

Framing Values in Design

Marta Gasparin^{*}, William Green

University Of Leicester

*Corresponding author e-mail: mg352@le.ac.uk

Abstract: In this paper, we outline a framework that explains how creating value in a design product takes place in practice, as a result of a negotiation and translation process. Through an ethnographic study, we analyse how the values of an iconic Scandinavian design product emerged and were managed during the product life cycle, translating the values when new actors or new markets were enrolled. More specifically, the paper uses the notion of features in order to capture and express the value process. It suggests that the work of the spokesperson of associating and disassociating features is the key dimensions that determines the emergence of value. It also argues that value as product is not static rather dynamic that is changed by the process of associating and disassociating new features.

Keywords: values; Actor-Network Theory; design management

1. Introduction

In this paper, our aim is to contribute to the literature is twofold. First, we mobilise the notion of value in design by outlining how value takes place in practice as a result of a translation process. Second, we discuss how ANT can contribute to the value discourse, in particular we refer to value in design management. The motivation for proposing this in the design context emerges from the limitations of previous research. The first limitation concerns the lack of knowledge of how value actually emerges in a design context, if it is fixed or malleable. The second one concerns the lack of focus on design studies through the lenses of ANT and STS in analysing value process. Therefore, we are contributing to the discussion proposed in the call for papers of aesthetic and its crafting by exploring what constitutes value in design products. Through an ethnographic study, the paper discusses how the values of a design



This work is licensed under a [Creative Commons Attribution-NonCommercial 4.0 International License](https://creativecommons.org/licenses/by-nc/4.0/).

furniture product emerged and were managed during the product life cycle, translating the values when new actors or new markets were enrolled. More specifically, the paper uses the notion of features (Latour, 1996) in order to capture and express the value process. It suggests that the work of the spokesperson of associating and disassociating features is the key dimension of the emergence of value. It also argues that value is not fixed, but it can evolve by associating and disassociating new features.

The paper will address the question of how does the value of a design emerge by first setting out how values have been analysed in the literature of design. Second, the paper will present how ANT might contribute to the value debate. Third, the interpretation of the analyses provides interesting insight for the theory of design management reinterpreted through the lenses of management of translation. This also has implications for design practice.

2. Literature

2.1 Perspectives on values and aesthetic in design management

Design management is a diversified field, as such the literature review has been organised into four perspectives, created after dividing the papers into their philosophical foundations. The identified perspectives are: first, "Design for Decision Making", based on pragmatism, in which design is concerned by conceiving and creating artefacts to reach certain goals (Simon, 1969, pg. 114) that evolved into the second "Managing As Designing", based on Constructivism, which considers design as a tool for inspiring managers in designing organisations and to stimulate creativity (Bolland & Collopy, 2004). Third, "New Product Development Process in Industrial Design", based on functionalism, considers design an activity and its outcome that is meant to give form and order to life's processes (Ulrich, 2011). Finally, "Design As Proposals Of New Meaning", based on hermeneutic, considers design as a driver for innovation, and radical innovation happens when designers design products with new meaning (Krippendorf, 2006; Veganti, 2009).

In the design for decision-making perspective, value is created when a problem is solved through a solution that has been designed and emerged among multiple possibilities. Since the problem can be solved by preparing a tree with paths of different solutions, the scheme for fastening value to partial paths may be quite different from the evaluation of function for proposed complete solutions (Simon, 1969). The process for seeking problem solutions can be used for gathering information about problem structure, and is valuable when a solution is found. Value can be calculated, and is an acting force operating on and through design, and the principle of substitution: when there is no more value, the product should be substituted. Recently, this concept has been reinterpreted in managing as designing, based on the studies of Simon (1969) and Weick (1993). The value is created through the architecture of the organisation, in order to achieve lasting value for society. Design is a vehicle for creating dialogue across socialised professions (Weick, 1993). If managers behave

with a design attitude, they can be flexible and reactive, creating sustainable products, sustainable working conditions that can benefit and create value for all the stakeholders involved in the firm (Boland and Collopy, 2004). Problem representations determine how well managers perform and create value, and such value is created through the use of language, developing awareness.

The value in the second perspective consists in having a product which is stylish, aesthetic, of high quality, attentive to the customers' needs and that consequently enhances the company's reputation. Value creation refers both to value delivered to the customers and to the value created for the company. As such, value is considered both in economic terms and customer satisfaction and loyalty (Pullman and Gross, 2004). Value is critical for providing sustainable competitive advantage to the firms that are adopting a design-oriented strategy for new product development (Kotler and Keller, 2009), which includes delivering innovative products that meet the customers' needs and are high-performance (Borja de Mozota, 2003). Hertenstein, Platt & Veryzer (2005) quantified the value that design produces, which resulted in economic value, added value, and percentage of sales and economic value, customer satisfaction, innovation, and creativity. Marketing is considered the organisational function through which value is delivered to the consumers (Jun, 2008) as exchange process (Borja de Mozota, 2003). Norman (2004) affirms that the value of design resides in the emotions that it is able to elicit. Their value depends on the occasion, contest, meaning that they are conveying, and on the beauty that is embedded. Thus, design is valuable because it creates emotions (short lasting), stimulates moods (long lasting), traits and personality.

In the third perspective, value is created when the firm delivers a product to the customers with better design, performance, quality and experience (Utterback et al., 2006). Value is created by adding to a final aesthetic of a product which conveys new meanings, defined by its emotional and symbolic value, a personality and identity, which may easily go beyond the style (Verganti, 2009). The meaning in products is a link between the social aspects, specific languages, sets of signs, symbols and icons associated with the product. The value of using design driven innovation is asserted to the increase of the profit by increasing sales or by decreasing manufacturing costs, conquering the market share, increasing the competitive advantage, and revamping the mature and failing products (Verganti, 2009). The value created for the customers is reflected into the increase of value at the level of corporate image, including brand, stationery, publications, exhibitions and web design.

The following table summarises the perspectives

Table 1 Value in the perspectives of design management.

| Value | Design for decision making process | Managing as designing | Industrial design | Design as a proposal of new meanings |
|--------------|---|------------------------------|--------------------------|---|
|--------------|---|------------------------------|--------------------------|---|

| | | | | |
|---------------------------------|--|--|---|--|
| Generated in | Its properties and fitness to the task | Social structures | Price and desire for products | Social and cultural context |
| Understood as | Durable | Determinable within the organisation structure | Objectively determinable | Subjective, arbitrary, depending on the culture |
| Design product | Utility | A mean to an higher end | Cost- opportunity object that is measurable economically | A sign |
| Implication for managers | Need to meet specific ways of doing things | Need to cope with different belief systems | Need to make the products competitive, distinguishable and more desirable | Need for understanding the social and cultural context |

2.2 Emerging perspective

Recently, Actor Network Theory and Science and Technology studies have been used as frameworks for analysing design, for the discussion of architectural design (Yaneva, 2009), of user-centered and human-computer interaction design (Wilkie, 2010), and participatory design (Callon, 2004).

ANT considers reality as relative and co-constructed, existing only within the network and in the translations. For this reason it has been indicated also as sociology of translation (Callon, 1986). The word translation means “*displacement, drift, invention, mediation, the creation of a link that did not exist before and that to some degree modifies two elements or agents*” (Latour, 1994, pg. 32).

Human and non-human actors are constantly working to stabilise the reality and constituting design. Design is the outcome of the process of constructing things by translating interests and goals, enrolling and mobilising actors. Design is a technical artefact in which the actors belonging to the socio-technical network are inscribing characteristics, values and behaviours (Akrich et al., 2002b). Design is not a discovery momentum or an act of genius by a designer, but the outcome of the work done by the actors enrolling other actors, analysing, prototyping, interpreting the inscriptions, the trials with the machines and the materials (Latour, 1987). Thus, design is made coherent inside different networks, forged as the history of its construction and its transformation. Design is constantly in search of allies and the designer and the manufacturer are the actors who are acting to capture the allies’ attention, displacing goals and explanation after explanation, the reinterpretation of the features of the design (Latour, 1988). During the process, the spokesperson emerges, trying to create a stable network of human and non-human actors across social, organisational, and technical domains. Design process happens through translation to make the network

stable by solving struggles, in a context that is not planned, sketched or anticipated, but emerging from the capability of entering into a dialogue with multiple actors. Each modification of the interests and each translation are visible and modify the inter-relational systems. The design processes can be seen as a mishmash of decisions that cannot wait in an environment of complex changing markets and customer tastes, in which actions cannot be planned or predicted in any mechanical way (Akrich et al., 2002a). The meaning and the qualities of the objects are produced, not given, as objects do not have inner properties; the semiotic meaning of design is not *a priori* determined, but constructed in the network by engaging a multitude of the complex micro-processes that happen in the design creation, development, launch, and post launch phase. Design is performative through the relations (Latour, 1999). Latour (1991) explains that the success of an innovation is not only due to the fact that a technology is simpler or better than another one, but rather to the fact that the customers could understand and accept a long chain of translations embedded in the product and black box them. After the launch, the design is displaced, moving in space and time, presented to the consumers through its features. The features are elastic and they can break in any moment if not supported when the negotiations become tense and difficult. The features might be understood as accidental because they are framed and built-in to the relationships (Latour, 1999), and the spokesperson is translating the features associated and disassociated with customers. Value is generated from this process, it resides in the relations, it is emergent, fragile, and in the need of a spokesperson responsible for translating it to customers (Latour, 1994), including and excluding features that otherwise would not be associated or disassociated from the design.

3. Method

The aim of this research is to establish how ANT can facilitate the exploration of the emergence of values in the design of products, overcoming the limitations of the four philosophically routed paradigms described above, which are commonly ascribed to in everyday design practice and accompanying literature. To collect data, an ethnography was performed in a Danish design company, Fritz Hansen, following the actors in their process of network construction, their trials to make the ties stronger; to see how they have compromised, negotiated, and compacted their associations; how translations happened and what was actually translated, how were the features associated and disassociated. The chair was the object of the analysis, the Serie7, that is the most sold chair in the world, designed by Arne Jacobsen. The information were completed with three years of visiting the company and the showrooms, 28 formal interviews and informal chatting at the lunch table or at the coffee break, all noted or recorded. All the data were transcribed and coded with software for qualitative research. The first two episodes of the analysis are based on historical data, the third and the fourth on interviews and historical data analysis.

The product life cycle was constructed to investigate the values, how (if) they changed over the years from conceptualisation of the idea to the date of research collection. The units of

analysis are called episodes (see Figure 1), a term borrowed from a previous study by Latour (1987), that distinguished the moments of analysis to facilitate interpretations.

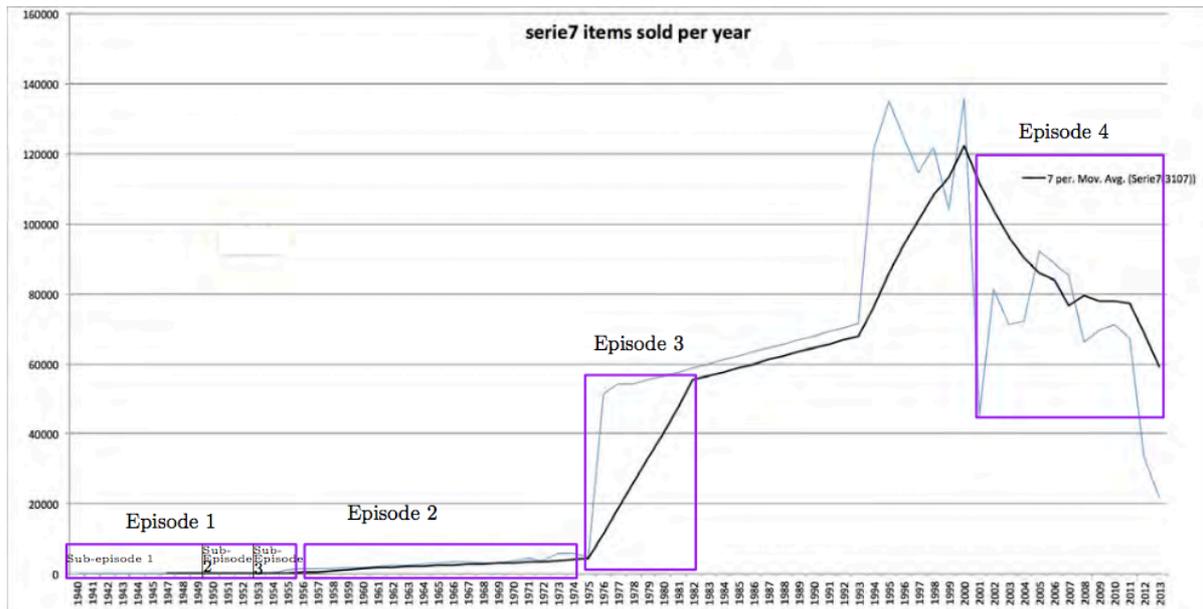


Figure 1: Serie7 items sold per year from 1940-2013, detailing the four episodes.

4. Analysis of the Serie7

The first episode involves the design of the chair. The Serie7 is the first chair made of plywood designed in Denmark (Figure 2).



Figure 2: Image of Serie7 chair, from the website fritzhanzen.com

The manager of the company and the designer worked together to promote the features of this new chair that was made of plywood and had a modern design. They qualified the chair describing the plywood as being flexible for the industrial production, allowing high volume mass production, and decreasing the price per item. This design created the mass market. The features associated and disassociated were presented in similar ways in Scandinavia and USA, which were the two main markets. After the second world war (1939-1945), Denmark's economy flourished; according to economic reports from the Danish Government of that time, wages increased, resulting in greater consumer purchasing power, factories increased production capabilities and this was coupled with an increase in the export of products. The USA government wanted cheaper solutions for furniture for the numerous refugees escaping Europe, and in Denmark for new housing.

The values attached to the Serie7 emerged to answer to those needs. These values were different from the values of the design before the war, which were typically made of precious or bent wood. Pre-war furniture was considered to be an object of art, handcrafted, produced in small quantities, for wealthy customers that were willing to pay a high price. The spokespersons for the Serie7 chair worked to disassociate the new episode from these values. The spokespersons promoted the features of the plywood being functional, nice, flexible for the industrial production, allowing high volume, mass production, and decreasing the price per item. The plywood was valued as an alternative to the bent wood technique for steam which became very costly to produce, as it was handcrafted. Moreover, Fritz Hansen Company was among the first one to change the timber used in the furniture, switching from walnut to beech, Denmark's most common tree, and developing a new technique to transform it into veneer, the material for the plywood. The Serie7, thanks to the modernisation of the factory in 1954 and the use of gluing and veneer, was very fast to produce.

The production manager did not oppose resistance to the new industrial technology, but worked actively to find and build the machinery necessary to work with the plywood and expand the industrialisation process. The spokespersons worked to enlist the factory workers to the goals of the new technology, explaining that they would not lose their job, their tasks would be less complex, more efficient and produce higher quality products, and as a result new jobs would be created.

In an interview for the newspaper¹, about the industrial production and the design process, the manager at that time affirmed:

“Fritz Hansen is considered not only Denmark's but Scandinavia's largest and best furniture factory. This means something in Scandinavia, where furniture design, like most other industrial arts, is of a very high standard. (...) We are especially known for the excellent chairs. Not only artistically but also technically, the factory has done a pioneering job and several stages of the manufacturing process are built on inventions and pieces of machinery that have been experimental.”

¹ møbel- kultur9/64

The spokesperson associated the features that concerned the high volume of mass production to increase the profits by reducing the cost per chair, without impairing the quality that was translated to the customers as elevated and constant, and promoted the features of cost saving, innovative, working chair but also a chair ideal for families.

Arne Jacobsen, the designer, was aware of the framing power of the press for building a strong network to sustain his designs, and “he did not draw a single line without informing the press.” Arne Jacobsen attached and worked to promote the features of being lightweight, of good quality, organic, and stackable, since the new flats were built smaller, so there was the need for having stackable furniture. The Serie7 was translated as a chair of good seating, novel, organic, innovative, beautiful, with armrests, with a good price, and able to provoke a good feeling in their users.

The second episode analysed the introduction in the market of the Serie7. The spokesperson in this episode (the manager) organised numerous exhibitions and participated in fairs to display the chairs. Through the press, he publicised that these new chairs to the public, and through the press, described them as communicative, intimate, pleasant, and suitable for different tastes. The way in which the exhibitions, curated by Jacobsen, were staged, framed the chairs accordingly; they were able to bridge the gap between old and the new since they were pictured both in old and in modern flats surrendered by old and modern furniture; they were warm, new, not made by a cabinetmaker, suitable for big and small environments, modern, Danish, for families, stackable, ergonomic, durable, and of good quality. The interior designers were describing the Serie7 as ideal furniture for the “ideal family”. The price of the chairs was increased to indicate quality and long-lastingness: in considering a long-term perspective, the customers save money because they were not required to replace the chairs. The manager commented²:

“It is stupid to think that Fritz Hansen is doing everything by hand, in a cabinetmaker way and not having a rational production, but the quality is still high. The chairs are designed by an architect, who has been working very thoughtfully with a prototype. The factory is pushing the architects to play with the prototype that are handmade, and then they look together to a suitable technique for manufacturing.”

² Korte træk af en lang historie

In the third episode, the chairs experienced a sudden increase in sales. The new CEO successor of Hansen, Lassen, invested in the production of plastic chairs by Verner Panton in the 60s, but due to the oil crisis in the 70s, the factory had to reconvert back to the production and use of wood again, which had become a cheaper material. The management decided to decrease the variety of chairs produced and to focus mainly on the Serie7, which was the favourite among the customers, with 40% of the production exported, especially to the Arabian market, which was profiting from oil production. The company was relying on the heritage of the past: in the interviews for the press, Lassen referred to reputation of Danish Design. The plywood was black boxed, enabling features to be attached to the chair that were associated with it in previous episodes. The Serie7 was featured as being ergonomic; office-friendly; flexible; Danish; resistant; of good quality; reusable in the sense that it can be used by different people (mothers were giving them to their children once they moved out from home); and sustainable because it was made of wood and not of plastic. In this episode, the environmental movements were mobilising attention to the pollution caused by plastic and its associated waste. Therefore, Lassen mobilised the value that the chair was sustainable, a good alternative to plastic chairs that were polluting. Being of good quality, long-lasting and resistant, therefore, these products did not have a drastic impact on the environment. The chairs were disassociated from the features of the modern chair.

In the fourth episode, the sales decreased. The former design manager, during an interview, explained that the choice of the CEO was to increase the prices, to become more iconic and reposition the brand, declining discounts for large commissions, so the sales suffered. The current design manager described how the three values that the CEO had chosen to promote: visual (original pure, long lasting), emotional (genuine, serene, Danish), rational (superior, quality refined, ageing with beauty) values, had worked for promoting the chairs and inspire new product development.

“We work with design [of the serie7] at three levels: visual, emotional and rational level. The visual level is about the immediate attraction when you see something you find attractive, it is beautiful, and you want to know more about it. At the visual level we have three values that are: original, pure, not too many unnecessary ornamentations. We want things to be as pure as possible, easy to read, so they can be iconic. (...) For the value to be long lasting, we try to be as long lasting as possible because we want our products to have a long life span(...) At the emotional level we have three values: genuine, serene, and Danish. Genuine is about being honest, we want our products to be real materials, we are not trying to fake surfaces, paint or hide them. Serene, is about the atmosphere the product creates. We want our products to be calm, and of course serious. And the final value is Danish and that’s is actually what we haven’t focused a lot on for many years, whilst we have worked with a lot recently. (...) And finally we have the rational level and it is about more hard core facts related to a product: price, size, durability. We also have three values at that level; high quality or superior quality, refine and on the edge of beauty.”

In recent years, the focus has been to promote the serie7 by emphasising the focus on natural furniture material, promoting the feature of being genuine, natural and cosy.

Therefore, the Serie7 is described as sustainable, the wood is resourced from certified forests; it is long lasting so there is limited waste. The standards for the production are high, meeting European requirements for all of the different markets. The Serie7 is translated as classic and timeless, simple, easy to recognise, quiet, but having their own character; therefore, they can be displaced in totally different contexts. It is also democratic, conveying good values: combined with the new social-democratic politics, modern design could offer the opportunity of an improved life at home and shared prosperity, and to this day the home remains absolutely central to the focus of Scandinavian life.

In the developing markets, the Serie7 is considered as a luxurious furniture, which customers are buying for reasons of status and notoriety, but in Europe and America it is promoted as a classical Danish product that is comfortable, good quality, and to have emotional value.

5. Discussion and conclusions

The value creation process in this analysis was seen as a construction that occurs through the work of managers by translating the features, which are continuously negotiated and defined in networks incorporating different actors. The features are recognised as contingent and negotiated upshot of local and historical processes (Neyland and Senekova, 2012, Woolgar, 2004). The values are not inherent in the object. In the perspectives of value creation presented in the literature it seems that, once the product has been developed, the interpreters explain to the customers and the customers will be ready to accept in a passive way. In the analysis, the value creation process is a process of associating and disassociating

features through relations and they are transformed every time the relations change. The values are fragile, mediated, intended as created and constructed in the release starting from the features. Values are also enacted in a continuous process of reproduction (Law, 2004). The features that form the value of the product are not embedded in the products (as it is for the previous perspectives), but built around it through narratives. The features are not fixed, but they change during the process, sometimes what was disassociated could become associated and vice-versa.

Value creation is a never-ending process, in that the products are considered the result of a process in which value constructions are constantly negotiated in actor networks, it is not certain, indicating that it cannot be predicted and planned. It is complex and ambiguous and needs to be framed (Akrich et al., 2002b).

In the first perspective, value is generated in its properties and fitness to the task, as it is created whenever the manager has a system to make decisions, based on standards that determine actions, preferences and beliefs: Simon defines design as the process by which the managers devise courses of action aimed at changing existing situations into preferred ones (Simon, 1976). Management creates a system that facilitates the permanence of routines that allow this specific way of doing things, creating the organisation value. Value is generated in the social structure, the organisation has to work properly in order to create value for the society, becoming a mean to a higher end. The management could benefit by using design as a translation to make the people in the organisation cope with different belief systems.

In the second perspective, industrial design, the value is centred on the customers' decisions to buy the products and this creates value for the company. The value is considered as value for money, a monetary sacrifice that the customers have to do in order to buy the product. The company and associated values have to offer a design product whose price is aligned with the willingness, price and values of the customers. This is a cost-opportunity that can be measured economically, including the experience of shopping for it (Pine and Gilmore, 1999). Csikszentmihalyi and Halton (1981) investigated the relation between investment and utility. They demonstrated that people invest in objects with meanings, but the meaning is not comparable to the utility: the meanings that the users explain are most of the time different from the meanings that the producer intended to give. There is a process of self-awareness, an act of influence that opens the process of self and enable one to infer what the object of self awareness is (Csikszentmihalyi and Halton, 1981). Bourdieu (1984) depicts goods as sources of capital accumulation, economic, cultural (knowledge and education), social (relations) and symbolic (prestige) value. In this perspective, the values are embedded, fixed, non-changeable with time.

In the third perspective, value is generated in the social and cultural context, subjective and culturally determined (Verganti, 2009). The social and the cultural contexts are not stable but constantly changing and it depends on the meaning of the object. The value is associated with the meaning of the objects, therefore it is subjective, arbitrary, depending on the

culture and embedded in the relationships (Krippendor, 2006). Thus, this perspective could benefit from understanding the meaning as flexible, changeable, adaptable to different markets and group of customers.

As a result of the analyses of the Serie7 ethnographic case study, it is argued that ANT can strengthen the value of the previous perspectives by giving designers an additional dimension, that the essence of the design is not embedded in the product but is constructed through the relationships. As described in the analysis, the spokesperson works to associate or disassociate the features, and it is a constant negotiation among different actors, who have to accept and agree upon them. They do not exist a priori, but are co-created. By understanding the value, design could be better understood. Translation has a double connotation: to translate and to displace. Hereby, the notion of translation sensitises to what remains in place, and what gets lost (or changed), as a result of the translation. A translation may also be resisted (some elements may not be easily enrolled into a network of relation), so translation is a product (result or effect) as well as a process. All actors who participate in even marginal negotiation contribute to the design translation and as a result the meaning emerges transformed to fit and to adapt to local circumstances (Latour, 1987).

6. References

- Akrich, M., Callon, M., & Latour, B. (2002a) The key to success in innovation part I: The art of intersement, *International Journal of Innovation Management*, 6(2), pp. 187-206.
- Akrich, M., Callon, M., & Latour, B. (2002b) The key to success in innovation part II: The art of choosing good spokespersons, *International Journal of Innovation Management*, 6(2), pp. 207-225.
- Boland, R. J., & Collopy, F. (2004) *Managing as designing*, Stanford University Press.
- Borja de Mozota, B. (2003) *Design management: Using design to build brand value and corporate innovation*, Allworth Press: Design Management Institute.
- Bourdieu, P. (1984) *Distinction: A social critique of the judgment of taste (la distinction: Critique social du jugement)*, minuit. Richard Nice (trans), Harvard University Press.
- Callon, M. (1986) Domestication of the scallops and the fishermen of st brieuc bay. In J. Law (Ed.), *Power, action and belief: A new sociology of knowledge* (Vol. 5, pp. 196–233), Routledge.
- Callon, M. (2004) The role of hybrid communities and socio-technical arrangements in the participatory design, *Journal of the Center for Information Studies*, 5(3), pp. 3-10.
- Csikszentmihalyi, M., & Halton, E. (1981) *The meaning of things: Domestic symbols and the self*, Cambridge University Press.
- Hertenstein, J., Platt, P., & Veryzer, R. (2005) The impact of industrial design effectiveness on corporate financial performance, *Journal of Product Innovation Management*, 22, pp. 3-21.
- Jun, C. (2008) An evaluation of the positional forces affecting design strategy, *Design Management Journal*, 3(1), pp. 23-29.
- Kotler, P., & Keller, K. L. (2012) *Marketing management*. Prentice Hall, Pearson Education (Original work published 2000).

- Krippendorff, K. (2006) *The semantic turn: A new foundation for design*. New York: CRC Press Taylor & Francis Group
- Latour, B. (1987) *Science in action: How to follow scientists and engineers through society*, Harvard University Press.
- Latour, B. (1988) *The pasteurization of France*, Harvard University Press. (Original work published 1984)
- Latour, B. (1991) Technology is society made durable, In J. Law (Ed.), *A sociology of monsters. Essay on power, technology and domination* (pp. 103-131), Routledge.
- Latour, B. (1994) On technical mediation- philosophy, sociology, genealogy, *Common Knowledge*, Fall V3(2), pp. 29-64.
- Latour, B. (1996) Do scientific objects have a history? Pasteur and whitehead in a bath of lactic acid. *Common Knowledge*, 5, pp. 76-91.
- Latour, B. (1999) *Pandora's hope: Essays on the reality of science studies*, Harvard University Press.
- Law, J. (2004) *After method: Mess in social science research*, Routledge.
- Neyland, D., & Senekova, E. (2012) Managing the electronic waste: A study of market failure. *New Technology, Work and Employment*, 27(1), pp. 36-51.
- Norman, D. A. (2004) *Emotional design: Why we love (or hate) everyday things*, Basic book.
- Pine, I. I., & Gilmore, J. H. (1999) *The experience economy: Work is theatre and every business a stage*, Library of congress cataloging in publication database.
- Pullman, M., & Gross, M. (2004) Ability of experience design elements to elicit emotions and loyalty behavior. *Decision Science*, 35(3), pp. 551-578.
- Simon, H. A. (1969) *The sciences of the artificial*, MIT Press.
- Simon, H. A. (1976) *Administrative behavior*, Cambridge University Press.
- Ulrich, K. (2011) *Design: Creation of artifacts in society*, University of Pennsylvania.
- Utterback, J. M., Vedin, B. A., Alvarez, E., Ekman, S., Sanderson, S. W., Tether, B., & Verganti, R. (2006) *Design-inspired innovation*, World Scientific Publishing.
- Verganti, R. (2009) *Design-driven innovation: Changing the rules of competition by radically innovating what things mean*, Harvard Business School Press.
- Weick, K. (1993) The collapse of sensemaking in organizations: The mann gulch disaster. *Administrative Science Quarterly*, 38(4), pp. 628-652.
- Woolgar, S. (2004) What happened to provocation in science and technology studies? *History and Technology*, 20(4), pp.339-349.

About the Authors:

Dr Marta Gasparin is a Lecturer in Innovation and Design Management. Her research interest is on design and innovation management and social sciences. In particular, she is interested in exploring how value is created and managed, and the design processes.

Dr William Green is a Lecturer in Innovation at the University of Leicester School of Management. As a member of CIEHF, his research

GASPARIN, GREEN

explores the role of technology in the production of innovation. He has recently led projects funded by Marie Curie Actions, Technology Strategy Board and Health Education England.