In Any Other World Could You Tell The Difference? Information Ethics and Virtual Worlds

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We are engaged, both on the workplace and at home in virtual digital informational worlds, making things which are impossible to do in reality.


Model and simulate a problem. Add a sound. Animate, emulate, and create artificial worlds. Interact through virtual communities.
We are taking part in an interesting process in which central functions of information society are shifting from hard, real, and physical to soft, virtual, and symbolic.

We are spending an increasing part of our lives in virtual digital worlds, manipulating symbols, playing different roles, taking various characters, making things impossible to perform in reality.
Simulations of reality can be made in variety of ways and with different purposes in technology, science, business, entertainment and many other areas.

Simulations/emulations can never replace the real world - observations, measurements and events but in lack of those, simulations can be very attractive substitutes.
The Info-Computationalist View

The info-computational understanding of cognition: the world, be it real or virtual, is taken as a source of information for an agent. Agency in the world means the process of information structuring through interactive processes.
The Info-Computationalist View

Once information enters the system (an agent), it changes its structures (memories, neural connections, reaction patterns, etc.) which means that the next time the equivalent information enters the system, the interaction will be different, depending on previous experiences.
Virtual Worlds And Real Memory And Perception

What do we know about how to decide on what is real when all we think and feel is information. All our input data are informational, be they caused by “natural” events or a simulation/emulation (“virtual”).

In the limiting case in a Matrix-like virtual world all interactions with the physical reality are replaced by their informational equivalents, communicated to the brain which is not able to discern.
Interactive Nature Of Cognition
Virtual Worlds And Real
Memory And Perception

As living beings we are in constant interaction with our environment, and that is how we learn to know the world.

The essential feature of all cognizing organisms is their ability to manage the complexity of the physical, to handle environmental conditions with a variety of responses by adaptation, variation, selection, learning, and/or reasoning for which we use our physical bodies as information processing machines.
Interactive Nature Of Cognition
Virtual Worlds And Real Memory And Perception

*ScienceDaily (Jun. 13, 2008)* —
Less than a week after Los Alamos National Laboratory's Roadrunner supercomputer began operating at world-record petaflop-per-second data-processing speeds, Los Alamos researchers are already using the computer to mimic extremely complex neurological processes.

Increasingly complex living organisms arise as a consequence of evolution. They are able to register inputs (data) from the environment, to structure those into information, and, in more developed organisms, into knowledge, all of which is essential for survival.

As on the present stage of the development we are relying more and more on pre-processed information, often in a form of interactive surrogate environments a new emerging realities forms informational eco-systems (Floridi).
Hierarchical models and their inversion

\[ v^{(l)} = g(x^{(l)}, v^{(l+1)}) + \varepsilon_v^{(l)} \]
\[ \partial_x x^{(l)} = f(x^{(l)}, v^{(l+1)}) + \varepsilon_x^{(l)} \]

Top-down messages

\[ \varepsilon_v^{(l)} = \mu_v^{(l)} - g(\mu_x^{(l)}, \mu_v^{(l+1)}) \]
\[ \varepsilon_x^{(l)} = \partial_x \mu_x^{(l)} - f(\mu_x^{(l)}, \mu_v^{(l+1)}) \]
\[ \partial_x \mu_x^{(l)} = -\frac{\partial_{x \varepsilon_v^{(l+1)}}}{\partial_{x \varepsilon_v^{(l)}}} F \varepsilon_v^{(l)} - \frac{\partial_{x \varepsilon_x^{(l)}}}{\partial_{x \varepsilon_v^{(l)}}} F \varepsilon_v^{(l)} \]

Bottom-up messages

Prediction error

Generation

Recognition

http://www.fil.ion.ucl.ac.uk/Friston/ Karl Friston, Wellcome Trust Centre for Neuroimaging
Neuronal hierarchies and hierarchical models

Distributed Hierarchical Processing in the Primate Cerebral Cortex

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http://www.fil.ion.ucl.ac.uk/Friston/ Karl Friston, Wellcome Trust Centre for Neuroimaging
How To Make The Difference?

In this informational ecology with a mixture of information with real and virtual origins, what is the limit where we might start to fear losing connections with the physical world?
How To Make The Difference?

Can a world exist where all information is virtual and no direct human experience is made?
At the same time as cognition is influenced by information used to produce knowledge, at least as much it is affected by our bodily reactions to the worlds we are immersed to – our feelings and emotions. They are most manifestly present in arts and games.
The Importance Of Emotion – Games And Arts

A virtual world designer is a Magister Ludi of Hesse’s The Glass Bead Game, who decides the available set of possibilities of meanings and experiences within a world. This includes the interaction modes given by the rules of the game.
By modeling the relation of an act to its consequences, the designer signals social significance, ethical framework, value system and similar. In this way, a sound ethical model may, (or may not), be built into the virtual world, affecting the users ideas and dispositions.
Several authors have already analyzed ethical consequences of the virtual, arguing for a broad spectrum of views, the frequent ones being variations on the theme “it makes no difference, it is anyway not real” which amounts to the claim that we just have to keep a clear distinction between the real (to which usual norms apply) and virtual (which represents a space of unrestricted choices).
Summary: Questions On Distributed Cognition

Living in both physical and virtual worlds how can we make the difference?

We are clearly able to distinguish between fictional characters and real people. The question is how to make difference between fictional/softbots/synthetic agents and real people when we never meet in real world?

Do we need to make a difference between intelligent agents, real and virtual?

Summary: Questions On Distributed Morality

Our morals depend crucially on information about "what is the case"? What sort of information in a mixed real/synthetic world can we rely on?

Is a scenario possible where humans cut off direct contacts with physical environment and let the intelligent machinery do the job? Robots designing and producing robots producing everything else necessary for humans to survive in a virtual world?

What about cognitive enhancements and humans converging towards machines – a smooth transition to a mixed human-machine society?
Conclusions

Our experiences (given hardware we are born/grown/enhanced into will form our cognitive structures, preferences, and reaction forms. Coming from both real and virtual worlds, they are information processing similar in character so we have good reasons to be careful when forming the “rules of the game” for the virtual as virtual is increasingly becoming constitutive for a human.
conclusions

Info-computationalist approach makes evident the need of ethical judgment of our current state of affairs, as it points out how our cognitive mechanisms function on a basic level, and how much potential choices can be for the future development.

The question is not only if a user feels good in the given virtual environment, but also what kind of long-term consequences life in the increasingly virtual world may cause for the humanity and civilization.