

**INTERNSHIP AT
RESEARCH GROUP
IXD OF FONTYS ICT**

**THE DPBTSE STRATEGIC
CONCEPT AND DESIGN CHALLENGE
FOR APPLICATION OF (A) UNIVERSAL
TRANSLATOR / PERSONAL ASSISTANT
WITH GENERATIVE A.I. AND LARGE
LANGUAGE MODELS**

GENERATION OVERLOAD

DESPERATELY IN NEED OF NEW IDEAS FOR THE 21ST CENTURY

THE · D E E · P E E · B E E · T E E · S · E E

THE DEAD PHILOSOPHERS BRAINSTORM TO SOLVE EVERYTHING



THE SHAPE, MATTER AND POWER OF OUR RELATION WITH INFORMATION COMMUNICATION NEEDS AND INFORMATION OVER- AND UNDERLOAD

A strategic design experiment and challenge for ideas, products, services, and environments with regards to new ways of information moderation, transformation, curation, and publishing by means of artificial intelligence / generative a.i. in domains like...

21st century education (broadly) for all, journalism & publishing, democracy and politics, health care, arts and cultural exchange, museums, science communications, built environment.. and possible crossovers.

The DPBTSE (The Dead Philosophers' Brainstorm To Solve Everything) is part of the research group Interaction Design (IXD) of Fontys ICT. The DPBTSE is a combination of a think-tank and a creative lab for the research group interested to use (and/or) the combination of methods: Science, Arts (and design), Creativity and Philosophy. To create innovative, interactive concepts, products, services and experiments therefore.

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THE DPBTSE STRATEGIC CONCEPT AND DESIGN CHALLENGE FOR APPLICATION OF (A) UNIVERSAL TRANSLATOR / PERSONAL ASSISTANT.

-The shape matter and power of our relation with information (& communication) needs and over – and underload IN THE 21ST CENTURY.

A strategic design experiment and challenge for ideas, products, services, and environments with regards to new ways of information moderation, transformation, curation, and publishing by means of artificial intelligence / generative a.i. in domains like...

21st century education (broadly)for all, journalism & publishing, democracy and politics, health care, arts and cultural exchange, museums, science communications, built environment.. and possible crossovers. For all.

Set up an iterative brainstorm cycle to create a couple of really interesting use cases / ideas in each of these domains to set up a portfolio and communication with partners. See also 'map'.

Note 1: But we promote and seek a combination of rational linear and intuitive ailinear open ended exploration. (please help!)

Note2: We promote and seek special attention for the questions, issues and concerns on the theme of information over (-and under)load

-The relationship between information, understanding and critical thinking (and creativity).

-The relationship between information, feeling and empathy.

-The relationship between people and a.i.

-The relationship between information and understanding.

-The psychology of the relationship between parts of information and the whole of information (valley of despair).

-The relationship between quantitative and qualitative aspects of information need and overload.

-The relationship between dialogue interfaces and information

-The relation between us and the good old internet in the age of personal assistants.

-information and communication.

-CREATING (POCKETS) OF MEANING IN A SEA OF INFORMATION

-And so on...

-For more see below.

INFOVERLOAD

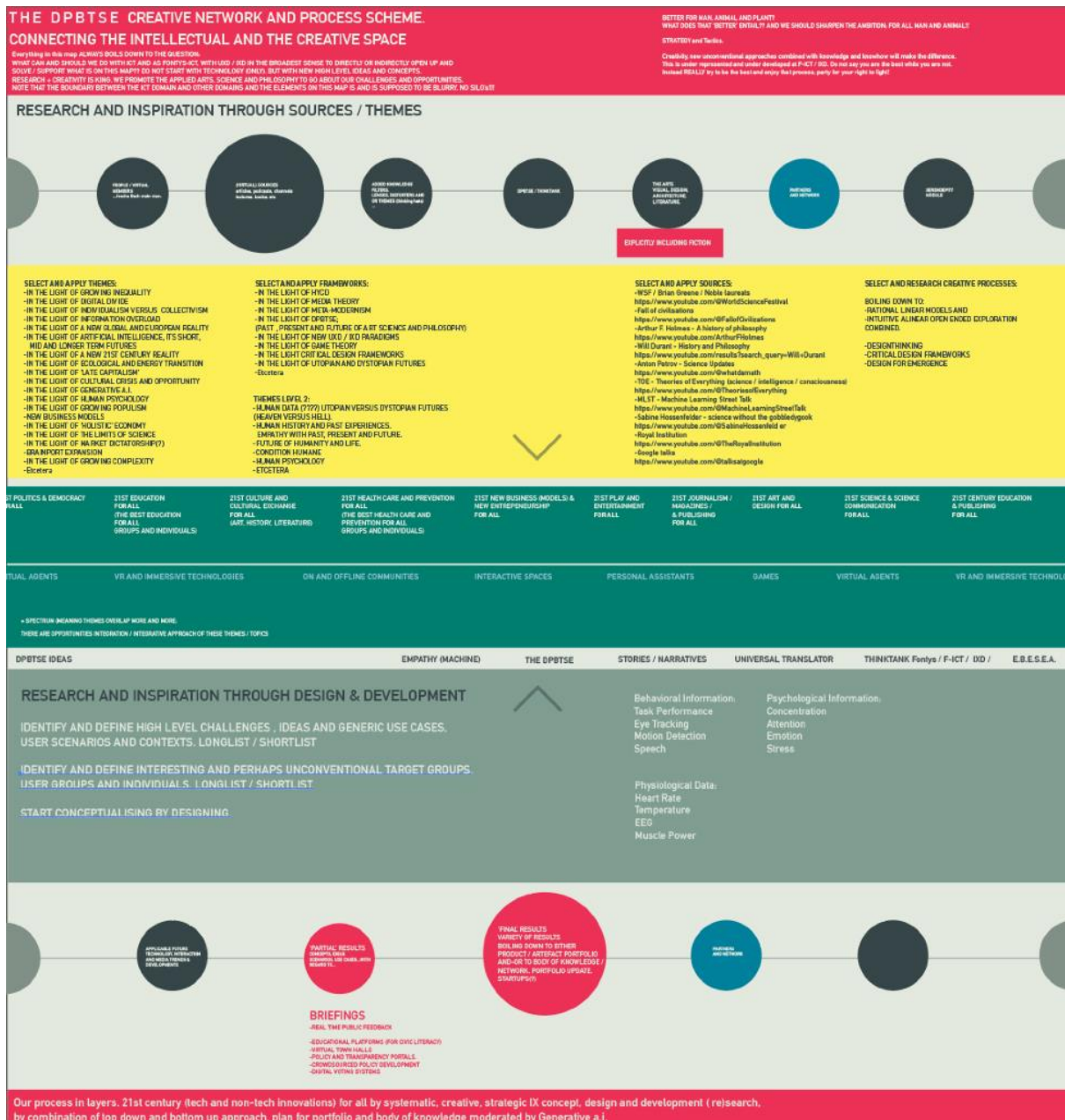
WARNING: SOLVED COMPLEXITY.

WARNING: SOLVED SIMPLICITY.

WARNING: INFORMATION OVERLOAD

WARNING: COMPLEXITY.

WARNING: DPBTSE inside.



Information (overload) might pertain to sensory information(overload) proper. Or to information (overload) as representation (models / symbols / semantics / semiotics).

Research theme: LLM and info overload. Info overload, media, info need and publishing.

We (DPBTSE) have become more aware of the issue and challenge of Info overload in general and more specifically with regard to a responsible, democratic, liberal way of moderating information that is growing in volume and -or is growing in complexity in parallel with growing complexity of societies and even more so with the advent of generative a.i.

Simplicity is solved complexity. Complexity is solved simplicity.

Dimensions of information (overload): historical, cultural, personal, psychological, political, legal, economical,...

The phenomena of info overload is related to the increasing complexity of our civilisations and societies and the information 'needed' for communication for it to function and develop, to understand itself and to make sense. Partly it is also a self-perpetuating thing that we think we cannot do without. Creation of information seems to inevitably lead to more and more information creation and so on.

Just as we are outsourcing more and more intellectual activity and decision-making to machines this strategic design experiment pertains to the experimental attempt to solve information overload by means of a.i. concept, design and development.

This experimental strategic design project wants to address this problem by its main preliminary question:

How can UX concept, design and development of A.I. / LLM's and LLM interfacing and application play a (responsible, explainable, 'exciting', inspiring etc.) role in solving or getting grip on phenomena that are part of what is called information over -and underload?

Can LLM's responsibly solve complexity instead of adding to it in an unwanted manner. (it is not said that sometimes for many reasons we suppose increasing complexity is not the better option)

Can LLM's play a role in moderating information to levels of desired solved and unsolved complexity suited for (virtual) human-(virtual) human interaction?
(Information is food for thought however constant stimuli in-formation influence or halt thinking, contemplation and creativity)

In this project we want to focus on experiments with info overload within the application of LLM's to diverse use cases that differ in (high / low) sensitivity and (high / low) complexity.

Wickedness of the information overload problem. It seems that to get a grip on information overload challenges the solution(s) always add to the complexity / problem not only because it takes communication and thus information is added but also in a more qualitative sense. There is only so much information we can hold in terms of volume (memory and working memory / quantitatively) but also in terms of the actual content of the information (intelligence(s) / qualitatively).

Cultural generation (generational cultural information transfer). Homo universalis; the last person without info overload? Polymath in your pocket.

There is never control by any person on all the information (not even in ones head or at least not in mine). There is always thinking going on with parts of it in relation to the whole of information a person or a group possesses or to the total amount of information there is.

Information integration 'solves' complexity (for better and for worse by abstract reasoning and conceptualization / generalisation) which is needed because of limited memory or memory access(?). Here machines differ; they can hold and deal with lots of information in memory. LLM's are the first machine to transform and possibly integrate this information in the form of natural human language as in – and output. This entails much more (in terms of intelligence / empathy) than first sight or thought might suggest. Just memory? And just speech?

Can they be good assistants to mitigate and or solve our info overload. **To establish a new responsible way of our collective and individual relationship with information?**

Surely they will be creators of information overload!

How to make sure people think for themselves as much as possible to ensure the most success in knowing what they want and need and not what they think they need and want but is forced upon them by whatever kind of influence.

How will our future relationship with information evolve?

How can we (pro-actively) shape this relationship and interaction in a responsible way?

Positioning of Fontys ICT and DPBTSE in relation to partners. Our added value and field of operation.

1 F-ICT expertise and action to inform and shape the design and tailor making thereof and the prototyping proper. With possibly students, third party suppliers and so on to accelerate and facilitate the designing / making / building process.

2 F-ICT expertise and advice to (in)form creativity, concepts, design and development in the broadest ethical and societal impact sense on a.i. and LLM's and application, that is not present at our partners. (as opposed to domain specialist knowhow they themselves have). Including identifying extra specialist knowledge to be incorporated if necessary.

3 We again plea for a combination of a thinktank / generalist / creative group. Guarding and deploying a generalist stance with regards to the multifaceted and multi dimensional character of (applied) a.i. in general and the a.i.'s specific application

DPBTSE; applied, arts, science and philosophy. A Philosophy > Research / strategic / concept / design / development -group. What is the undercurrent in global, European, national and regional societal development and economy and what are upcoming themes and challenges and what are upcoming paradigms and what can / should we do with information, communication technology and interaction **design** to mediate this and what shape and form can this take?

INFORMATION OVERLOAD SOLVING BY CONCEPT AND DESIGN OF GENERATIVE A.I. INTERFACING. Artificial Intelligence and Interaction Design.

The strategic design project involves the conceptualization, design of solutions and applications of (generative) a.i to problems, challenges, opportunities of Info over -and underload moderation.

From a free liberal social democratic point of view in a new 21st century European, technological, social and economic reality in areas like education and communication, journalism, new social media, publishing, the arts, science and philosophy, culture, health care, for communities, thinktanks like the DPBTSE / IxD, games and others.

<https://www.historynewsnetwork.org/article/how-to-cope-with-information-overload>
https://en.wikipedia.org/wiki/Information_overload

WARNING INFORMATION OVERLOAD. As we have come to the awareness and conclusion that an overarching theme or challenge of modern day society and human beings and of many IxD projects, IxD 'needs and wants' comes down to ways of dealing with and solving or moderating of what generally is called 'information overload'. This touches upon the need for rethinking and reshaping matter and form (and perhaps integrating) of categories like; education, journalism, democracy, healthcare, art and cultural exchange, nature and ecology and so on. See map.

It is not just about sticking a 21st century 'solution' on a 20th century challenge, problem, domain etc. We need to think creatively about these as 21st century phenomena and take it from there. We are convinced that multi-disciplinary and meta disciplinary approach is necessary for the much needed unconventional thinking. Next to the technological challenge there is a creative and societal challenge. Big time.

The amount of synthetic information, content, bots, avatars, accounts, deep fakes etcetera that is coming at us via the internet is not to be underestimated.

Info overload. Especially with the advent and further development of generative a.i. Being aware and finding the right information and individual and collective meaning in a sea of information and understanding each other is getting more and more problematic.

Overarching theme with many IxD projects and themes and for LLM / Gen A.I. application is this information overload. Whether it pertains to the problem or the proposed solutions. Liberal democratic societies are ever more complex and demand evermore information exchange or moderations. Where we want to educate (in the broadest sense of the word) and inform people this is a big challenge especially given the fact that for instance the sheer quantity of information will be a 'quality' in itself. This might result in withdrawal. A new

relationship with information all together is coming / needed / wanted / unwanted perhaps (i.e. in parallel disappearing of the internet as the major interface) and or information moderation by LLM with different modalities and for different target groups and their respective needs and wants. We want to explore and design a new relationship with information in general and through means of ICT.

The wickedness of the info overload problem is that it seems proposed solutions add to the problem.

Related phenomena.

ENTROPY (AND THE RAT RACE): to uphold a body and (society of) mind of any kind is a fight against entropy. Metaphorically fighting entropy is like playing a game that you cannot win and cannot lose as long as you keep playing. However you cannot stop playing...without deteriorating and eventually dying. Upholding the body is the goal in itself. Using energy to do so and having to harvest energy again and again. In other words it is harder to build, maintain and develop than to destroy and to just let degenerate and decompose.

An important part of this 'never ending' effort to uphold bodies and minds is the processing and exchange of information.

How can we reduce complexity (simplicity = solved complexity) and-or shape (interaction with) information in such a way that it mitigates this challenge or shapes a new relationship with information?

How can we conceptualise and design such that to interact with information comes naturally and intuitively? How much information do we need and want?

This therefore is a proposal, plan and inspiration with regards to solving, moderating and interfacing information-overload -and complexity challenges and opportunities (in quantitative and qualitative sense) by large language models and generative a.i. in an ethically responsible, sustainable and practically viable way. With a liberal democratic paradigm. Through the lens of the applied arts, science and philosophy.

This is by far not a (strictly) technological question. Apart from the fact that technology is by far not neutral. Complex matters have no silver bullet let alone silver bullet technological solutions. We do not need ICT solutionism.

Things have to be seen in a broader and more multi or meta disciplinary creative perspective. Of the applied arts, sciences and philosophy.

Philosophy > concept > design and development of human machine cooperation for handling and interaction of:

Quantity of information (too much or not enough)

Quality of information (information density, ease of use of info, substance over content)

Complexity of information (too much or too little)

Simplicity of information (too much or too little)

Generic use cases:

Transforming information

Orienting on information

Structuring information

Navigating information

Integrating information

Sharing information

Digesting information

Collecting information

Structuring of information

Trustworthiness of information (trust must be build)

Sources of information

Compressing information

Fragmentation of information

Storing of information

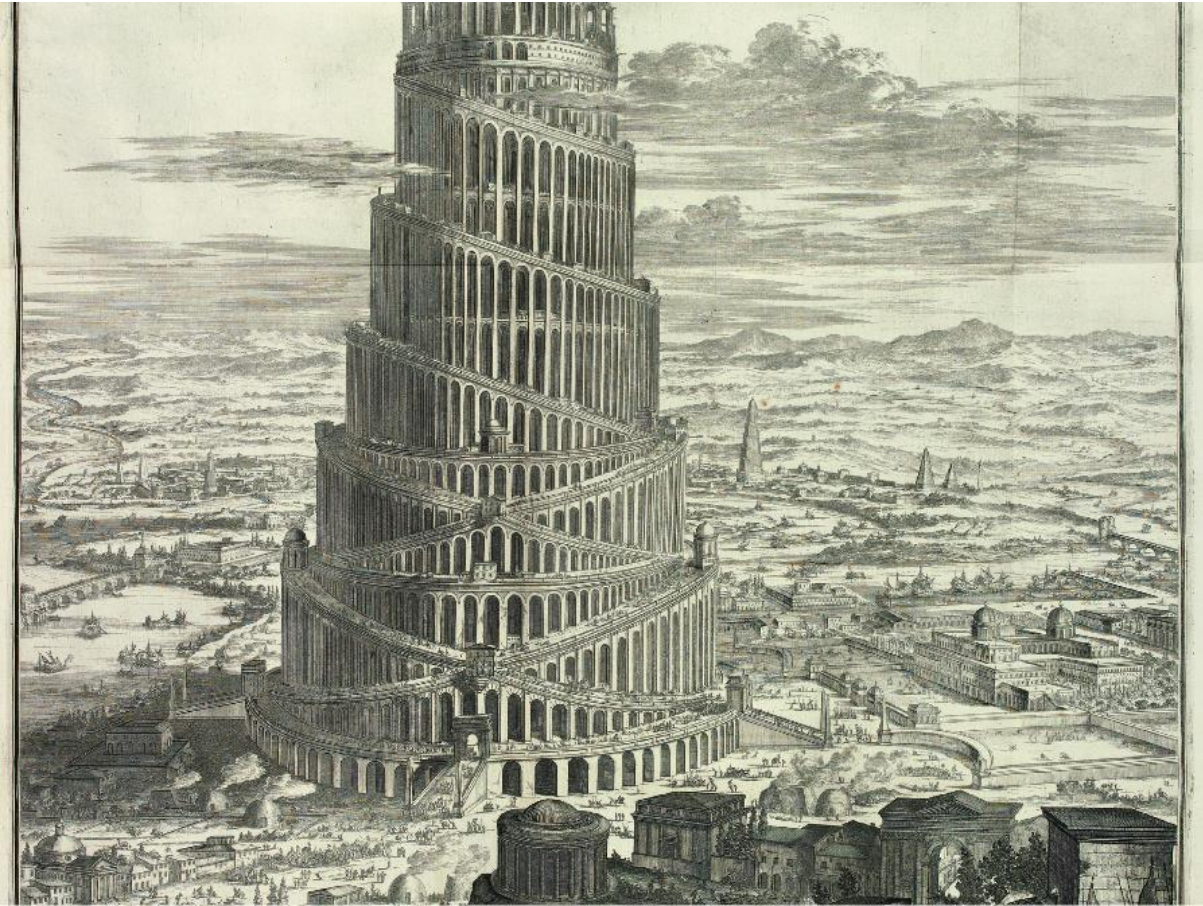
Cross linking information

Associating information

Sublimination of information

Combining information manipulations / translations.

Flow of information



Source GPT:

Information overload, also known as "infobesity" or "infoxication," refers to the state of having more information available than one can process effectively, leading to difficulties in understanding issues, making decisions, and focusing on tasks. This phenomenon has been amplified by the digital age, where vast amounts of data and information are accessible instantaneously. Information overload encompasses various aspects, dimensions, and subtopics, including:

Aspects

- ***Cognitive:*** Overload can overwhelm cognitive capacities, making it hard to concentrate, analyze, and retain information.
- ***Emotional:*** The stress and anxiety caused by trying to keep up with too much information can affect emotional well-being.
- ***Physical:*** Constant engagement with digital devices for information consumption can lead to physical health issues, such as eye strain and poor sleep patterns.

Dimensions

- ***Volume:*** The sheer quantity of information available.
- ***Velocity:*** The speed at which new information is produced and disseminated.

- **Variety:** *The wide range of types and sources of information.*
- **Veracity:** *The varying quality and trustworthiness of information.*

Subtopics

- **Information Filtering:** *Techniques and tools for filtering out unnecessary or irrelevant information.*
- **Information Management:** *Strategies for organizing and prioritizing information for effective use.*
- **Digital Detox:** *Taking breaks from digital devices to reduce overload and improve mental health.*
- **Attention Economy:** *Understanding how digital media competes for our attention and strategies for managing focus.*
- **Cognitive Load Theory:** *Theoretical framework describing the amount of mental effort being used in the working memory, relevant for designing educational materials.*
- **Decision Fatigue:** *The deteriorating quality of decisions made after a long session of decision-making, exacerbated by information overload.*
- **Data Literacy:** *Skills required to collect, analyze, and interpret data, helping to navigate through vast information landscapes efficiently.*
- **Email Overload:** *A specific instance of information overload, where individuals find it challenging to manage a large number of emails effectively.*

Mitigation Strategies

- **Prioritization:** *Focusing on information that is most relevant and important.*
- **Technology Tools:** *Using software and apps designed to filter and organize information.*
- **Mindful Consumption:** *Being conscious of one's information consumption habits and actively working to improve them.*
- **Setting Boundaries:** *Limiting the time spent on information-heavy tasks or digital platforms.*

Understanding and addressing information overload requires a multidisciplinary approach, integrating insights from psychology, information science, education, and technology. Effective management of information overload can lead to better decision-making, improved productivity, and enhanced well-being.

For a comprehensive understanding of information overload, its aspects, dimensions, and subtopics, the literature presents a multidisciplinary perspective, integrating findings from information science, psychology, education, and technology.

One key source provides an extensive review of information overload, focusing on theoretical classifications and definitions, the role of cognitive load theory, media richness theory, and the circular process involving the causes and consequences of information overload. It highlights that information overload is influenced by various factors including individual characteristics, information characteristics, and technological aspects. This complexity

necessitates multifaceted countermeasures to mitigate its effects (Frontiers in Psychology (Frontiers)).

Another important contribution discusses information overload through the lenses of Library & Information Science and Communication Theory, aiming to offer practical solutions for individuals facing overload. This study emphasizes the role of digital literacy and information seeking modes in managing information overload. It suggests that enhancing digital competencies according to the European Commission's Digital Competence Framework can serve as an active response to the challenges posed by information overload (MDPI Information (MDPI)).

These sources collectively underscore the importance of a strategic approach to manage information overload, highlighting the need for both individual and organizational strategies to mitigate its impact. They suggest that by enhancing our digital literacy skills and applying theoretical insights from cognitive load and media richness theories, we can navigate the information-rich environment more effectively.

Overarching questions and research themes

Research theme:

how to close the digital divide that sometimes plays out in certain imagined use cases?

Research theme: how to increase attention span that might play out in certain use cases imagined?

- Threshold complexity
- What interactions do we need and want in the early 21st century and beyond?
- Will and if how will our information needs and interfaces change?
- Humanity centered A.i. and information processing.
- Information overload
- (bridging) societal, economical and digital divides
(Related: cognitive overload. Choice overload. FOMO. Personal assistants)
- Psychology of information ('solving').
- How much information do we need or can we handle?
- If information is transformed what information and transformation and what in and output can we trust? How do we know? What is good (enough)?
- Universal translator interface for the good of humanity.
- others...
- others...

Possibly rethinking / readjusting / incorporating in transforming and moderating information. Not only the content of information but the shape of information in "space and time".

- Pace of information

- Noise of information
- Dominance of information
- Habits and routines of information
-
-
-

Starting point are the DPBTSE info overload challenges which do not only involve DPBTSE communication about itself to the outside world but more challenging, pertains to the desire to share sources and knowledge that are part of our body of knowledge and experience for instance by means of LLM. Next to the desire to set up an (educational) art, science and philosophy project. In short the orientation, navigation of

Sources (written)

<https://stichtingfontys.sharepoint.com/:p:/s/DeadPhilosophersBrainstormtoSolveEverything/EYp5TLniV-JBh0TuYJjrNVEB3fFbbHKggcdtHU1kDLuujQ?e=W0lojR>

<https://www.sciencedirect.com/science/article/abs/pii/S0747563216308974>

<https://link.springer.com/article/10.1007/s40685-018-0069-z>

<https://harvardtechnologyreview.com/2023/05/21/homo-informaticus-the-evolving-relationship-of-information-and-the-human-species/>

https://philosophynow.org/issues/141/Homo_informaticus

Sources (video)

<https://youtu.be/aGLEZ8pjsaA?si=6itpaZajO0p2wjY9>

<https://youtu.be/aGLEZ8pjsaA?si=AtuyLEFWmEAeiTyv>

<https://youtu.be/7JkPWHr7sTY?si=fD3UIPsN5h3aw-y2>

<https://youtu.be/7JkPWHr7sTY?si=2JWpSqWA3m8WWI38>

https://youtu.be/Le122vas9aM?si=x_4RQoQpMR19Zyda

https://youtu.be/IVgAc_oJ6DY?si=bx bFITAeWN0TWf bP

This proposal pertains to a systematic yet creative and open ended exploration and development of experiment(s) in the field of interfacing of information processing for (virtual) human(s) – (virtual) human(s) interaction.

Use case 'sensitivity'. How important is the output of the transformation?

DPBTSE

Journalism 21st century.

Education

Museum

Relevant potential trends: disappearing of the internet. Disappearing of screen interactions.

Development and design integrated.

