



SEMANTICS OF CYBERSPACE & HUMAN NATURE

MTEC3230 - Week#3

```
if (minor != 0) {
    return -EINVAL;
}
return snd_register_device_for_dev(
    type, card, dev);
}

static int snd_unregister_device_for_dev(
    int type, struct snd_card *card, int dev)
{
    int minor;
    struct snd_device *device;

    if (type < 0)
        return -EINVAL;

    if (card == NULL)
        return -EINVAL;

    if (dev < 0)
        return -EINVAL;

    if (card->ops == NULL)
        return -EINVAL;

    if (card->ops->private_data == NULL)
        return -EINVAL;

    mutex_lock(&card->mutex);

    for (minor = 0; minor < ARRAY_SIZE(card->minors); ++minor) {
        if (card->minors[minor] == dev) {
            device = card->minors[minor];
            card->minors[minor] = -1;
            snd_unregister_device(device);
            return 0;
        }
    }

    return -EINVAL;
}

EXPORT_SYMBOL(snd_unregister_device_for_dev);

static int snd_unregister_device(
    struct snd_device *device)
{
    int type;
    struct snd_card *card;

    type = device->type;
    card = device->card;

    if (type < 0 || card == NULL)
        return -EINVAL;

    mutex_lock(&card->mutex);

    for (minor = 0; minor < ARRAY_SIZE(card->minors); ++minor) {
        if (card->minors[minor] == device->id) {
            card->minors[minor] = -1;
            return 0;
        }
    }

    return -EINVAL;
}

EXPORT_SYMBOL(snd_unregister_device);

static int snd_unregister_device_for_dev(
    int type, struct snd_card *card, int dev)
{
    int minor;
    struct snd_device *device;

    if (type < 0)
        return -EINVAL;

    if (card == NULL)
        return -EINVAL;

    if (dev < 0)
        return -EINVAL;

    if (card->ops == NULL)
        return -EINVAL;

    if (card->ops->private_data == NULL)
        return -EINVAL;

    mutex_lock(&card->mutex);

    for (minor = 0; minor < ARRAY_SIZE(card->minors); ++minor) {
        if (card->minors[minor] == dev) {
            device = card->minors[minor];
            card->minors[minor] = -1;
            snd_unregister_device(device);
            return 0;
        }
    }

    return -EINVAL;
}

EXPORT_SYMBOL(snd_unregister_device_for_dev);
```

WHAT IS CYBERSPACE?



CYBERSPACE (CYBERNETICS + SPACE)

“Both cyberspace and magical space are purely manifest in the imagination. Both spaces are entirely constructed by your thoughts and beliefs. Korzybski says that the map is not the territory. Well, in magic, the map is the territory. And the same thing is true in cyberspace.

There’s nothing in that space you didn’t bring in.”

M. Pesce, in E. Davis, 1998, Techgnosis, Serpents Tail, NY

```
if (minor != 0) {
    return -EINVAL;
}
if (type == SND_CARD) {
    struct snd_card *card;
    if (card == NULL) {
        return -EINVAL;
    }
    preg = kmalloc(sizeof(struct snd_device), GFP_KERNEL);
    if (preg == NULL) {
        return -ENOMEM;
    }
    preg->type = type;
    preg->card = card;
    preg->minor = 0;
    return preg;
}
if (type == SND_DSP) {
    struct snd_dsp *dsp;
    if (dsp == NULL) {
        return -EINVAL;
    }
    preg = kmalloc(sizeof(struct snd_device), GFP_KERNEL);
    if (preg == NULL) {
        return -ENOMEM;
    }
    preg->type = type;
    preg->dsp = dsp;
    preg->minor = 0;
    return preg;
}
return -EINVAL;
```

```
/*
 * snd_open - open a device
 * @inode: inode of the device
 * @file: file pointer
 * @mode: mode
 * @flags: flags
 * @minor: minor number
 * @dev: device
 * @type: device type
 * @card: card
 * @dsp: dsp
 * @private_data: private data
 * @return: minor number or error code
 */
static int snd_open(struct inode *inode, struct file *file)
{
    int ret;
    struct snd_device *dev;
    struct snd_card *card;
    struct snd_dsp *dsp;
    struct snd_device *preg;

    if (inode->i_rdev == 0)
        return -EINVAL;

    if (type == SND_CARD) {
        card = snd_card_get_by_dev(inode->i_rdev);
        if (card == NULL)
            return -EINVAL;
    } else if (type == SND_DSP) {
        dsp = snd_dsp_get_by_dev(inode->i_rdev);
        if (dsp == NULL)
            return -EINVAL;
    } else {
        return -EINVAL;
    }

    preg = snd_get_device(type, card, dsp);
    if (preg == NULL)
        return -EINVAL;

    mutex_lock(&sound_mutex);
    if (minor < 0)
        return -EINVAL;

    if (minor >= ARRAY_SIZE(snd_minors))
        return -EINVAL;

    if (snd_minors[minor] != NULL)
        return -EBUSY;

    snd_minors[minor] = preg;
    return minor;
}
```

```
case SND_CARD:
    case SND_DSP:
    case SND_DEVICE:
        minor = 0;
        break;
    case SND_CARD:
        struct snd_card *card;
        minor = snd_card_get_by_dev(inode->i_rdev);
        if (minor < 0)
            return -EINVAL;
        card = snd_card_get_by_dev(inode->i_rdev);
        if (card == NULL)
            return -EINVAL;
        break;
    case SND_DSP:
        struct snd_dsp *dsp;
        minor = snd_dsp_get_by_dev(inode->i_rdev);
        if (minor < 0)
            return -EINVAL;
        dsp = snd_dsp_get_by_dev(inode->i_rdev);
        if (dsp == NULL)
            return -EINVAL;
        break;
    default:
        return -EINVAL;
}
return minor;
```

```
/**
 * snd_unregister_device - unregister the device on the given card
 * @card: the device type: SND_CARD or SND_DSP
 * @dev: the device instance
 * @minor: the device index
 * @name: the device file name
 * @device: the device to register
 * Returns zero if successful, or a negative error code on failure.
 */
int snd_unregister_device(struct snd_card *card, int dev)
{
    int minor;
    struct snd_device *dev;

    if (dev < 0)
        return -EINVAL;

    if (dev >= ARRAY_SIZE(snd_minors))
        return -EINVAL;

    preg = snd_minors[minor];
    if (preg == NULL)
        return -EINVAL;

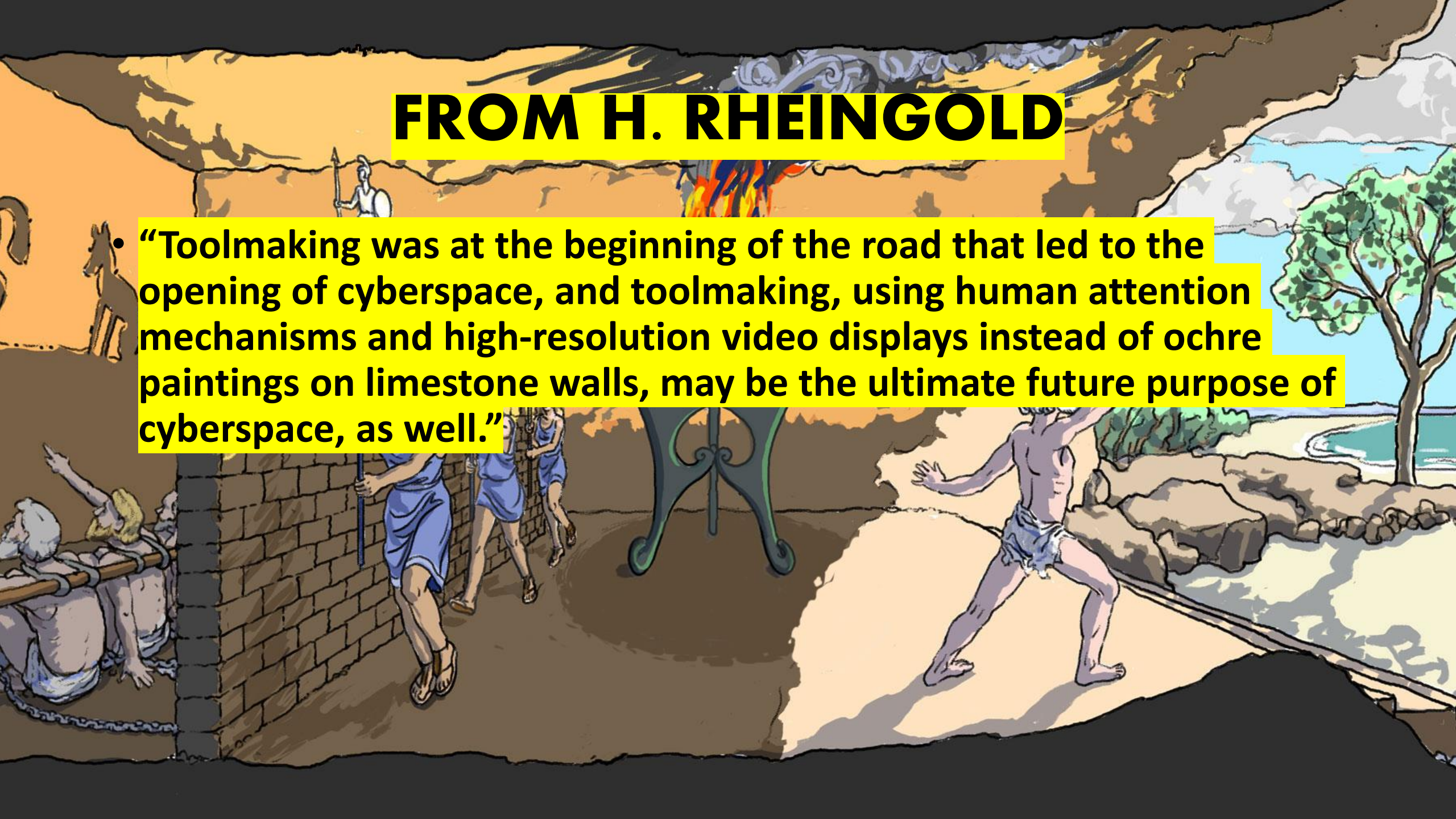
    mutex_lock(&sound_mutex);
    preg->card = card;
    preg->device = dev;
    return -EINVAL;
}
```

FROM W. GIBSON

- “Cyberspace. A consensual hallucination experienced daily by billions of legitimate operators (...)
- A graphic representation of data abstracted from the banks of every computer in the human system.
- Unthinkable complexity.
- Lines of light ranged in the non space of the mind, clusters and constellations of data. Like city lights, receding.”

FROM H. RHEINGOLD

- “Toolmaking was at the beginning of the road that led to the opening of cyberspace, and toolmaking, using human attention mechanisms and high-resolution video displays instead of ochre paintings on limestone walls, may be the ultimate future purpose of cyberspace, as well.”



FROM M. HEIM

- **“Only a short philosophical step separates the Platonic notion of knowledge from the matrix of cyberspace entities. (...) In the Republic, Plato tells the well-known story of the Cave in which (...) prisoners passively take sensory objects to be the highest and most interesting realities. Only later, when prisoners manage to get free of their corporeal shackles, do they ascend to the realm of active thought, where they enjoy the shockingly clear vision of real things, things present not to the physical eyes but to the mind’s eye**
- **Only by actively processing things through mental logic, according to Plato, do we move into the upper air of reliable truth, which is also a lofty realm of intellectual beauty stripped of the imprecise impressions of the senses.**
- **Thus the liberation from the Cave requires a reeducation of human desires and interests. (...) Cyberspace is Platonism as a working product.”**

FROM M. HEIM

- “Cyberspace is a metaphysical laboratory, a tool for examining our very sense of reality. (...) Our love affair with computers, computer graphics, and computer networks runs deeper than aesthetic fascination and deeper than the play of the senses.

We are searching for a home for the mind and the heart. Our fascination with computers is more spiritual than utilitarian.

Rightly perceived, the atmosphere of cyberspace carries the scent that once surrounded Wisdom. The world rendered as pure information not only fascinates our eyes and minds, but also capture our hearts. We feel augmented and empowered. Our hearts beat in the machines.”

The background is an abstract composition of thick, expressive brushstrokes in shades of red, orange, and dark blue. On the left side, there is a faint, vertically-oriented image of a human face, showing the nose and mouth, which appears to be part of the underlying artwork or a digital overlay.

FROM M. HEIM

- **“At the computer interface, the spirit migrates from the body to a world of total representation.”**

FROM M. WERTHEIM

“Cyberspace follows the virtual laws of thought rather than the concrete laws of matter, cyberspace provides a cosmos where the psyche can once again live and breath. Cyberspace brings the historical wheel full circle and returns us to an almost medieval position, to a two-tiered reality in which psyche and soma each have their own space of action.

Cyberspace is a shared interactive environment, an electronic ‘soul-space’ that beckons the postmodern psyche to both find and remake itself.”

FROM B. STERLING

“Cyberspace is the "place" where a telephone conversation appears to occur. Not inside your actual phone, the plastic device on your desk. Not inside the other person's phone, in some other city. The place between the phones.

In the past twenty years, this electrical "space," which was once thin and dark and one-dimensional—little more than a narrow speaking-tube, stretching from phone to phone—has flung itself open like a gigantic jack-in-the-box. Light has flooded upon it, the eerie light of the glowing computer screen.”





FROM J. BARLOW

“Cyberspace consists of transactions, relationships, and thought itself, arrayed like a standing wave in the web of our communications.”

• Cyberspace is a world that is both everywhere and nowhere, but it is not where bodies live.”

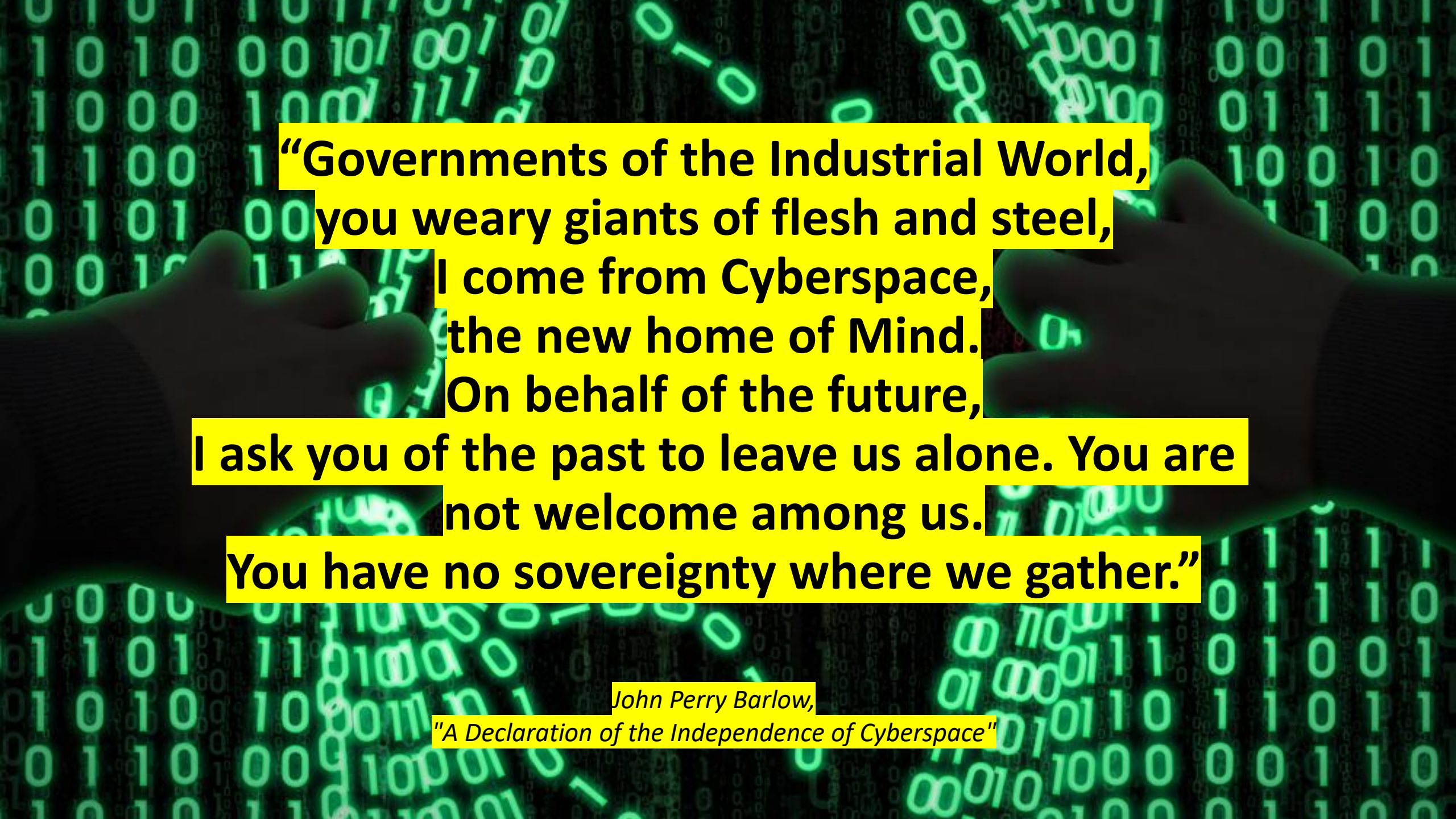
FROM C. MORNINGSTAR & F. FARMER

“Cyberspace is defined more by the social interactions involved rather than its technical implementation.”

• The core characteristic of cyberspace is that it offers an environment that consists of many participants with the ability to affect and influence each other.”

US DEPARTMENT OF DEFENSE

“Cyberspace as one of five interdependent domains, the remaining four being land, air, maritime, and space.”



**“Governments of the Industrial World,
you weary giants of flesh and steel,
I come from Cyberspace,
the new home of Mind.
On behalf of the future,
I ask you of the past to leave us alone. You are
not welcome among us.
You have no sovereignty where we gather.”**

John Perry Barlow,

"A Declaration of the Independence of Cyberspace"



Actual / Virtual

Soma / Psyche

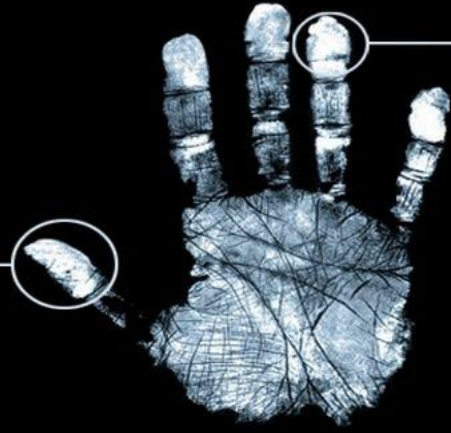
Matter / Consciousness

Physical world / Cyberspace

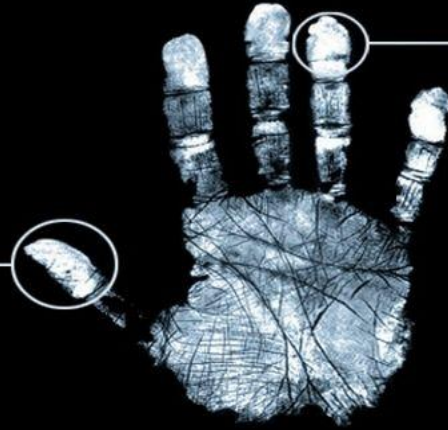
...

A man in a black suit and top hat with a white face mask, standing in a field with birds flying in the sky.

**WHAT DOES CYBERSPACE
LOOK LIKE?**



WHAT DOES IT MEAN 'HUMAN NATURE'?



What makes a human human?

The answers seem to change every other 200 years ...



SENSORIUM

- Aristotelian senses and other physiological capacities:

Sight, hearing, taste, smell, touch, temperature, pain, time, ...

Media, technology & sensory prosthesis, M. Mc Luhan

“The most human thing about us is our technology”

“The wheel is an extension of the foot, the book is an extension of the eye, clothing an extension of the skin, electric circuitry an extension of the central nervous system.”

NEEDY MACHINE

- Hierarchy of Needs, A. Maslow

Physiological needs

Safety needs

Love & Belonging

Esteem

Self-actualization

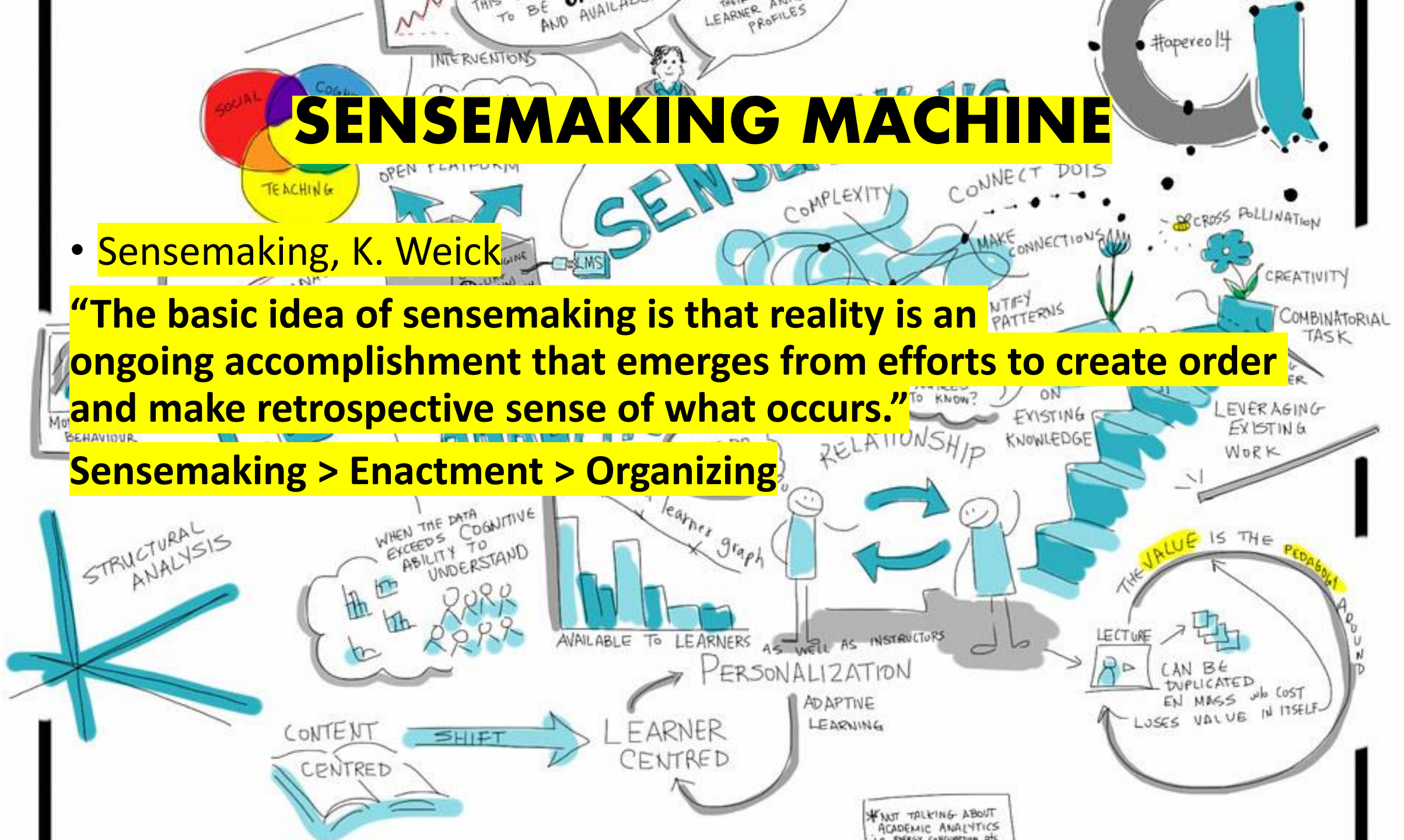


SENSEMAKING MACHINE

- Sensemaking, K. Weick

“The basic idea of sensemaking is that reality is an ongoing accomplishment that emerges from efforts to create order and make retrospective sense of what occurs.”

Sensemaking > Enactment > Organizing



TOOLMAKING MACHINE

- The liberation of the hand, P. Leroy Gourhan

1-Manipulation (primates/pre paleolithic)

2-Direct Motor Function (stick/paleolithic)

3-Indirect Motor Function (bow/neolithic)

4-Mechanical Program (plow/classical antiquity)

5-Mechanical Memory (computer chip/xx century)

T.O.S (THE OPERATING SYSTEM)

- The medium is the message, M. Mc Luhan

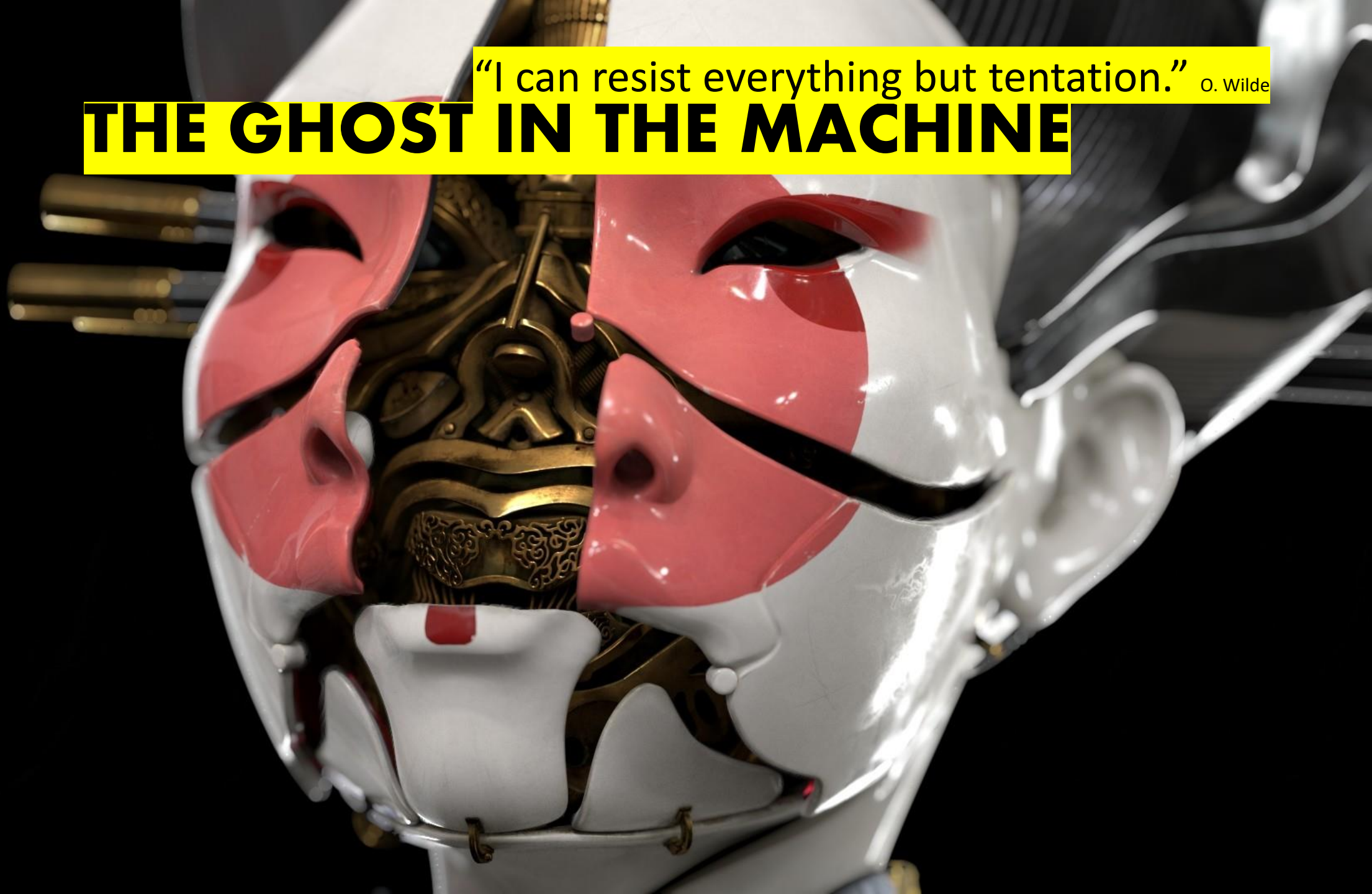
“We become what we behold. We shape our tools, and thereafter our tools shape us.”

- On the domestication of human beings, P. Sloterdijk

“The domestication of the human being is the great unthought; it is that before which humanism from antiquity to the present day has averted its eyes.”

"I can resist everything but tentation." o. Wilde

THE GHOST IN THE MACHINE



BACK TO QUIL



IN QUILL

Hide Controls Mapping / Show Axis gimbal

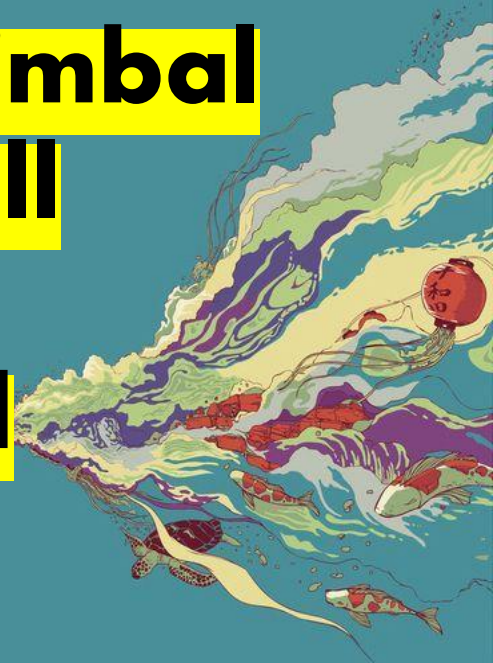
Import a reference image into Quill

Trace over the reference image

Make sure your work is centered

Take screenshot of your work

Export your work as fbx



WONDA VR SPACES

[-Sign up](#)

[-Follow the guidelines "How to import a 3D object from Spoke"](#)

[-Convert your fbx into GLTF with 3D Viewer and Upload on Sketchfab](#)

[-Interact with your 3D object in Wonda VR Spaces](#)

