cadi

What exactly is CADI?

Nowadays all higher education design institutions seem to be concerned with the same central question: which skills and practices are resorted to in training future designers, on the one hand, and what type of knowledge results from this type of transmission, on the other hand? This question is the bedrock for the policy of research in design advocated by l'École de design Nantes Atlantique: a pragmatic approach resolutely rooted in a cultural, scientific and economical context. "CADI", the research journal published by l'École de design Nantes Atlantique, is both a space to present the reflections and actual knowledge currently produced within our institution, and a means to bear witness to the diversity and quality of the scientific contributions required for design projects to come to life.

With high expectations as regards content and designed in a responsible manner, CADI intends to explore two significant themes per year by giving a voice to both in-house contributors and personalities from outside.
This bi-annual publication will be spiced up once a year by a special issue gathering testimonies of experts who supervised some of our fifth-year students' final projects. This initiative will enable the solicited advisors to express their views on their own field of expertise and on other contemporary issues through design projects.
Since nowadays there are no purely local design concerns, we thought up CADI as an entirely bilingual periodical (French and English) with a fully intended international dimension.

The first issue revolves around a notion and a term: "Experience design". More widespread in North America and derived from information-technology-related practices, this term echoes several grounding philosophical notions. It compels us to question the very nature of experience understood as the object of a design process. And this is precisely what David Bihanic does in a text called "On the Reality of Experience", in which he endeavors to define experience as a questioning of projected reality and its actualization through sensations.
Along the same line, in his article Yann Le Guennec depicts designers in a new light by explaining how they could assume a role of facilitators affording players a new way of becoming involved in complex systems, thus moving away from the view of designers as all-powerful demiurges. He calls this "metadesign".
To conclude, we conducted an interview with Régine Charvet-Pello, Managing Director of the RCP design agency, dealing with the elaboration and implementation of a design methodology rooted in the quality of sensory experience.

We hope that you will enjoy reading this first issue as much as we enjoyed conceiving it. Should you have any question or comment, please feel free to let us know.
Your observations are of great interest to us.

Enjoy your reading!

F. Degouzon & J. Le Bœuf

ON THE REALITY OF EXPERIENCE

David Bihanic

"All we see or seem is but a dream." [1]

Reaching beyond the concept of mere simulation illusorily and "projectively" correlated to the real, experience design would hence manage to generate new spaces dedicated to conception. Calling up multiple sensations it would define a "global" formalization implying a real involvement of the "active" subject (thus promoting a "holistic experience"). Thanks to the "act of sensing" it would bring other scopes of value and meaning into play, thus shifting all interactions and exchanges (usually devoted to communication) within a process aiming at appropriating and performing experience. The latter would then provide "(inter)active" subjects with clues allowing them to acknowledge themselves. By confronting them to "evenementiality" [2], experience would involve subjects into a process of self-identification in their relationship to their environment. Acting on an "introjective" [3] level (as a fantasized or dreamed reality), experience would thus be faced with the reality of the event. It would then pave a way from *sensing* to *sense*, through the identity of the subject (while furthering the constitution of this identity as well). Thus, by creating new experiences, experience design would manage to give life to a new reality where elements that once used to belong to the inside and the outside (as spaces and places where reality occurs) would be intertwined. By leading to an occurrence of the event and correlatively to the "realization" of the self, experience design would then underline the necessity of a link between experience and subjectivity, between event and meaning.

[1] Line from *A Dream within a Dream*, poem written by Edgar Allan Poe.
[2] In favor of an objective reality of the event. We are here referring to Bill Readings's definition after Jean-François Lyotard's: "The fact or case that something happens after which nothing will be the same again." Readings, Bill. *Introducing Lyotard. Art and Politics*. New York: Routledge. 1991. xxxi.
[3] From the term "introjection" – first coined by psychoanalyst Sándor Ferenczi in his widely known article called "Transference and Introjection" – which implies a conception of the *ego* as a representation of the *inside* and the *outside* (in favor of an ideal of the *ego*).
* See Ferenczi, Sándor. "Introjection and Transference" in *Contributions to Psychoanalysis*. Trans. Ernest Jones. Boston: Richard G. Badger, 1916. (Original work published 1909).

THE DREAMED LIFE

The realities "targeted" by experience design would go as far as reshaping the conscience perceiving and picturing the world. Doted with new forms of intentionality (in the phenomenological sense), this conscience would then discover moving, multiple and infinite spaces *distracting* "us" from the real without diverting us from it in the process. Not hinting at a form severed from "the act of existing", conscience (grasped within experience) would then relate to the discovery of a new imaginary conception of the real. Experience design would set up and "stage" the primary forms of experience (those linking perception to imagination), thus promoting the emergence of "activable" realities. By making the real into the place of experience by essence, this discipline would bear witness to a utopian will aiming at changing the world by changing life itself: "[…] a utopia necessary to live the present with a view to reaching beyond it" [4]. Thus from experience arises a reality taking the "transfigural" shape of a dream, of an "inhabited dream" out of which new organizations of the "experiential" meaning would emerge, thus paving the way to new functions of the real (likely to transform it). We oppose to the uselessness of sensations the rise of the power of "effective reality" depicted by Olivier Long as an "evental power immanent to the real (dealing with the virtual)" [5]. This being so, many a question arise from the tension between the uncertainty inherent in the experience [6] of dreams – dreams as a process where the possible is laid out and put into order – and the conditions required for them to become reality thanks to design: how could the experience of dreams (understood as the ideal projection of *future* events) reach the expression of reality itself? How can this reality of experience (which we claim) affect us as durably as the real does?

[4] Riot-Sarce, Michèle. *Le réel de l'utopie, essai sur la politique au XIXᵉ siècle*. Paris: Albin Michel, 1998 (Foreword)
[5] See Long, Olivier. "L'intelligence artificielle: une idiotie?" *Figures de l'Art*, n°6. 1 Jan 2002.
[6] Because it occurs on an inner and live level.

To answer this question we would need to prove that dreams are not thoughts nor objects opposed to experience nor means to escape reality, but that they formally imply (pre)visions of the world (likely truths) merely formulating hypotheses, suppositions and other "calculations" of premonitions. This way dreams could actually be grasped by reformulating experience as "experiencing" [7]: experience would then become a set of variables presupposing a series of several results which can be efficient in the long run. The reality of experience itself would not come from the experience of "something" at all but from a "meta-experience" (a kind of experience of experience [8]) incorporating new environments, new contexts of exchange and new kinds of relationships with objects now doted with intelligence. [9]

[7] "Experiencing" is a process undergoing continuous self-actualization.
[8] See Mayer, John D. and Gaschke, Yvonne N. "The Experience and Meta-experience of Mood." *Journal of Personality and Social Psychology*. 55. 1 (1998). 102-111.
[9] This refers to the generalization of telecommunication networks and to the increasing production of connected mobile terminals contributing to the emergence of a sort of ubiquitous presence. Those technological items are "able to feel and act upon their environment (be it a physical space, a machine, an assembly line or even the human body), and to connect with each other in a network", excerpt from FING. 2005. ProspecTIC 2010 / 1.6 – Robots. 16 Jul 2007. <http://www.fing..org/jsp/fiche actualite.jsp?CODE=1127826471870&LANGUE=0> (Translation proposed by CADI with the author's agreement)

Thus, perceiving the events of reality would no longer "simply" entail a reading of the real but also its update through thinking. It is this very crossing – this "jointed" link between a reality of the experience of dreams and that of a reality of the real seen as a "scenologic" space where what is possible can be laid out and ordered – that Ferdinand Gonseth addresses in his fable telling the anecdote of the "dreamed house" [10]. In this piece of literature Ferdinand Gonseth relates the story of a master builder anxious to construct the house he has always dreamed of. In order to carry out such a project, the workmen entrusted with the construction asked their master to supply them with drawings of the building to be erected as well as a detailed description of the materials to be used. The architect hired for this project made a "simple" drawing devoid of any kind of sophistication or novelty. A few days later, as he came to retrieve the drawing, the master was astonished by the tremendous discrepancy (presented as a true contradiction) between the architect's drawing and the house he had imagined. He replied dismissively that a person devoid of expectations (a dreamless person) would be contented with such a perspective but that, as far as he was concerned, he was totally unable to spoil the *beauty* of his dreams by accrediting a poor reality of the real "projected" in such a fashion. The architect rose against this project which he judged to be a fanciful ambition, that of making a dream into a reality: "Can dreams actually become reality? [cried the architect]" Determined to voice his personal desires, the master eventually came to the conclusion that such a project could never reach completion without one totally reappraising the methods and conception processes beforehand. Therefore they endeavored together to define what line of thought it would be best to follow in order to pass successfully from a dream to its real "transformation". After many attempts the master finally decided to select a solution that – only partly – met his requirements: "This last drawing will do [the master concluded]. I cannot keep waiting for a better one indefinitely."

[10] Gonseth, Ferdinand. *La géométrie et le problème de l'espace*. Book n°1: "La Doctrine préalable." Neuchâtel: Le Griffon. 1945. 56-57.

The moral of this story echoes the praise of a new kind of formalism, of a method as Ferdinand Gonseth would say, always (and probably indefinitely) looking for an ever-unsatisfactory correspondence between "an unfinished thought and a real in the process of being constituted." In other words the aim is not to believe in the successful realization of a process of "concrete" formalization of dreams but rather to express the level of detachment inherent in any project of ideas (whether it refers to an architectural or a design project) confronted with their implementation in real life. Because if dreams (understood as a form of ideal expression) do not produce a new reality *per se*, they might bear witness to their *absent* presence which nevertheless has an impact upon the world, using reality itself as the place where they can "project" their ideal representations. As Victor Hugo stated: "Under the real world lies an ideal world […]".

THE SENSES OF THE SENSING

From this perspective reality stands at the crossroads between two *worlds*: the world of a "lost" present still striving to preserve – through some of its *images* – the analogy (*mimesis*) and that of a possible future already there in a virtual way; in this case the virtual would not merely express the real but would also give it form (reality as *experiencing* the real). Due to this parting (in favor of an effectiveness of experience) the common feeling of experiencing would artificially rid itself from all the logical, rational conditions of the real and rather foster a kind of "vagabondism" or "drifting" of places through space (and a drifting of space through places as well) and a *flight* of time. "Incarnation [would thus become] the outer side of dream."[11] Therefore, the virtual – no longer kept within the boundaries of the potential[12] – would succeed in grasping the real claiming its own field of action: from the imaginary to the real, from the potential to the actual. All would then become likely to *take shape*.

[11] See Bonnefoy, Yves. *Le nuage rouge*. Paris: Gallimard. 1995. 30-39.
[12] Reference to the dialectic of the actual and the potential bringing into conflict what is in the making (the potential) and what actually is (the actual).

Hence the real and the virtual could no longer be considered separately: indeed, the real (first/primary and indomitable) – understood as immediacy of the experience (referring to the founding principles of Bergsonian thought) – would cease to have a monopoly over the feeling of the *lived* experience. Appearing as a seeming contradiction ("we are where we are not"[13]) the virtual would define another reality of the real referring to a situation both "projective" (as in hypothetical future) and imagined (as already *there*) flouting the temporal and factual hinders which keep "us" apart. Should we then contemplate reconsidering the "predominance of the *being-there (dasein)*", as put forward by Gaston Bachelard[14] (highlighting an existential disequilibrium – in the Heideggerian sense of the term – between the *"being" (sein)* and the *"there" (da)*? Would this unstable state of things not depict experience in a phenomenological light in relation with any type of ontological *fixation of* existence? Thus the being of experience is disoriented – "insecure and spiraled"[15], Gaston Bachelard stated – and ceaselessly seeking (in his interactions with the other as well as within himself) to establish himself, to settle in the world (the *being-within-the-world* in relation to the *being-in-the-world*): in a word, to inhabit the world. Thus the conditions required for the virtual to become real are thinned down to the phenomenological amplification (or increase) of the real. The virtual – being doted with the same qualities as the real – succeeds in transforming (to be understood in the etymological sense of the word: *beyond* the real) concrete reality through experience: the virtual is thus superimposed on the real. We only partly agree with Jean Baudrillard's assertion that simulacra (since appearances are real) can serve as substitutes for the original. Indeed, though we accept the visionary and "hyperrealistic"[16] continuation of illusion (born from imagination) we think that (as far as experience design is concerned) some form of the real "subsists" *authentically*. "Grasped anew, reworked by the virtual"[17], Philippe Quéau states, the real is increased (thus paving the way to a *transmutation* of the real and the virtual): "the imaginary would actualize the virtual and make it real"[18] and dreams would take shape so as to become real. Swallowed in the tumult of appearances, the real would manage to conceal itself within the virtual while preserving the reality principle; this partial or at least temporary *concealment* gives free vent to the "transformative powers" of the virtual. As Jean Delay wrote about the image, the whole world *becomes into being* through experience (starting from perception) at the very moment when the real and the imaginary are inextricable.

[13] Jouve, Pierre-Jean. *Lyrique*. Paris: Mercure de France. 1956. 59.
[14] Bachelard, Gaston. *La poétique de l'espace*. Paris: PUF. 2004. 192. (Translation proposed by CADI with the author's agreement)
[15] *Ibidem*
[16] Jean Baudrillard defines the concept of "hyperreality" as "the simulation of something which never really existed".
See Baudrillard, Jean. *Simulacra and Simulation*. Ann Arbor: University of Michigan Press. 1994.
[17] Quéau, Philippe. "Corps intermédiaires: vers une ontologie du virtuel." Metaxu- Philippe Quéau's blog. 29 Sept 2006. Philippe Quéau. 16 June 2007. <http://queau.eu/2006/09/29/corps-intermediaires-vers-une-ontologie-du-virtuel/> (Translation proposed by CADI with the author's agreement).
[18] Nicolas, François. "D'un philosophème singulier dans les écrits de Francis Bayer." 23 Oct 2004. Ircam, 16 June 2007. <http://www.entretemps.asso.fr/Nicolas/Textes/Bayer.htm>. (Translation proposed by CADI with the author's agreement)

Unwilling to dissociate what is true from what is false or to distinguish the real from any type of virtual or artificial reality experience design strives to define several synthesis *apparatuses* unfurling the frame of a "hyperspace [up to now] without atmosphere"[19] within the real world. A new reality, shared and *increased*, delineating a true field of "co-incidence" between the real and the virtual would thus emerge from those sets of devices (from the virtual's availability to the ever-changing nature of the possible). The latter (this reality?) would deeply disrupt the subjectivity of *synthetic*[20] consciousness: all the things surrounding us would be perceived as points "centered" in the world. This detachment of the ego would result in a kind of psycho-sensory distortion bringing to the fore the very act of *sensing*. Complying with this "symbiotic communion" with the outside world depicted by Erwin Straus[21], experience thus allows one to rediscover the alliance between *sensing* and *sensation*. Indeed, those two "constitutive components" of phenomenology, which Henri Maldiney[22] (relevantly) decided to define as antithetic in the field of art, eventually find a space where they can converse freely. This being so we do not make any difference between the existence of actual, sensitive things and their perception. Indeed, objects and sensations are indistinguishable and refer to the very same thing. This said we will echo George Berkeley[23] when he merges *sensing* and *perceiving*: "*Sensing* is perceiving"; sensing is to be understood as a perceptible experience of sensation. Only the perceiving being (that is to say the being constructing perception) would be inclined to attain the things existing in the outside world: the reality of perception would become equivalent to "absolute" reality (now divided into the real and the virtual). Thanks to/through experience (a "transformative" process in itself) we manage to create a *symbiotic relation* with the world: "Sensing [Erwin Straus reveals to us] implies me and the world, me with the world, me in the world."[24] Sensing is "the immediate lived experience of a disruption in one being's relationship to the world"[25]. According to Henri Maldiney "every event has a transformative power. Everyone experiences deep within him/herself a transformation of his/her presence as being in the wold. 'I am sensing as I become (another); and I become as I am sensing.'"[26]

[19] Baudrillard, Jean. op.cit.
[20] Husserl, Edmund. *Analyses Concerning Passive and Active Synthesis: Lectures on Transcendental Logic* (Edmund Husserl Collected Works). Trans. A.J. Steinbock. New York: Springer, 2001.
[21] Straus, Erwin. *Vom Sinn der Sinne, Ein Beitrag zur Grundlegung der Psychologie*. Berlin: Strindberg. 1956. (Translation proposed by CADI with the author's agreement)
[23] See Maldiney, Henri. "La vérité du sentir." *Art Press*. Dec. 1990: 16-23. (Translation proposed by CADI with the author's agreement)
[24] See Berkeley, George. *Principles of Human Knowledge*. Oxford: Oxford University Press. 2006.
[25] Straus, Erwin. cited in Maldiney, art. cit.
[26] Straus Erwin, op. cit.
[27] Maldiney, art. cit

METADESIGN OR HOW EXPERIENCE MUST BREAK FREE FROM THE DESIGNER'S GRIP

Yann Le Guennec

The ultimate invention is that of an issue, the opening of a void right in the midst of the real.[1]
In this article experience design refers to the conception of interaction systems linking players to processes. These players are either individuals or objects; they interact through the activation of processes. Interaction systems – which vary according to the standing point from which you choose to conceive or observe them – constitute the global field of experience. However experience is also related to the players' perception of it and to the perceptive transformations they bring about. After an experience no player is ever in the same state as he/she was before. Be it due to the influence of the duration of the experience, of time passing by. Therefore it is one of the designer's duties to qualify this time and strive to make sense of it.

Usually steered by abstract and positive values which give rise to intentions, the conception of interaction systems aims at bringing to the fore a number of features that prove beneficial to players and to give them concrete expression. Whatever the benefits, only the players themselves are in a position to identify them. The type of benefit sought will largely define a design project's objectives on which, in turn, will depend the methods applied. There is no specific method for conducting a design project. Method is an object of the project, a set of processes to be conceived within the interaction system of experience. Experience as understood here reaches beyond traditional ways of conceiving. Indeed the former brings its own conception tools into the field of things to build. Studying the requirements of defined targets or user-centered design is a way to start addressing this approach. Not only does experience design attempt to conceive systems likely to interact properly with identified users, it also aims at conceiving the conception system itself, within which users become players on the same level as designers. Needless to say, this conception of the conception system can only be elaborated by the group co-directing it and striving to bend it in a specific direction and give it a meaning in keeping with the range of benefits expected to come out of it and to the systems of value shaping them. From then on, one can speak of metaconception and metadesign.

Meta-design refers to the objectives, techniques and processes resorted to in order to create new means of expression and environments allowing people faced with an issue to act like designers.[2]

Where do designers stand within this collective act of metaconception and what part can they play? As designers they could be entrusted with the mission to enable and foster the emergence of a metaconception model. As experts supposedly doted with creative and innovative skills, designers are in the best position to share their qualities through self-effacement so as to let the creativity and intentions of all those involved in the system rise to the surface. When ceasing to be self-centered and focused exclusively on the qualities required by the system's evolution, they allow these very qualities to be shared by all, from player to player, each one spurred by the personal motivation of taking part in the elaboration of a solution likely to meet as many target-user requirements as possible. The need for self-effacement is probably a prerequisite to metadesign processes. The global metadesign process involves the conception of conception tools and provides a framework for the project, the context for the project outline. Though *a priori* non-defined, this process can be initiated by determining the benefits that can be expected by harmonizing the roles of the players. It is first and foremost rooted in the acknowledgment of the human desire for evolution that requires a transformation of one's environment. This desire is far from being specific to designers, and the issue of metadesign is inherent in human nature.

I think the question we must face at this moment in our history is that of our desires and whether or not we want to be responsible for our desires.[3]

This very question underlies the context within which experience could develop. By reflecting upon the object of our desire (what do we desire?) we anticipate the benefits potentially gained and thus the objectives aimed at and the methodological tools required. The type of determination needed will depend on the relationship between the relevance of the objectives and tools and the values of the players. Whether or not one shall further the experience is incumbent on this determination. Not only does the furthering of experience lead to methodological reflection and creativity sharing, it also mobilizes resources likely to call into being the necessary apparatus, and ways of being that might bring thought processes to the fore.
To think is always to follow the witch's flight… This is because one does not think without becoming something else, something that does not think – an animal, a molecule, a particle – and that comes back to thought and revives it. [4]

[1] Lévy, Pierre. "Sur les chemins du virtuel." Université Paris 8. <http://hypermedia.univ-paris8.fr/pierre/virtuel/virt6.htm> (Translation proposed by CADI with the author's agreement)
[2] Fischer, Gerhard. "Meta-Design: Beyond User-Centered and Participatory Design." University of Colorado. <http://l3d.cs.colorado.edu/~gerhard/papers/hci2003-meta-design.pdf>
[3] Maturana, Humberto. "METADESIGN." Instituto de Terapia Cognitiva. <http://www.inteco.cl/articulos/metadesign.htm>
[4] Deleuze, Gilles & Guattari, Félix. *What Is Philosophy*. Trans. Graham Birchill & Hugh Tomlinson. London: Verso. 1994, p.44 cited in Callat, Henri. "L'expérience esthétique dans la philosophie de Gilles Deleuze." Programme européen MCX "Modélisation de la CompleXité." <http://www.mcxapc.org/docs/ateliers/21_doc10.htm>

Screenshot of the Poietic Aggregator elaborated by Yann Le Guennec and Olivier Auber. In this case, the device is used to visualize the activity of the collaborative website overcrowded.anoptique.org
<http://www.poietic-aggregator.com/ap/overcrowded> Date: 11/12/2007

"WHAT IS PERCEIVED FIRST MUST BE CONCEIVED FIRST."

An interview with Régine Charvet-Pello (conducted by David Bihanic)

Régine Charvet-Pello, about twenty years ago you created an agency called RCP Design Global (now specializing in "sensory" design, as we will see later on). You are currently conducting far-reaching and innovative projects in the fields of transportation, public spaces, children-oriented products, luxury items, cosmetics etc. Could you first tell us how the urge or necessity to develop a holistic approach to design – global design – dawned upon you?
In the late nineties Jean-François Bassereau[1] and I realized it had become indispensable to start focusing our attention upon human beings and their position in our modern-day societies instead of concerning ourselves only with products. We conceived global design as a practice dealing with humankind and not only with products. That is why we felt we had to go beyond a mere industrial approach to design. We needed to search for new methods better adapted to user requirements. From there on, we decided to define a "global design" approach.

Let us now focus on SENSOLAB. Could you please sum up the specificities of this project and explain to us in what way it involves sensory design?
Our whole global design approach is centered upon the SENSOLAB project. Our starting point is quite simple: nowadays we must imperatively give a new dimension to products – that goes beyond function and aesthetics – so as to arouse consumer buying intentions. To do so, we chose to steer our approach to design in a new direction and to focus more closely upon the sensations provided by a product; our aim was to conceive a real sensory design concept. Today sense-oriented practices have become very fashionable. However, at the time we had "deeper" expectations rooted in societal concerns rather than in trends or lifestyles. We do not promote "sensory marketing" but a true practice of conception. From then on, our reflection veered in a new direction as we started to seek ways to add value to the products we were going to design. Our aim was to take into account the wide range of expressions and tastes (we went as far as analyzing some types of addictions). When we began voicing our concerns, people thought we were but dreamers. We had to couple our reflection with analyses of practices in sensory metrology, especially applied to the food industry. Moreover we conducted a series of experiments as part of the Laboratory of Product Conception and Innovation of the École Nationale des Arts et Métiers, and in the framework of my professional activities as well. In doing so we realized we needed to work out an inclusive experimental process rooted in applied research that allowed players from other fields to take part in our reflection. Therefore we started to work within institutional think-tanks (such as that of the AFNOR Group dedicated to lifestyle qualities) focusing on subjective quality: that is to say the opposition between actual quality and perceived quality. We entered this ongoing reflection from different standpoints so as to let our imagination soar towards a vision of a certain future. After fifteen years spent publishing numerous works and giving many lectures dealing with this issue, we decided to found an association called I.M.S. (Institute of Sensory Metrology) dedicated to "sensory characterization". Our collaborators were designers, engineers and architects for the most part, people whose duty consisted of conceiving items. This enabled us to study the processes used to characterize matters and products, always taking usages into account. In addition we had also created an association named "Epoch" bringing together researchers (coming from disciplines such as sociology, contemporary ethnology, neurology etc.) – whose concerns were very different from ours – around the role of sensory-oriented reflection in designing products. This experience proved very interesting in that it brought to life new ideas very remote from what we could have predicted or sensed at the beginning. Reaching beyond the field of design, we strived to find ways to enhance sensory interfaces and human/object interfaces (and no longer products only) so as to strike up a fruitful dialogue thanks to sense awareness.

This way, standing at a crossroad between several sciences, you managed to find methods (both conceptual and applied) to "reconcile human beings with themselves (and their senses)" [...]
Exactly. Well, we're just getting started. Our project is but a budding undertaking for the moment. But things seem to be on the right track. Besides, we noticed that globalization and counterfeit items (especially made in China) were provoking a decline in product quality. On the contrary, sensory-aware production is an efficient way to bring to the fore the vital structure of companies elaborating their own products. With this type of process, brands offering a better "perceived quality" can be identified more easily. Such results can only be achieved by deepening our reflection and conceiving products complying with the company's character – a quite human-centered approach to companies – or by accurately defining users (identity, habits and behavior, conditions of use etc.) so as to send them the right sensory signal, the one meeting their needs. We discovered that creating sensory-aware signature products was an efficient tool for competitiveness in that it allowed us to make a difference and outshine products formerly affected by the poor quality of counterfeits. This finding spurred us to give expression to a new approach to competitiveness, that of the "rightly perceived". In other words, what is perceived first must be conceived first. Today, our methods enable us to obtain accurate measurements of the main "indexes" of perception determining exactly how a product is apprehended by users, and we focus upon what is first perceived (the constitutive elements of a product) rather than on the product as a whole.
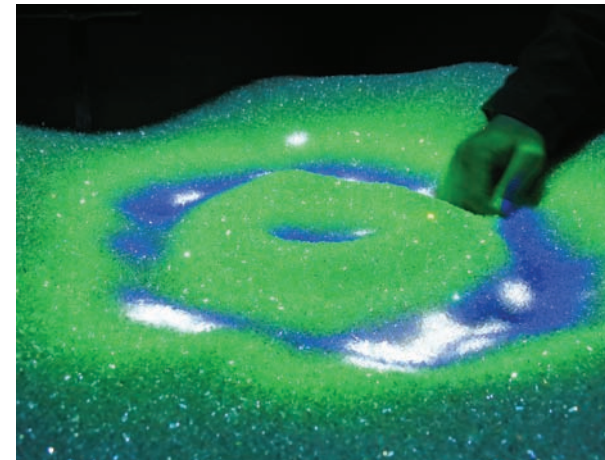
SAND CREATE: an installation designed by Mr Yamamoto, Mr Hasegawa and Mr Hayakawa from the University of Gifu, Japan.
Picture credit: Nicolas Guyon for l'École de design Nantes Atlantique.