

# 14<sup>th</sup> International Workshop on **DESIGN THEORY**

Special Interest Group  
of the Design Society

## 25<sup>th</sup> – 26<sup>th</sup> January 2021

Aalto University School of  
Business  
Aarhus BSS

ACPR

AIRBUS

Ariel University

Bocconi University Milan

Brigham Young University

Carnegie Mellon University

CayaK Innov

CEA

CentraleSupélec

CESI

CNAM

Dassault Systèmes

Dauphine Université

Delft University of Technology

Ecole des Ponts

Ecole Polytechnique

ENSA - Paris La Villette

ESC Rennes School of Business

Fraunhofer Institute for Integrated Circuits  
IIS  
Graduate School of Architecture Nantes

Grenoble Ecole de Management

Henkel KGaA

i3-CRG

IKBM Spri

IKOS Consulting

INRAE

INSERM

Jagiellonian University

Johannes Kepler University Linz

Karlstad University

Kitami Institute of Technology

Linköping University

LIU

Loughborough University

Lund University

MAACC

Maalardalen University

MHCS

MINES ParisTech

Nottingham University Business School

Open University

ORT Braude College

Panthéon-Sorbonne

Paris-Saclay University

Politecnico di Bari

Politecnico di Milano

Politecnico di Torino

RMIT

SNCF

Tel Aviv University

Telecom ParisTech

TU Darmstadt

TU Delft

Ulm University

Umrk

UNCC

Université Bourgogne Franche-Comté

Université de Lorraine

Université de Montréal

Università degli studi di Modena e Reggio Emilia

Université Paris Descartes

Université Paris-Dauphine

University "G. d'Annunzio" of Chieti-Pescara

University Bourgogne Franche-Comté

University College London

University of Bath

University of Leicester

University of Liechtenstein

University of Lisbon (FA/ULisboa)

University of Liverpool

University of Orleans

University of Twente

University of Zagreb FSB

USTO Oran

Worcester Polytechnic Institute

World Business Council for Sustainable

Development

York University

ZEBRA



Organized by the **Chair of Design Theory and Methods for Innovation** | CGS – I3 – MINES ParisTech – PSL University

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## Workshops Guidelines

### To join the platform(s)

You will find all conference connection information on:

**<https://designtheory.sciencesconf.org/>**

Be careful: **you need to be logged in to access information on sessions virtual rooms, program and kumospace.**

To join the Design Theory Workshop sessions please click here

**<https://designtheory.sciencesconf.org/resource/page/id/4>**

If you cannot reach this page, it means that you are not logged in. Please proceed.

To join kumospace for breaks and chat in small groups, please click here:

**<https://www.kumospace.com/design-theory-2021>**

To reach this page, you need to first create an account here: <https://www.kumospace.com/>

## Recommendations for on-line participation

### **Software**

- Zoom will be used for the parallel sessions and plenary sessions. Please make sure you have installed Zoom. You can install the free application or web browser plugin. The plugin does not need any admin rights on your computer.

### **Equipment**

- Comfortable and good quality headset and microphone. This eliminates audio feedback, distracting noises.
- Camera either built-in to your computer or an external webcam that is able to be placed to give a good view of you.

### **Environment**

- Put your mobile on silent during the session
- Mute sounds on your PC (e.g. incoming mail)
- Please make sure your full name is used on your Zoom account, with also your institution name
- When not speaking, please mute your mic

### **Session**

- Connect to Zoom at least 10 minutes in advance. A waiting list will be active, you will be accepted quickly if your information is visible
- Do not hesitate to ask questions in the chat or to make comments. The chair will then

### **Breaks**

- We have configured a place for breaks to chat in small group.  
If you want to join us during the breaks please create an account here <https://www.kumospace.com/>  
Then please click on this link: <https://www.kumospace.com/design-theory-2021>  
If you use KUMOSPACE you need to turn off your microphone in ZOOM.

Monday, January 25<sup>th</sup>

Zoom link for the whole day



<https://zoom.us/j/98133547363?pwd=Y0R5NWlqek9nSk5jbXJlOVpqcWU9OU90UT09>

11:45: Opening talk by the SIG Chairs

## Plenary Session: digitalization and design theory

Chair: Armand Hatchuel / Chat moderator: Raphaëlle Barbier

12:00-12:45	"Digital Transformation in Complex Systems – Implications and Avenues for Further Research."	Nicolette LAKEMOND, Gunnar HOLMBERG <b>(Linköping University)</b>
12:45-13:30	Design of and with sensor integrating machine elements – What are the design challenges in next generation technical systems	Eckhard KIRCHNER, Gunnar VORWERK- HANDING <b>(TU Darmstadt)</b>

  **13:30 – 14:00 break**  

## Plenary Session: design theory in organization

Chair: Eswaran Subrahmanian / Chat moderator: Quentin Plantec

14:00-14:45	Rational Heuristics for Hypothesis Generation in Design Problems	Anna Grandori <b>(Bocconi University)</b>
14:45-15:30	Mobilizing experts in collective inventive rationality in crisis management: a creative and activating "war room" in the face of Covid19	Design and Logistics Research Team on ESP (electric syringe pump)- Covid19 <b>(MINES ParisTech)</b>

  **15:30 – 16:00 break**  

Monday, January 25<sup>th</sup>


Zoom link for the whole day

<https://zoom.us/j/98133547363?pwd=Y0R5NWlqek9nSk5jbXJlOVpqcWU9OU90UT09>

## Plenary Session: Design tools and design theory

Chair: Ehud Kroll / Chat moderator: Honorine Harlé

16:00-16:45	What is Knowledge in Industry 4.0?	Sharif ULLAH (Kitami Institute of Technology)
16:45-17:30	What is Generative in Generative Design Tools? Uncovering Topological Generativity with a C-K model of evolutionary algorithms.	Maxime THOMAS (MINES ParisTech)

 **17:30 – 18:00: break** 

## Plenary Session: Design theory in other societies and SIGs

Chair: Yoram Reich / Chat moderator: Caroline Jobin

18:00-18:45	Main threads of information systems design research or Engaging with practitioners through design research	Matti ROSSI (AALTO, past president of the Association of Information Systems)
18:45-19:30	Exploring Sketching Theory(s)	Bryan HOWELL (Brigham Young University) Jan Willem HOFTIJZER (Delft University of Technology) Mauricio NOVOA (Western Sydney University)

Tuesday, January 26<sup>th</sup>

Parallel session 1





Zoom link: <https://zoom.us/j/93706343201?pwd=cUNud0RsYVMYK2svaU5sRmV0eHpzUT09>

**DESIGN THEORY AND INDUSTRIAL DESIGN, ART AND PHILOSOPHY**

*Chair: Chris McMahon / Chat moderator: Agathe Gilain*

12:30-15:45

- 12:30-13:00. *Design Archaeology for Design Theorizing*. Leona Chandra Kruse (**University of Liechtenstein**)
- 13:00-13:30. *AI and the Horizon of Design*. Jesse Benjamin. (**University of Twente**)
- 13:30-14:00. *Generativity in Design Theory - Why 'New Things' Do Exist and Generativity in Fixed Sets is >0*. Andreas Makoto Hein (**CentraleSupélec**)

  **14:00 – 14:15 break**  

- 14:15-14:45. *Transcending Engineering Practice – NOR Logic on the Path from TransistorTechnology to Universal Indeterminacy*. Albrecht Fritzsche (**Ulm University**)
- 14:45-15:15. *The role of theory for research through design*. Mithra Zahedi, Virginie Tessier (**Université de Montréal**)
- 15:15-15:45. *Transducing the power in the flow of collective design*. Eswaran Subrahmanian (**CMU**), Anne-Françoise Schmid (**Chaire TMCI**), Ira Monarch, Muriel Mambrini (**INRAE**)

## Parallel session 2





Zoom link: <https://zoom.us/j/94366852804?pwd=RXdRNiILSTRJWWpRNWIHcVNaK2hYUT09>

### DESIGN THEORY AND INNOVATION MANAGEMENT

Chair: Pascal Le Masson / Chat moderator: Louise Taupin

12:30-15:45

- 12:30-13:00. *The nature of entrepreneurship: A design-based approach*. Ken Starkey. (**Nottingham University Business School**)
- 13:00-13:30. *Rethinking rules and social practices. The design of urban spaces in the post-Covid-19 lockdown*. Rosaria Maria Stufano Melone (**Politecnico di Bari**) Stefano Borgo (**CNR ISTC-LOA Trento**)
- 13:30-14:00. *The effect of immersive communication medium on design crits - implications for design theory*. Sopher Hadas (**Arial University**), John Gero (**UNCC and GMU**)

  **14:00 – 14:15 break**  

- 14:15-14:45. *Experiential Lessons from the Distance Redesign of a Socio-Political Scheme: The European Green Deal Transformative Case*. Patrick Corsi (**IKBM**) Jacques de Gerlache (**GreenFacts & Institut Paul Lambin - Haute École Léonard de Vinci**)
- 14:45-15:15. *The interference of the law in the User Experience design: toward new restrictions?* Jonathan Keller (**Telecom ParisTech**)
- 15:15-15:45. *Designing new rules in factory: a CK/topos model of an industrial creation heritage*. Honorine Harlé, Pascal Le Masson, Benoit Weil (**MINES ParisTech**)

### Parallel session 3





Zoom link: <https://zoom.us/j/97001941457?pwd=c3kvNG4xU0NDMEpKbERSemJyWFVMQT09>

## DESIGN THEORY AND THE DESIGN OF COLLECTIVE ACTION

Chair: Marta Gasparin / Chat moderator: Estelle Remondeau

12:30-15:45

- 12:30-13:00. *Vista Alegre, Traditional culture, contemporary uses.* Rita Filipe (**CIAUD - architecture, urbanism and design research centre**)
- 13:00-13:30. « *Out of the dusty labs* ». *Really? Ge, bell labs and the myth of isolated research.* Sylvain Lenfle (**CNAM, CRG**)
- 13:30-14:00. *The production of law, what kind of design regime and what consequences?* Iris Champagne (**Dauphine Université**)

  **14:00 – 14:15 break**  

- 14:15-14:45. *Expanding innovation fields through triple layer expert conversations: an experiment on amyotrophic lateral sclerosis.* Albert David (**Dauphine Université**), Ségolène Ayme (**Institut du Cerveau et de la Moëlle Epinière**), Céline Mounier (**Institut Charles Cros**), Dominique Lafon (**Cayak-Innov**)
- 14:45-15:15. *Transforming data into added-value information: the design of scientific measurement models through the lens of design theory.* Raphaëlle Barbier, Pascal Le Masson, Benoit Weil (**MINES ParisTech**).
- 15:15-15:45. *Designing Digital Ecosystems During the Pandemic.* Marta Gasparin, William Green, Martin Quinn (**University of Leicester**) Murod Ganiyev (**Czech University of Life Sciences Prague (CZU)**)

## Parallel session 4





Zoom link: <https://zoom.us/j/98780557007?pwd=aFZseFZlbWJ4bFdpaHpOK2hMSINTdz09>

### DESIGN THEORY AND DESIGN METHODS

Chair: Sophie Hooge / Chat moderator: Chipten Valibhay

12:30-15:45

- 12:30-13:00. *CK-theory and the challenges of Design To Order*. Frido Smulders, Ties Van Bruinessen (**Delft University of Technology**)
- 13:00-13:30. *Actionability and multiple perspectives when dealing with the quantum of tensions and paradoxes in complex systems*. Gunnar Holmberg, Nicolette Lakemond (**Linköping University**)
- 13:30-14:00. *Design for Additive Manufacturing knowledge - Towards a holistic approach*. Obi Martins, Patrick Pradel, Matt Sinclair. (**School of Design and Creative Arts, Loughborough University**)

  **14:00 – 14:15 break**  

- 14:15-14:45. *Engineering design ethics is an epistemological problem*. Rafaela Hillerbrand, Claudia Eckert, Martin Spacey, Michael Poznic (**The Open University**)
- 14:45-15:15. *Towards a Data-Driven Theory of Systems Engineering*. Udo Kannengiesser (**Johannes Kepler University Linz**), John S Gero (**UNCC and GMU**)
- 15:15-15:45. *The logics of Double Proof in Proof of Concept - A design theory-based model of experimentation in the unknown*. Caroline Jobin, Sophie Hooge, Pascal Le Masson (**MINES ParisTech**).



## Parallel session 5

Zoom link: <https://zoom.us/j/97411152244?pwd=VVdZY0lly0pLcndreGxzL1ZKQU5RUT09>

12:30-15:45

### DESIGN THEORY AND COGNITION

*Chair: Benoit Weil / Chat moderator: Alix Deval*

- 12:30-13:00. *What Could Design Neurocognition Tell Us About Design Theory?* Julie Milovanovic (**ENSA Nantes**) Mo Hu, Tripp Shealy (**Virgiana Tech**), John Gero (**UNCC and GMU**)
- 13:00-13:30. *Improving students' capacity to generate new concepts and design new products/processes; a new chemical engineering training using a c-k approach.* Olivier Potier (**Université de Lorraine**)
- 13:30-14:00. *Uncovering Cognitive Schemas and Cognitive Scripts in corporate entrepreneurship initiatives.* Dirk Schneckenberg (**Rennes School of Business**), Miriam Roessler, Vivek Velamuri (**HHL Leipzig Graduate School of Management**)

  **14:00 – 14:15 break**  

- 14:15-14:45. *Meaningful Information*, Yvonne Ericksson (**Maalardalen University**)
- 14:45-15:15. *Leading in the unknown: modelling and experimenting a defixating leader overcoming heterogenous fixations.* Justine Boudier, Anaelle Camarda (**MINES ParisTech**), Mathieu Cassotti (**Paris Descartes**), Pascal Le Masson, Benoit Weil (**MINES ParisTech**)
- 15:15-15:45. *A splitting card game to open innovative futures. Reinventing the strategic foresight morphological analysis method by C-K theory.* Christophe Abrassart (**Université de Montréal**)

  **15:45 – 16:15 Break**  

Tuesday, January 26<sup>th</sup>

Zoom link

<https://zoom.us/j/97105097521?pwd=L0lxYnV4QzNKb2JLOWZWmHBDN2dCZz09>

## Plenary Session: Design theory and social networks

Chair: Pascal Le Masson / Chat moderator: Justine Boudier

16:15-17:00	Design theory beyond generativity	Eswaran SUBRAHMANIAN <b>(CMU)</b> Yoram REICH <b>(Tel Aviv University)</b> Chris McMahon <b>(University of Bristol)</b>
17:00-17:45	A computational approach for using social networking platforms to support creative idea generation	Ji HAN <b>(University of Liverpool)</b>

**Chair: Eswaran Subrahmanian**

17:45	Closing and Future Program
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