

THE VALUE OF DESIGN RESEARCH

MODELING A CULTURAL IMAGINAIRE THROUGH A GENERATIVE INTERMEDIARY SPACE. A CASE STUDY OF COLLABORATION BETWEEN DESIGN, HUMANITIES AND SOCIAL SCIENCES

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APRIL 22-24 2015

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ABSTRACT

This article studies the Nokia Animism research project taking a cultural 'imaginaire' as an explicit and primary ground to generate innovation through the collaboration of design, humanities and social sciences. It addresses the following questions. How collaboration between design, humanities and social sciences can stimulate the co-design of an intermediary space articulating the developed and shared knowledge? In what way an intermediary space can become a generative design space allowing ideas generation, combination, analysis and ultimately knowledge transfer, collaboration and engagement? In what way an intermediary space expands the concept of intermediary object? In what way such an intermediary space addresses one of the most difficult challenges of design research: knowledge management or how to transfer and capitalize on the knowledge developed within research. In what way the design of an intermediary space for the 'imaginaire' of animism through the collaboration between design, humanities and social sciences can expand the knowledge in both content and tools of the involved disciplines? This article then provides a perspective on the practice of co-designing a cultural 'imaginaire' as a generative tool through a comparative study of other design research projects explicitly taking culture as a primary ground. Finally, this article provides a perspective on the learning through the study of 40 Nokia research projects comparing the knowledge transfer performance of projects with and without an intermediary space. This article aims at demonstrating the value of research in design within a corporate environment.

Keywords: design space, intermediary space, collaboration, design research, intermediary object, generative framework, imaginaire, animism

1 INTRODUCTION

Design is culturally situated and as such addresses questions for which design researchers and practitioners consider that various solutions are acceptable making it's output non refutable (Gaver, 2012).

Building on this observation, some design research projects take humanities or social sciences explicitly as a generative material. In this paper I will study the Nokia Animism project demonstrating the value of the collaboration between design, humanities and social sciences through the modeling of an 'imaginaire' in a intermediary space, between the concept space and the artifact space. I will specifically articulate my contribution on the study of the following: 1. The Animism 'imaginaire' as a collaboration ground for research in design with humanities and social sciences to expend the knowledge in both content and tools up to the portfolio and roadmap. 2. The generative value of an intermediary space allows ultimately knowledge transfer, appropriation and engagement. 3. Conclusion on collaboration between design, humanities and social sciences to develop culturally grounded projects.

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2 CASE STUDY

2.1 PROJECT KEY DEVELOPMENT PHASES

I'll articulate here the key development phases of the Nokia Animism research program, as well as the program context elements.

In 2006, Nokia was foreseeing a convergence between internet and telecom as leading towards a potential disruption to its core business, and potential opportunities to explore new strategies. The dramatic increase of embedded sensors, combined with always-on connectivity was seen as leading towards an explosion in data collection and calculation potential, allowing an unprecedented knowledge about user's behaviors, potentially driving a new relationship between Nokia and its users. This potential new relationship was then seen through the metaphor of a living companion. This led to the speculation on Animism, part of Finnish imaginaire, as a potential route. So, the question was to what extent Animism can be a relevant and effective innovation route to address the internet-telecom convergence. I was assigned to set-up a research program and form a multi-disciplinary team. I explicitly chose to include competences from anthropology, semiotics and design. Each phase of the project involved the core team with the listed competences. The key phases were the following.

A background study was conducted to collect knowledge on animism, organically, with contributors not restricted to their knowledge domain. Key knowledge emerged from psychology, anthropology, sociology, semiotics. A desk study of existing and recent products and services embedding animist qualities concluded in revealing a narrow space of anthropomorphic shapes and life cycles from birth to death. An in-house set of interviews of 20 product and service designers, asking specifically for examples of products, services or experiences embedding animist qualities while not providing them with any definition of Animism to rely primarily on their own understanding and projection at the time of the project start. 2 examples clearly expanded the original space filled with anthropomorphism and life cycles: the Citroen 2CV, for its moody engine (behavior variation and misbehavior, character and personality) and the fire-sensor in offices (observing constantly, while staying put). Through desk study, we extracted the following learning. Winnicott, pediatrician, was addressing children's animist vision as a being the manifestation of his concept of transitional object and transitional space, where objects and spaces were an extension of the relationship with the mother (Winnicott, D., 1971). For Freud, psychoanalyst (Freud, S., 1913) and Piaget (Piaget, J.), developmental psychologist, the animist experience of children was a transitional state decreasing towards the age of reason, a way to see the world as an extension of oneself to make sense of it and engage with it. In Animist tribes, animism was seen a transitional state too, but following the opposite movement, increasing towards wise-ness by the understanding of a self as being part of a bigger whole. And more specifically, for Nuri Bird-Davis (Bird-Davis, N., 1999), anthropologist, it was about a relational epistemology. One's identity is based on the relationship with others. A workshop was set to generate keywords expressing an animist experience, which clustered around immanence, to get and perceive, going with the flow, to comfort, shared destiny. An interview of creative professionals recognized for relating to forms of animism in their work. Some insights were collected from a fashion designer about the soul of a cloth, an architect about the genius loci, a Shinto professor about the soul embedded into everything around us and a game designer about the soul of evolving games. The interviews revealed 5 foundation principles being autonomy, emotions, subtlety, simplicity and evolution over time. Up to this phase, all

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activities were defined and driven by the core team, without any form of hierarchy or sequencing between competences.

From this material, the semiotician built a semiotic square as a first framework synthesizing the knowledge. The axis were my soul vs another soul and alive vs inspired. Each of the 4 spaces was qualified by one metaphor. The first set of 4 metaphors was provided by the semiotician and got refined through iterations with the core team. The final 4 metaphors were:

- Living prosthesis, at the cross of organic + my soul
- Pet/plant, at the cross of organic + another soul
- Mini-me, at the cross of anthropomorphic + my soul
- Inhabited, at the cross of anthropomorphic + another soul

While such semiotic square is usually used to help choose a focus, I as a designer acknowledged it as a generative tool. Each of the 4 metaphors were recognized as defining an experience space which would allow to respectively address various needs in the user segments of Nokia. The 4 experience spaces would form a base map. But designers recognized each of the 4 experience spaces of the base map as too broad. So I asked the base map to be divided in 4, through the same semiotic square method, reaching 16, more focused, experience spaces, also qualified by a metaphor for each. The team iterated on the metaphors up to an agreed final set. Each metaphor was then detailed into a design card. Each design card was made of: a short introduction of the experience space and an existing video taken from movie or advertising on one side, and a design guide aggregating qualification of the experience qualities, what the experience requires (sensors)+what it gives (experiences opportunities)+what it allows (use cases). All co-designed within the core team. The 16 experience spaces, with their respective design card were effectively forming one comprehensive space within which each designer from the business units was meant to be empowered to explore experiences inspired by the Animism 'imaginaire'.

A test-workshop was conducted within the core team to crash-test the material in regards of the graspable size of the 16 experience spaces, and their clarity to facilitate idea generation. A group of about 16 designers from business unit, were invited to participate in a workshop all the key project members facilitated. The designers' set was meant to be balanced in the representation of the Nokia product portfolio segments. This representation would allow an evaluation of the mapping of all ideas as per product segment. About 120 ideas were produced within 2 afternoons. The core team went on analyzing the output and clustered the ideas in the form of services and/or experience suites. Each suite was turned into 'an evolving day in a life' scenario. Evolving being understood as the service/experience evolution mirroring the user's behaviors evolution. The clustering of the scenarios helped revealing the foundation service/experience, 'Seed', a 'living address book'. The key experience principles of Seed were defined. The key experience spaces of Seed were defined. The rollout was set to influence the Nokia portfolio.

2.2 THE IMAGINARY AS A COLLABORATION GROUND FOR RESEARCH IN DESIGN WITH HUMANITIES AND SOCIAL SCIENCES TO EXPAND THE KNOWLEDGE IN BOTH CONTENT AND TOOLS UP TO THE PORTFOLIO AND ROADMAP.

By exploring opportunities rising from the internet-telecom convergence explicitly through the 'imaginaire' of Animism, the research program built on establishing a sharable language developed through keywords, foundation principles, metaphors and design cards. This structured knowledge, assembled

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altogether was forming a design space.

Design space is defined here as an intermediary space between the concept space and the artifact space, structuring the knowledge in a generative form (to generate ideation) including conditions and boundaries. This design space is materializing the imaginaire of Animism. The imaginaire is being understood here both as a space in between concept (symbolic) and percept (real, through the artifact) and a link between these spaces (Musso, P, 2014). Further more for Pierre Musso, the imaginaire as a design space is materialized through the combination of an image, a story, a relationship to the body (Musso, P, 2014).

Metaphor is understood here not just as a mere 'novel or poetic linguistic expression where one or more words for a concept are used outside of their normal conversation meaning to express a similar concept' (Lakoff, G, 1993), but rather as a though 'in the way that we conceptualize one domain in the terms of the other' (Lakoff, G, 1993). And therefore rather than being novel, metaphors are extremely common, with thousands of domains being 'mapped' to other domains' (Saffer, D, 2005). This intermediary space is a co-designed collaboration space for design, humanities and social sciences. The aim of this space is to make the knowledge explicit, systemic, and actionable to drive the development of multiple scenarios and strategies by a designer external to the core team who created it.

Intermediary objects have been well studied (Boujut, J.-F. & Blanco, E., 2003, Vinck, D. & Jeantet, A., 1996, Mer, S., Jeantet, A. & Tichkiewitch, S., 1995). In this project, the purpose was to engage designers from business units. The team acknowledged the need for inspirational open-ended objects and found inspiration from cultural probes (Gaver, B., Dunne, T. & Pacenti, E., 1999) to value by analogy the better inspirational potential of an intermediary space over an intermediary object, an artifact. Objects were observed as too limiting the expression of animist qualities through out the first interviews. To build such a space, tools from each discipline could be assembled.

In this research program tools were transformed to address the question; the very nature of Animist experiences, and by the cross-challenge of tool and disciplines. By exploring opportunities explicitly through the 'imaginaire' of Animism, the research program developed experiences in the abstract through a set of 16 experience spaces. In the design space, the research collaboration focused on generating, manipulating, combining, analyzing experiences while eclipsing artifacts. The collaboration between design, social sciences and humanities added or transformed convened tools and methods. I've listed below the main transformations.

The Animism 'imaginaire' wasn't explored as a system though initial iterations with designers from business units before the design space was developed. The experiences generated by the designers before the development of the design space were not forming a comprehensive design space. The semiotic square was transformed by the designer from being a discriminating space where one sub-space is to be chosen, to being a generative tool where each sub-space could be used along side one another or even through combinations. The intermediary space encouraged designers to think through a system, with combinations and inter-dependencies which expanded their production volume by a factor 8 on average. Through the gestalt contrast principles of similarity, closure, proximity, continuation, figure and ground, the 16 experiences spaces were used as a ground to play from and expand the generation of experiences. The language built a coherence, from the metaphors to the wording of the 16 design cards and the experiences suites. The experiences ideas were not meant to be combined. The design space implied the

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clustering in the form of experience/services suites. While reviewing the experience/service suites, the diachronic quality was revealed across by the semiotician. Diachronism being concerned with the way in which something, especially language, has evolved through time.



Figure 1 –16 metaphors framework.

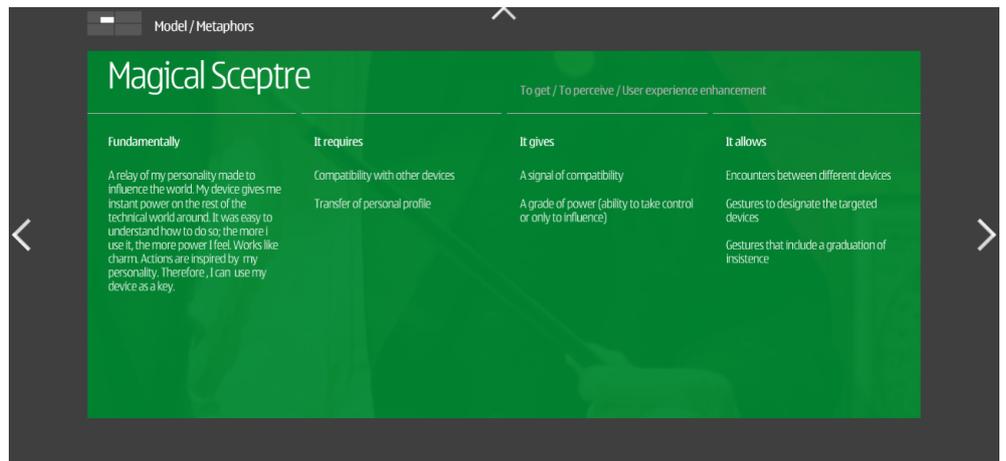


Figure 2 –Design card

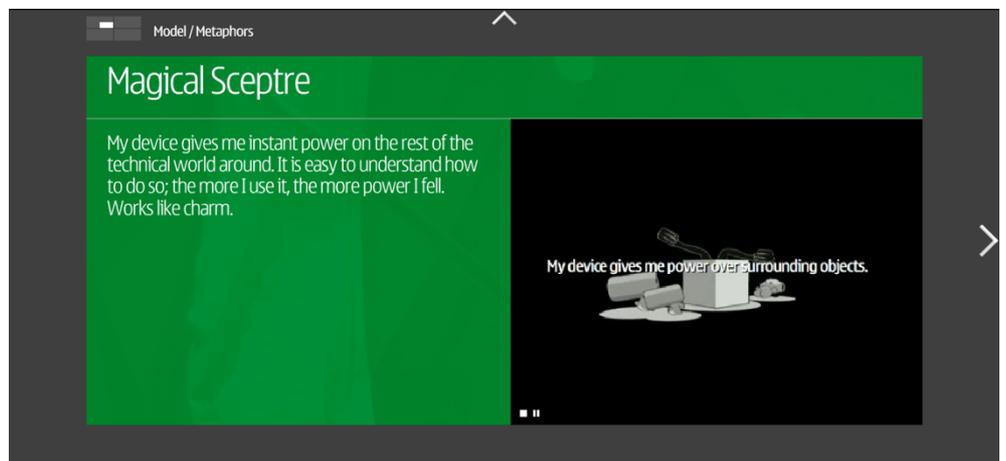


Figure 3 –inspirational video

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Each experience idea was evaluated by design, humanities and social science resources through the design space and from their own perspective through the following questions:

- Does the idea fit the criteria of the design space? To what extent does it imply the idea to be modified? To what extent does it require adaptation of the design space?
- Is this idea positioned in the right space?
- Does positioning this idea in another space generate new ideas?
- Is this idea calling for additional ideas through combination with another space?

Through the design space, the core team could position and evaluate the quality of the experience ideas developed by the invited designer and generate additional experience ideas. As a consequence, the scenario tool itself got transformed from the usual 'a day in life' scenario' toward 'an evolving experience through a day in life and beyond', a diachronic experience. The roadmap was in turn transformed from a traditional feature piling to a developing engagement rather than being a traditional distribution of features. Through the collaboration with humanities and social sciences, Animism developed as a coherent evolving experience system, building on the increase of data collection, addressing the primary research program question.

2.3 THE GENERATIVE VALUE OF AN INTERMEDIARY SPACE ALLOWS ULTIMATELY KNOWLEDGE TRANSFER, APPROPRIATION AND ENGAGEMENT

This Animism research program was run within Nokia Design Insights and Innovation, a unit bridging Nokia Research Center, Nokia corporate strategy, Nokia business units. In this context, research programs were meant to deliver a knowledge in a designed form to be effectively transferred and engaging appropriation from designers within business units.

The generative value of intermediary objects has been observed in previous studies (W. Gaver & Dunne 1999; B. Gaver et al. 1999; W. Gaver et al. 2004; Cruz & Gaudron 2010).

The generative value of the intermediary space appeared through the collaboration between design, humanities and social sciences. It has been key to facilitate the knowledge transfer and the engagement of the designers from business units. The specific quality of an intermediary space over an intermediary object lies in the generative potential of the space to compose within. For instance, the gestalt contrast principles of similarity, closure, proximity, continuation, figure and ground were used to explore within the 16 experiences spaces. The ellipse of the object (Findeli, A. & Coste, A., 2007) has liberated designers and helped them explore experiences building on the animist qualities. But it was not a usual step in their practice.

Providing a generative intermediary space to the designers from the business units appeared counter-intuitive to them. The designerly way of knowing (Cross, N., 1982) builds on an adductive reasoning, commonly presented as learning by doing. Such process have benefits starting with seeing the whole bigger than the sum of the parts (gestalt). Knowledge built through such process is eventually articulated a posteriori, in the form of a portfolio annotation (Bowers, J., 2012).

In 2009, through out an audit I've conducted of 40 Nokia research projects developed between 2004 and 2009, it appeared that projects directly translating concepts into artifacts, without designing the knowledge within an intermediary

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space were achieving poor impact in the industrial portfolio. Direct translation of concepts through artifacts, even with an articulated annotation (Bowers, J., 2012) and independently from artifact knowledge translation qualities, didn't help an effective knowledge transfer in the business units. It appeared that artifacts were evaluated for themselves, as stand alone pieces, rather than through the knowledge meant to be instantiated. As the artifact became dated, the knowledge wasn't reckoned as of any interest.

Defining an intermediary space to collaborate among disciplines appears to be a common practice among design researchers nevertheless. Out of the 40 Nokia research projects audited, 25 were articulating the knowledge in the form of a intermediary design space. While not being explicitly generative, each of these 25 projects providing an intermediary design space could claim impact evidences within the industrial portfolio while the other projects could not.

But in the given organizational constraints, the intermediary design space was meant to be primarily used by designers from the business units, rather than from the core team designing it. Designers from business units didn't experience designing from a culture framed as a system ever before. And they didn't experience the design and usage of generative tools either. Since none of them were engaged in the very process of designing the design space, primarily, due to time constraints, an initial half day induction was required. Past this assimilation/accommodation phase, designers from business units engaged effectively. Less than 3 out of 16 remained uncomfortable and critical with being provided such guidance.

This design space focusing on experiences in the abstract was understood by the designers in the business units as a language engaging effective conversations from and bounce ideas.

The intermediary space encouraged designers to all think through one system, with combinations and inter-dependencies through implicit application of gestalt principles which expanded their production volume by a factor 8 on average.

Animism was integrated as a foundation principle in the later direct/touch UI platform, and by the volume of ideas generated (120+) and the ratio with the volume of registered ideas ((80+), the collaboration between design, humanities and social science through the co-creation of a design space was effective.

3 RELATED WORK

There are many projects worth being analyzed in regards of the qualities and purpose of their intermediary spaces framing a cultural 'imaginaire'. I've chosen here some projects building from the ground of humanities and social sciences.

3.1 THE CANDY VENDING MACHINE

The design of a candy vending machine through the concepts of Nietzsche vs Confucius, Kant vs Romanticism, developed as an experiment through the collaboration of a designer and a philosopher of ethics (Ethics and aesthetics in intelligent product and system design, Philip Ross, 2008) do imply the framing a design space through the collaboration between design and humanities although the 4 philosophical concepts are put in relation to each other, without being explicitly mapped beyond polarity pairs. Each students group had to design a candy vending machine from both Nietzsche and Confucius or Kant and Romanticism.

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Differences: a key difference lies in the fact the exercise consists mainly in raising contrast between concepts while being directly translated into artifacts, rather than defining concepts through out a intermediary generative space as with the 16 animism metaphors allowing the use of all the gestalt principles. In this respect, it is interesting that Philip Ross notices that 'the interpretation of the ethical systems remained superficial while all being incorporated in the designs'.

Similarity: Analyzing the results, Philip Ross questioned 'what would it mean if different people would interact with these products?', questioning the interplay between personal ethics and the artifacts' ethics. Through out the mapping of ideas over the 16 metaphors of animism, appeared the same question of mapping Nokia customer segments through out the space. It was possible thanks to the space sub-division.

3.2 IN THE UNITED MICRO-KINGDOMS

In this project, Anthony Dunne & Fiona Raby, (Speculative everything, Anthony Dunne & Fiona Raby, 2013) introduced a mapping framed through a semiotic square opposing authoritarian to libertarians, and left to right to frame a design space for 4 scenarios, one in each quadrant.

Differences: Very similar to previous case, such a design space is meant to stimulate a debate through contrasts.

4 DISCUSSION

Along the process, the flexibility, openness and lifespan of such generative framework was questioned. In other words, the questions were

- How flexible such a framework is? What level of commitment does it imply?
- How such a framework can be recombined if other concepts are added.

A simple answer is that since the framework is meant to be generative, then, it's very components can be combined with components from other concepts provided they are associated through relevant contrasts principles. If taken from a brand perspective, if the imaginaire is a relevant translation of a brand, there is no significant variation through out the years.

Regarding the lifespan, since such framework is build on a cultural ground, the instantiations can be revisited as long as the design cards remain inspirational rather than prescriptive.

5 CONCLUSION

Through the exploration of the cultural 'imaginaire' of Animism, the collaboration of design with humanities and social sciences led to the transformation of the tools and methods provided by each discipline. Particularly the semiotic square meant to articulate knowledge got transformed into a generative tool allowing original combinations leading to new knowledge and new tool. Through such a tool, designers have been empowered to innovate through meaning change (Hatchuel, A., 2005, Verganti, R. & Norman, D. 2012) and developed their creativity by a factor 8. Sanders stated that "designers in the future will make the tools for non-designers to use to express themselves creatively." (Sanders & Stappers 2008). I claim that the value of such tool, although counter-intuitive at first for designers can stimulate knowledge transfer through engagement in a more systematic and effective contribution. Designing generative frameworks is a effective way to value the design ambition to develop or maintain the worlds' habitability (Findeli, A. & Coste, A., 2007), in a more systematic way. Also such practice presents potential to be explored in regards of debate stimulation, in

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particular when grounded on cultural perspectives where multiple points of view are acceptable. Such kind of framework presents a potential to develop design's impact beyond knowledge instantiation in artifacts.

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