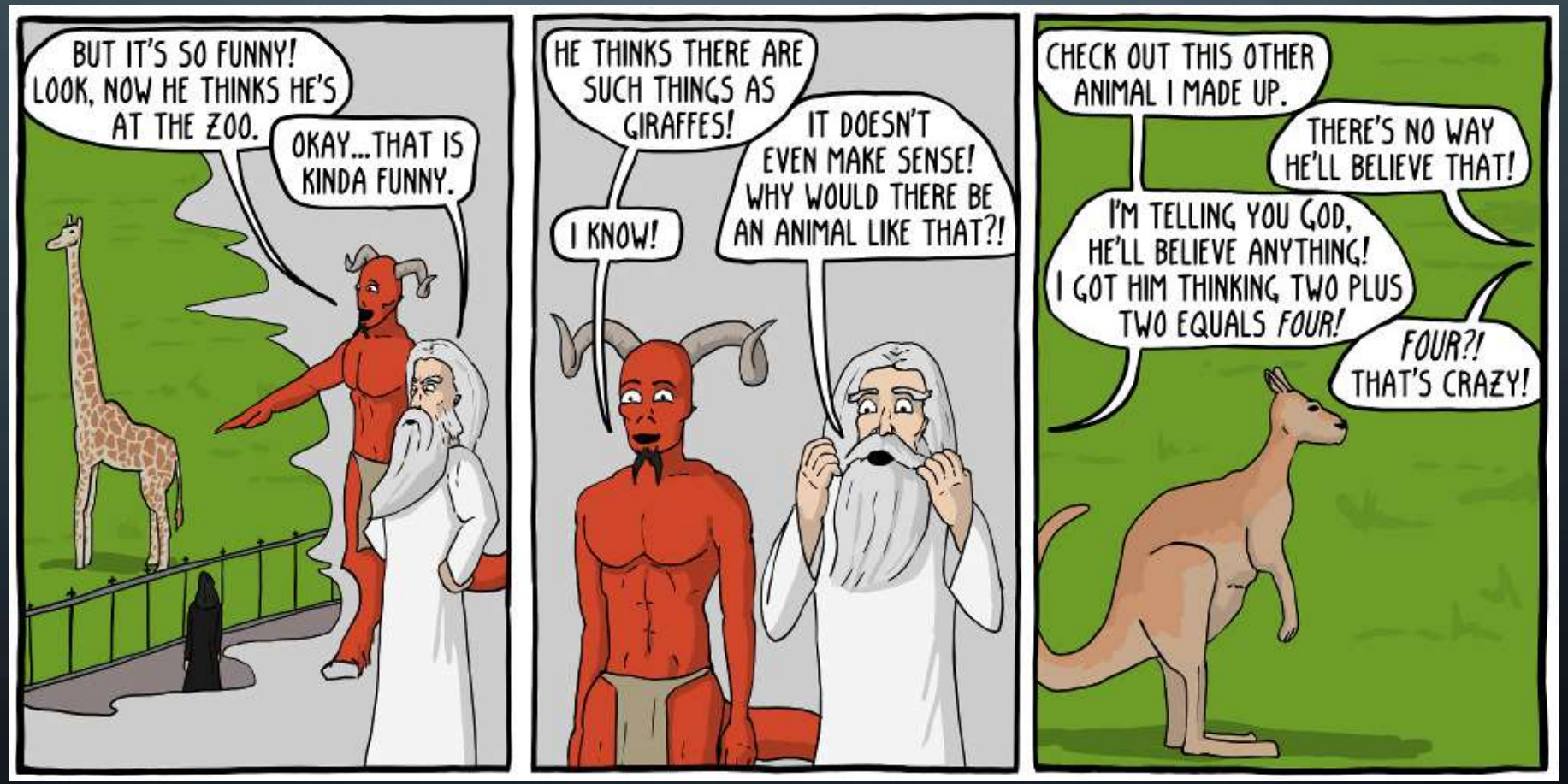
“to reach certainty, to cast aside the loose earth and sand so as to come upon rock or clay”

WHAT IS REALITY?

DESCARTES

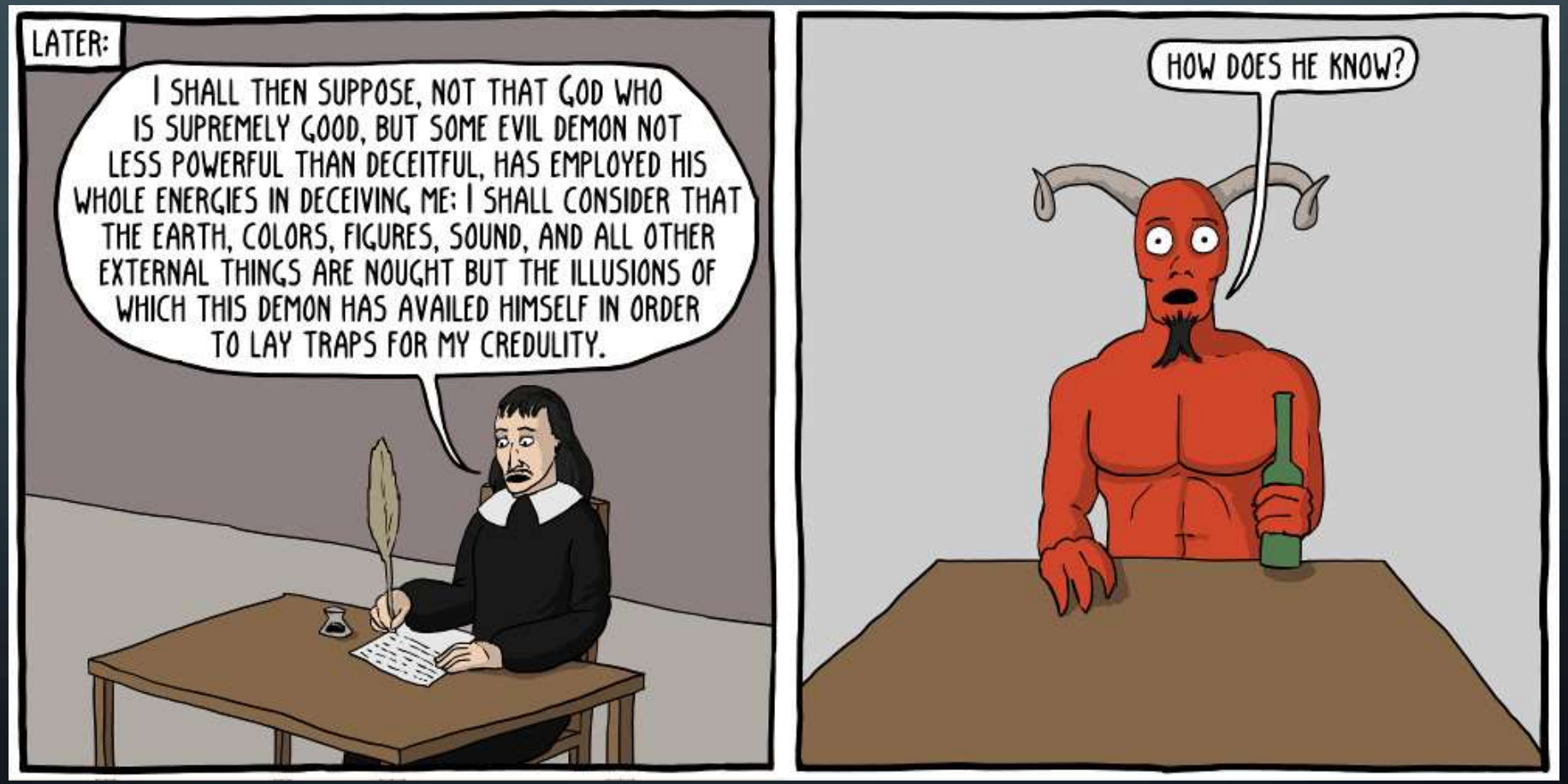
WHAT IS REALITY?

DESCARTES



WHAT IS REALITY?

DESCARTES



WHAT IS REALITY?

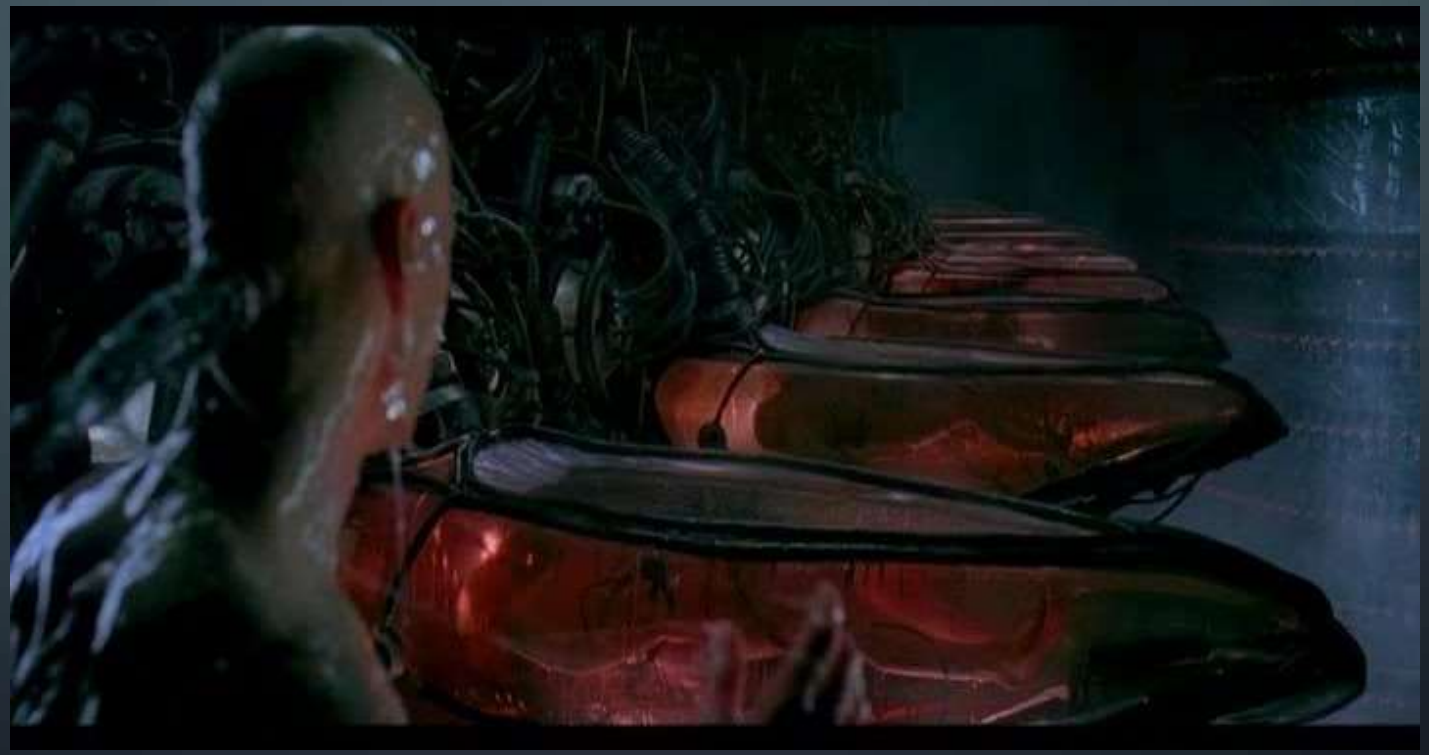
RENÉ DESCARTES

Descartes through his methodological doubt believed himself to have discovered the kernel of absolute truth, which would form the foundation of his rationalist epistemology, namely “Cogito ergo sum” (I think therefore I am).

Whether we are dreaming or being deceived by a malicious demon, the one thing that we cannot draw into doubt, is that we are thinking and consequently that we exist.

WHAT IS VIRTUAL REALITY?

PLATO'S CAVE



WHAT IS VIRTUAL REALITY?

DESCARTE'S DREAM OR DEAMON

"Have you ever had a dream, Neo, that you were so sure was real? What if you were unable to wake from that dream? How would you know the difference between the dream world and the real world?"

WHAT IS VIRTUAL REALITY?

ELECTRICAL SIGNALS IN THE BRAIN

Michael Abrash

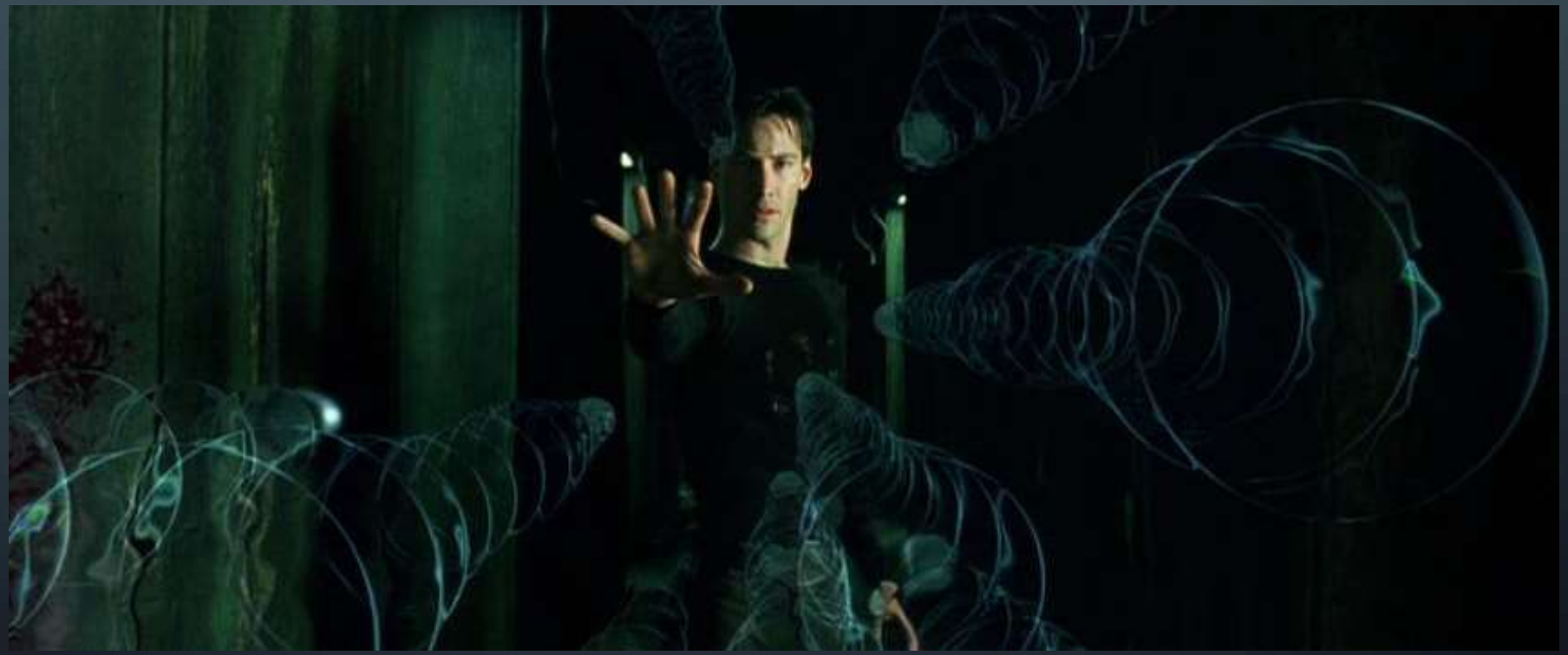
"While science fiction novels gave me the conceptual framework for thinking about VR it was the Matrix that made me believe it. The matrix gave me a deep sense of what VR could someday be like"

"The real is just electrical signals interpreted by your brain"

"VR is about driving our perceptions as they have been built to be driven"

WHAT IS VIRTUAL REALITY?

FANTASY



WHAT IS VIRTUAL REALITY?

FANTASY

- VR is part of the rationalist fantasy of capturing and representing reality.
- It can be traced to Plato's "Theory of Forms" and the desire and fantasy of revealing the true "form" (representation) of reality
- This rationalist metaphor of light is resurrected today, in the light shining from computer displays and HMD's, revealing the fantasy of a new cyborg transcendence and enlightenment.
- The "perceptual illusion of non-mediation".

WHAT IS VIRTUAL REALITY?

DK2

WHAT IS VIRTUAL REALITY?

TECHNOLOGY

Jaron Lanier

WHAT IS VIRTUAL REALITY?

TECHNOLOGY

WHAT IS VIRTUAL REALITY?

TECHNOLOGY

WHAT IS VIRTUAL REALITY?

EXTENDED SENCES

Pierre Lévy

The word "virtual" is derived from the Medieval Latin virtualis, itself derived from virtus, meaning strength or power. In scholastic philosophy the virtual is that which has potential rather than actual existence. The virtual tends toward actualization, without undergoing any form of effective or formal concretization.

People watching the same television program, for example, share the same collective eye. Using cameras, video devices, and tape recorders, we are able to perceive the sensations experienced by another person, at another time and place. So-called virtual reality systems enable us to experiment with the dynamic integration of different perceptual modalities. We are practically able to relive someone else's complete sensory experience.

WHAT IS VIRTUAL REALITY?

PRESENCE

Presence, the feeling of “being there” is considered central to teleoperation and VR endeavors, and has been since its conception.

Film critic André Bazin used the term *presence*, in his landmark book “Qu’est-ce que le Cinéma” (What is Cinema?) to describe the film viewer’s sense that he is within the spatial/temporal continuum as the screen.

Presence, the “perceptual illusion of non-mediation” has become a important criterion whereby many researchers define VR.

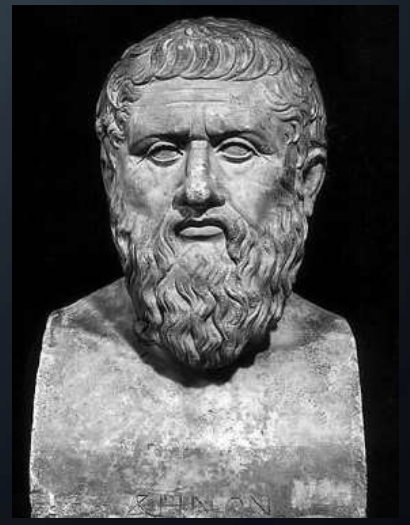
WHAT IS VIRTUAL REALITY?

RATIONALISTIC PRESENCE

Current VR environments are developed using the "language" of geometry and kinematics. Space is defined in terms of Euclidean geometry and the Cartesian coordinate system.

VR is a literal enactment of Cartesian ontology, cocooning a person as an isolated subject within a field of sensations and claiming that everything is there, presented to the subject.

VR is not only utilized to give form to our understandings of the real world outside of ourselves, but also to represent and share imagined worlds.



WHAT IS VIRTUAL REALITY?

DIALECTICAL PRESENCE

James Jerome Gibson

The (natural) environment provides all the information necessary for the organism's ordinary activities. The environment is central, it affords to guide or prevent action through various levels and dimensions of information. The interaction is represented by a bipolar model incorporating the active organism and the environment.

Presence is tantamount to successfully supported action in the environment.

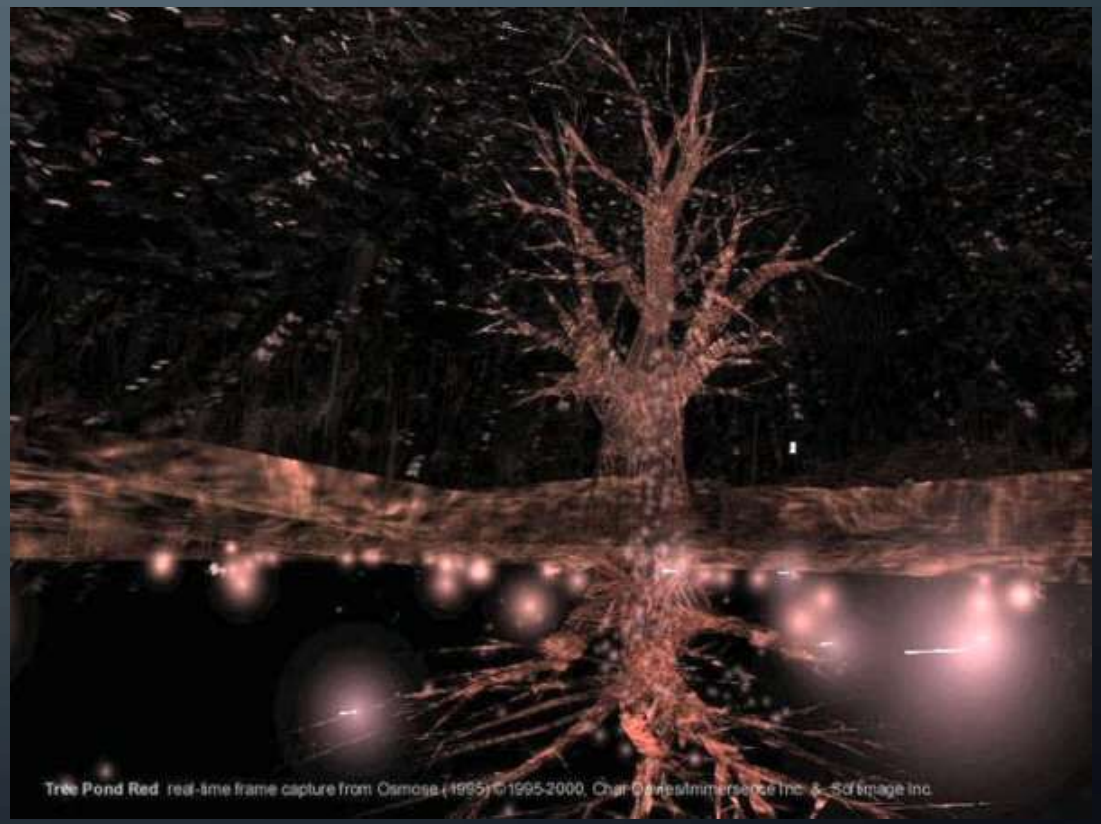
WHAT IS VIRTUAL REALITY?

ONTOLOGICAL TEST-BED

Ephémère and Osmose (Davies, 2003) whose aim is to communicate subjective experiences of intermingling: interior self and external world, of body and nature; purposefully blurring the Cartesian distinction between subject and object, mind, world and body.

WHAT IS VIRTUAL REALITY?

ONTOLOGICAL TEST-BED



WHAT IS VIRTUAL REALITY?

SOCIAL PRESENCE

Lev Semyonovich Vygotsky

Socialized action does not consist simply of the interaction between individuals in the environment. Social action is a complicated web of diverse actors, interacting on a shared environment, using shared objects both physical and conceptual, in an attempt to negotiate their individual and often competing needs.

This is sustained by a framework that preexist individual interactions and make them consistent, namely culture.

WHAT IS VIRTUAL REALITY?

CULTURAL INTERFACE

Manovich argues that as the production and distribution of all forms of culture become computer based, people increasingly have to "interface" with culturally encoded data (photographs, films, virtual worlds, etc.) and not simply the computer. Cultural interfaces enable the representation and manipulation of cultural data and they are fundamentally fused components of older forms.

WHAT IS VIRTUAL REALITY?

CAVES

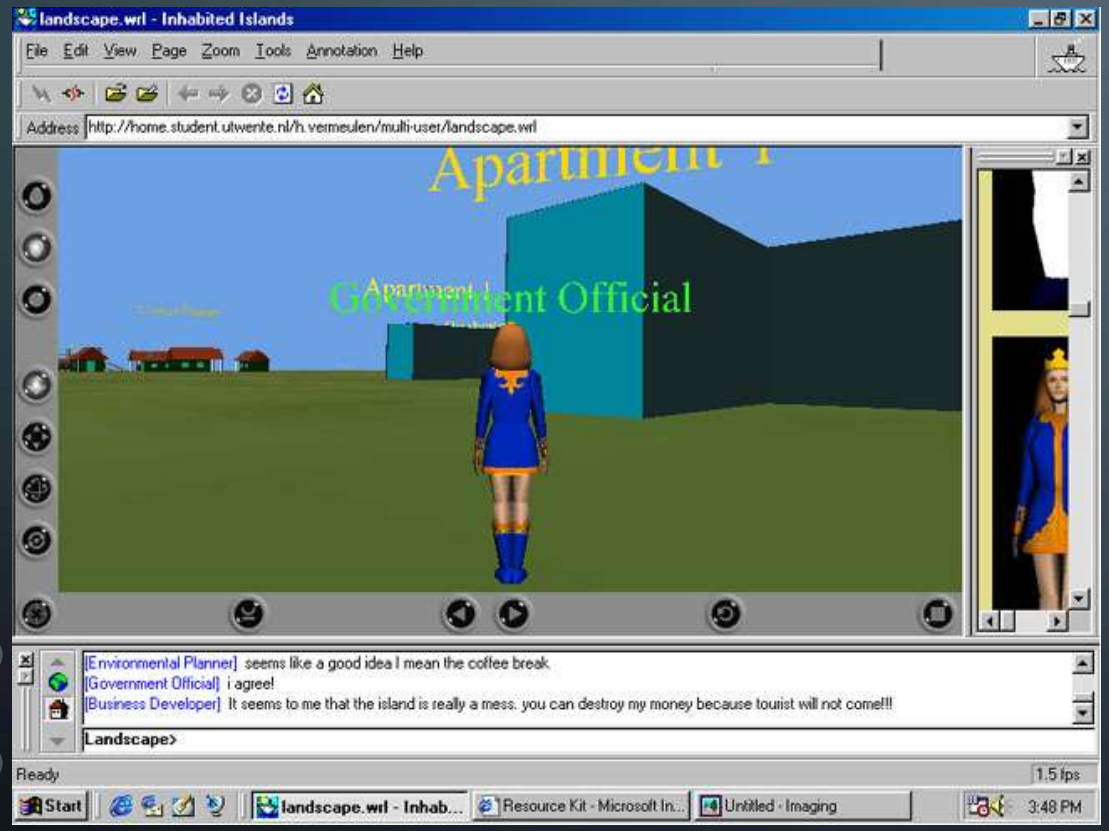
WHAT IS VIRTUAL REALITY?

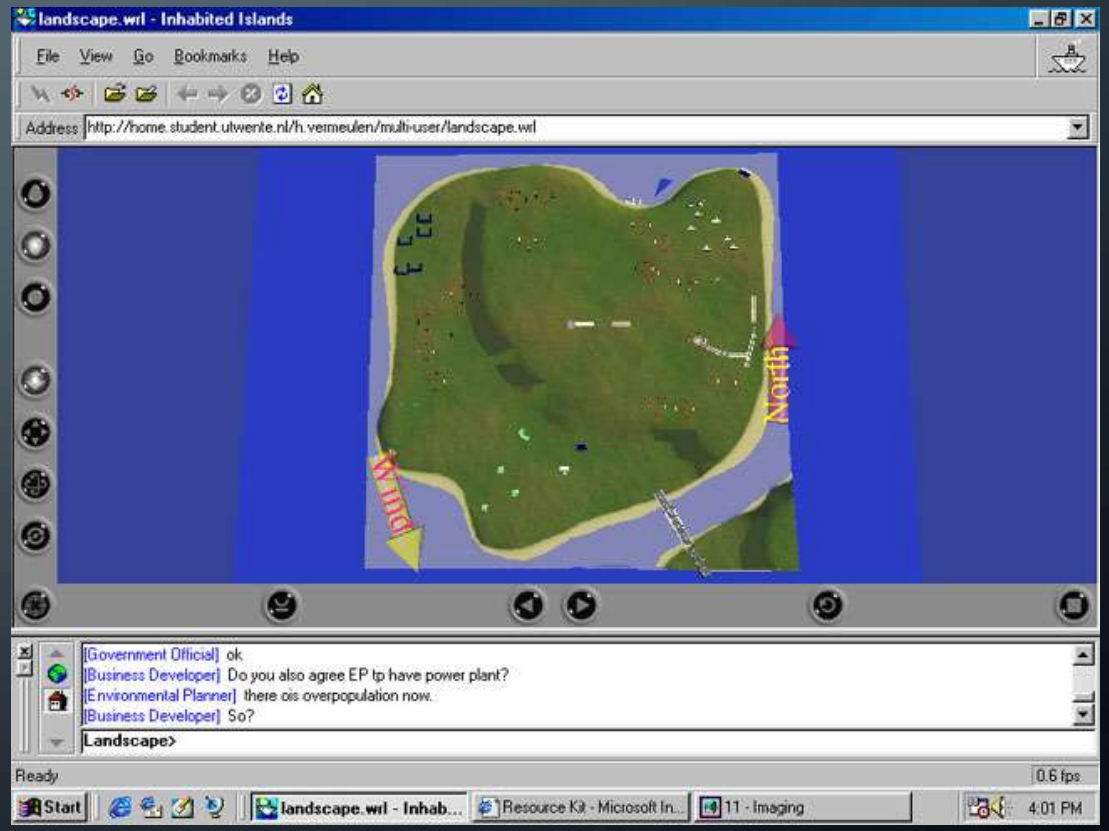
DESKTOP VR

MSC

URBAN DESIGN THROUGH A MULTI-USER VIRTUAL WORLD

University of Twente
The Netherlands





CAVES

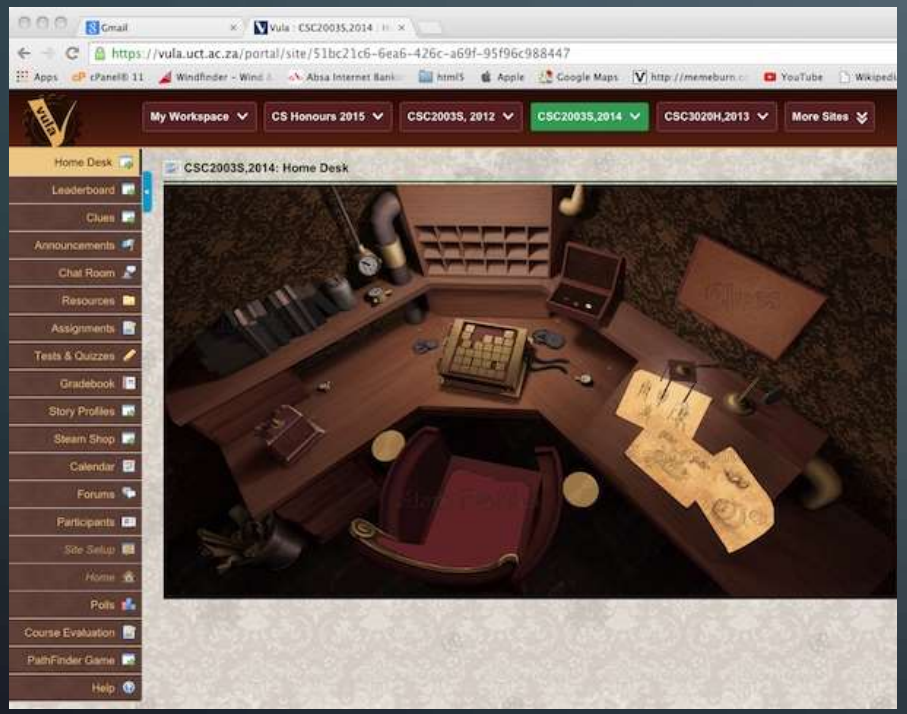
- The **Collaborative African Virtual Environment Systems** (CAVES) research project was set up as a joint venture between the University of Cape Town, National Research Foundation, Council for Scientific and Industrial Research, Contemporary African Music & Arts Archive, Visual Information Systems and Video Labs to overcome the problems with creating Virtual Environment (VE) systems for the South African context.

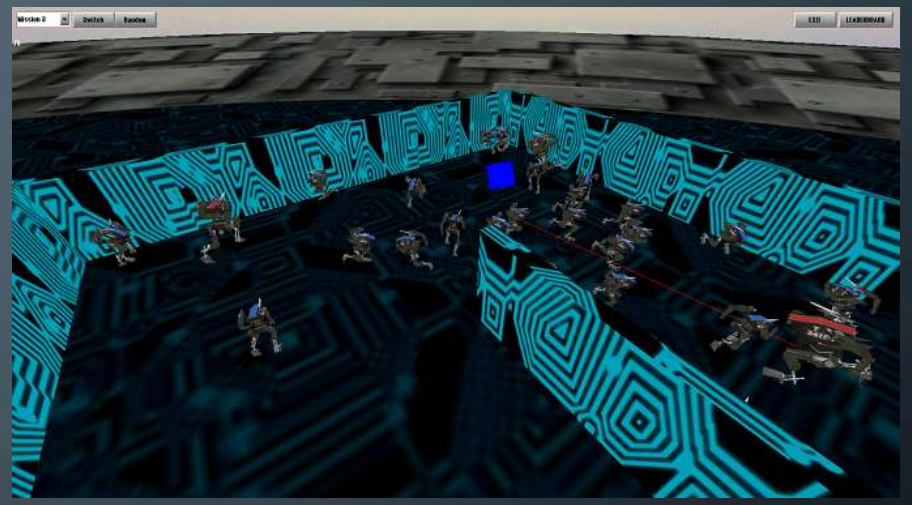
PHD

LEARNING IN A VIRTUAL WORLD

POSTDOC

SERIOUS GAMES AND GAMIFICATION





WHAT CAN WE LEARN?

IN VR

- Complex processes and systems
- Hazardous activities
- Collaborative activities and social practices
- Phenomenon and dimensions beyond our perceptual abilities
- History
- Empathy?

WHAT CAN WE LEARN?

FROM VR

- How beautifully detailed and complex reality actually is
- How the perceptual system works and be influenced
- Cognitive psychology
- Epistemological and ontological testbed
- How much reality is constructed
- What is Reality!

NOW AND THEN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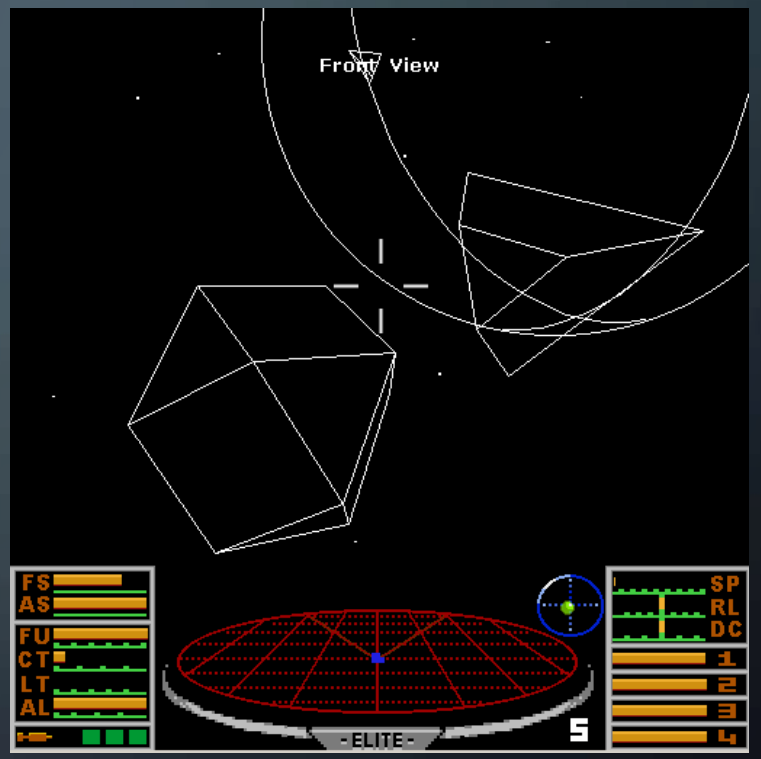
COMMS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NOW AND THEN

SUB