



7th International Workshop on
DESIGN THEORY

Special Interest Group
of the Design Society

27th - 28th January 2014
Mines ParisTech



Organized by the [Chair of Design Theory and Methods for Innovation](#) | CGS – MINES ParisTech

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7 th SIG Design Theory Workshop MINES ParisTech	
Monday January 27 th	Tuesday January 28 th
<p><i>Chaired by Pascal Le Masson</i></p> <p>8:30-9:00: Welcome</p> <p>9:00-9:15: Introduction: DT SIG; recent work and objectives of the current workshop</p> <p>9:15-9:30 : Design theory for R&D with NGOs: the case of agrifood innovation for nutritional autonomy, Adeline Lescanne (Nutriset)</p> <p>DESIGN THEORY AND BIG SCIENCE PROJECTS</p> <ul style="list-style-type: none"> 9:30-10:15: Design theory and epistemic instruments, Armand Hatchuel (Mines ParisTech) <p>Coffee Break</p> <ul style="list-style-type: none"> 10:30-11:15: The road to a generic hardware substrate for neurosynaptic computation: building an engineered system inspired by the brain, Ben Shaw (IBM Research) 11:15-12:00: Design of a space science mission - The study case of Herschel space observatory, Vincent Bontems, Vincent Minier (CEA) 	<p>9:00- 11:00 PARALLEL SESSIONS</p> <ul style="list-style-type: none"> Session 1: Design theory and science (Introduction by Eswaran Subrahmanian, report by Juliette Brun and Kenza El Qaoumi) Session 2: Design theory (Introduction Yoram Reich, report by Benjamin Cabanes and Kevin Levillain) Session 3 : Design methods (Introduction by Thomas Gillier, report by Laura Le Du and Fabien Jean) Session 4 : Design and identity of objects (Introduction by Annie Gentès, report by Louis-Etienne Dubois and Milena Chen) <p>Coffee Break</p>
	<p><i>Chaired by Ehud Kroll</i></p> <ul style="list-style-type: none"> 11:15-12:00 Workshops reports
<p><i>Chaired by Armand Hatchuel</i></p> <p>DESIGN THEORY AND MANAGEMENT MODELS</p> <ul style="list-style-type: none"> 13:00-13:30: Design principles in economics and management, Carliss Baldwin (Harvard Business School) 13:30-14:00: Developing design methodology to enable open innovation collaboration, Susanne Ollila, Anna Yström (Chalmers) , Marine Agogué (Mines ParisTech) <p>SPECIAL SESSION: DESIGN THEORY AND DESIGN SCIENCE</p> <ul style="list-style-type: none"> 14:00-14:45: The issue of design science in design society, John Gero, (GMU, UNCC) 14:45-15:30: Design Theory and Design Science, Yoram Reich (Tel Aviv University), Eswaran Subrahmanian (CMU) <p>Coffee Break</p> <ul style="list-style-type: none"> 15:45-16:15: DISCUSSION 16:15-18:00 WORKSHOPS 	<p><i>Chaired by Eswaran Subrahmanian</i></p> <p>DESIGN THEORY AND IDEA GENERATION</p> <ul style="list-style-type: none"> 13:30-14:00: Formation and Transformation of Ideas, Barbara Tversky (Columbia University) 14:00-14:30: Modeling biological inspiration for innovative design, Camilla Freitas Salgueiredo (Renault) <p>Coffee break</p> <p>DESIGN THEORY AND MODELS OF COLLABORATION</p> <ul style="list-style-type: none"> 14:45-15:15 Modeling the Emergence of Conceptual Blind Spots in Multi-Team Designing, Russell Thomas, John Gero (GMU, UNCC) 15:15-15:45 Toward a theory for managing creative industrial CAD tools. Dealing with mass singularity and the design of conceptual models, Pierre-Antoine Arrighi, Benoit Weil, Pascal Le Masson (Mines ParisTech) <p>OPEN DISCUSSION</p> <ul style="list-style-type: none"> 16:00-17:30 Future work and SIG orientations

Parallel Sessions– Tuesday January 28th

WORKSHOP 1: Design theory and Science (20mn each presentation)

Chaired by Eswaran Subrahmanian, reported by Juliette Brun and Kenza El Qaoumi

- **Psychology's New Design Science**, Susan Imholz (Pepperdine University)
- **Is the C-K theory a cognitive process model?** Joan Camps (Universitat Politècnica de Catalunya)
- **Design theory to understand complex biologic conception technologies**, Alline de Paula Reis (AgroParisTech)
- **Modeling engineering interfaces in collaborative activities: a transactional model**, Bertrand Nicquevert (CERN), Jean-François Boujut (G-SCOP)
- **Design as change - from teleology to guided evolution?**, Hans Andersson (Linköping University), Per Aman (Linköping University)

WORKSHOP 2: New Advances in Design theory (20mn each presentation)

Chaired by Yoram Reich, reported by Benjamin Cabanes and Kevin Levillain

- **A study of the design of generic technology with a matroid model in C-K theory**, Pascal Le Masson, Benoit Weil, Olga Kokshagina (Mines ParisTech)
- **Steepest-first exploration with learning-based path evaluation: uncovering the design strategy of parameter analysis with C–K theory**, Ehud Kroll (University of Technion), Pascal Le Masson (Mines ParisTech), Benoit Weil (Mines ParisTech)
- **Exploring Abduction in Design**, Lauri Koskela (University of Salford), Ehud Kroll (Technion)
- **A formal framework of design as intentional change of ontology**, Lex Hendriks (University of Amsterdam)
- **Machine learning and design**, Akin Kazakci (Mines ParisTech)

WORKSHOP 3: Design theory and design methods (20mn each presentation)

Chaired by Thomas Gillier, reported by Laura Le Du and Fabien Jean

- **Teaching design theory to entrepreneurs : an effectual approach of design**, Marine Agogué (Mines ParisTech), Karen Middleton Williams (Chalmers), Mats Lundqvist (Chalmers)
- **Design teams' elaboration of breakthrough concepts**, Thomas Gillier (GEM), Gerald Piat (EDF), Akin Kazakci (Mines ParisTech)
- **Lean Product Development and Design Theories. Questions and discussions**, Eric Blanco (G-SCOP)
- **Introducing a Critical Maturation Phase Within Industrial DKCP Processes** : Yvon Bellec (TAKT), Patrick Corsi (IKBM), Dominique Lafon (ORION Consulting)
- **Supporting Participatory Design of Agricultural Processing Machineries in Benin With Scenarios**, Thierry Godjo (University of Abomey Calavi)

WORKSHOP 4: Design theory and identity of object (20mn each presentation)

Chaired by Annie Gentès, reported by Louis-Etienne Dubois and Milena Chen

- **Biases, design fixation and inhibitory control in the human brain**, Mathieu Cassotti (Université Paris Sorbonne), Marine Agogué (Mines ParisTech), Anaëlle Camarda (Université Paris Sorbonne)
- **Reception as design of the self : stylizing objects versus narrative objects**, Christophe Abrassart (Université de Montréal)
- **Metaphors and design: hybrid poetical productions**, Annie Gentes (Telecom ParisTech)
- **Design, Sciences and atypical organizations: the case of the “residence” Design & Sciences in Grenoble**, Camille Jutant (ENSCI – Les Ateliers)
- **Design and Ludic: for a conceptive definition of ludicity**, Cédric Mivielle (Telecom Paristech)

Workshops – Monday January 27th

WORKSHOP 1: Design thinking and design theory, led by Dirk Schneckenberg (ESC Rennes School of Business), Thomas Gillier (Grenoble Ecole de Management)

This workshop proposes a group reflection on the nexus between these design thinking and design theory topics. We present four perspectives for the current understanding of design thinking, and then run an interactive session to let participants reflect how design theory connects and could help enlighten these various design thinking perspectives.

WORKSHOP 2: Design theory in practice, led by Dominique Laousse (SNCF), Akin Kazakci (Mines ParisTech)

This workshop will focus on the use of design theories in organizations. Beyond traditional creativity sessions, design theories provide guidance to structure in organizing the innovation process and mobilize actors within the organization. In this workshop, first, the participants will be guided through the steps of a KCP process inspired by a real-life case in transport industry. Then, a free discussion session will be conducted about the place and the role of design theories in organizations.

WORKSHOP 3: Design, art and symbolic enigmas, led by Annie Gentes and Max Mollon (Télécom ParisTech)

In societies with high conceptive capacity, objects and techniques have multiple identities. This workshop focuses on strange objects that defy our interpretive skills. Conceived by artists, scientists, or designers, these strange objects unsettle our expectations in terms of use, aesthetics, or even meaning making. In this workshop we will explore how these objects challenge design theories.