On design as liberal art: The art of advancements
Maris-de Bresser, I.

Citation for published version (APA):

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Exploring Design Controversies: An Actor Network Theory Inspired Methodology for Studying Design

Exploring design controversies was not what I set out to do when I first started the empirical research. Neither had I expected them to be there, nor to develop into the arenas where what it means to design is defined, negotiated and contested. They hit me, so to say, in a moment when I least expected, when I thought I had everything figured out.

My initial research interest was in obtaining a first-hand understanding about the practice of designing for online interaction and collaboration. I was very interested in learning about how web designers go about developing online spaces, such as social media and online communities, where people with similar interests can meet, share ideas and learn from each other. I was curious to find out what design theories web designers employ in creating such online spaces, what their worldviews are and how they employ such theories and worldviews in their work. In other words, I was interested in the design thinking and acting of social media designers.

I learned about the intention of the Amsterdam Museum to develop an online community for its general public and its employees. The particular setting of developing an online community for a museum fascinated me, and so I began following the project. I made contacts with Mediamatic, the web designers’ office that would develop the online community for the Amsterdam Museum. I made agreements with them and with employees from the Amsterdam Museum to allow me to attend their design meetings, observe web designers at work and interview the web designers and the museum employees that were involved in the project of developing the online community.

I was four months into my field research, when I attended one such design meeting between two web designers from Mediamatic and three museum employees. The aim of that meeting was to propose some changes to the layout of the community’s pages and to discuss the
possibility of having sub-communities too, each with its own interest theme. The website of the online community was already finished and launched and the museum was engaging in diverse activities to attract people to participate in the community. While waiting for everybody to get ready for the meeting, one of the museum employees told me about a new project she was working on. This project was an exhibition about Johan Cruijff, the internationally acclaimed Dutch football player. The idea of this project was to invite members of the newly developed online community to share stories and pictures of their encounter with Cruijff. The plan was to collect these stories and build the exhibition entirely based on them. The exhibition would be entitled ‘Johan and I’, and would present the story of Johan Cruijff through the eyes and experiences of his fans.

The difficulty was that this exhibition ignited a museum wide debate that slowed down the progress of the preparations. Particularly the idea of inviting football fans to provide, on the online community, the materials for a museum exhibition and possibly even get involved in curating the exhibition itself was less welcomed by some museum employees. The latter welcomed the online community itself as a means to communicate with the public, but they could not get comfortable with the idea that the members of the online community would get so closely involved in organizing the activities of the offline museum. The idea of blurring the museum’s online and offline boundaries, of changing established ways of preparing an actual exhibition, both in terms of what materials are presented, how and by whom, ignited many discussions and uncertainties.

The museum employee explained, almost defending her ideas, that when you try to develop a new technological system which people believe will not affect their ways of working, everybody goes along with the idea. Yet, when you try to change established ways of working and of being a museum, everybody has an opinion about it and ideas for how it should be done. Coordination is difficult, and the more actors are involved, the more difficult the coordination process becomes. Conflicts and negotiations are not exceptions, but the rule (cf. Simon 2010, Odding 2011 for similar insights).

It was then that I realized that my research would not be complete if I did not explore in more detail the entanglement between designing the online community and the practice of the museum itself. And, I became fully aware that if I did not look at these controversies, I would not be able to understand the nature of the change the museum is going through once it
develops an online community for its general public and its employees. Going to the literature to find explanations for these controversies only complicated the inquiry. Also there I found more controversies than concrete answers. As I delved deeper into these controversies, I understood that they are the very arenas in which different ideas, bodies of knowledge and interests are drawn together, where what it means to be an open, participative museum and how to achieve it are defined, negotiated and contested. These controversies would offer unique insights into the nature of designing without a product and into the possible shift from design as problem solving to design as an art of advancements.

In this chapter, I discuss the methodological considerations I took in this research. I address the first question of my research: How to deploy the many controversies about design without restricting designing in advance to a specific domain (individual or structural)? The chapter is structured as follows. I begin in section two by introducing the research setting of this study, the design project initiated and performed at Amsterdam Museum. I address here the nature of the object of design in this project. I continue in section three with presenting the methodological foundations of this study. As mentioned in the introduction of the thesis, I follow Latour’s (2005) way of working in tracing designing without a product. I too feed off controversies, this time the design controversies, with the aim of building an understanding of the nature of designing without a product. Section four presents the shift I made in research strategies, and introduces exploring controversies as the main research strategy I employed. Here I describe what moves, methods and techniques I made use of to explore and feed off design controversies. Section five outlines the analysis techniques I employed in this study in moving from empirical insights to concepts. At the end of the chapter I return to the methodological question of this study and re-emphasize the value of feeding off controversies in exploring the nature of designing without a product.

**Research setting: the Amsterdam Museum project**

I explore the nature of designing without a product as a liberal art of advancements by following the design work that is being done at the Amsterdam Museum, the Netherlands. Almost three years ago, the board of the Amsterdam Museum has initiated a museum redesign project with the aim of transforming the museum from an institution to an online and offline meeting place for people interested in Amsterdam and its stories. As a city museum, the
Amsterdam Museum has been centered for decades on telling the story of the city of Amsterdam and of its inhabitants. The exhibitions the museum offers are thematic, focusing on presenting the discussions on such Amsterdam related topics as migration, prostitution, fashion or entrepreneurship among others. The Amsterdam Museum’s focus is therefore different from art museums like Van Gogh Museum or the Rijksmuseum in Amsterdam. The latter are collection focused and aim at presenting exhibitions of famous art.

The Amsterdam Museum redesign project is emblematic of a larger, worldwide journey of transformation that the museum world is going through. Around the world, city museums are undergoing steep changes in their relationships with the public, in their functions and in their ways of exhibiting art (Hein 2000, Phillips 2008, Skartveit and Goodnow 2010, Odding 2011). The Museum for Art and History in Santa Cruz (USA), for instance, is developing towards an organization that is relevant to different communities in the area, and that encourages participation and discussion in the museum by means of event-centered experiences (Simon 2010). In Europe, Tate Britain is going through the same transformative process. The museum is developing online membership clubs that encourage people to “Be a part of Tate”, and become attached to the museum (Barden 2011). In a world of social media and communal forms of organizing, these developments may not be unexpected. Yet, they imply serious questions of organizing, identity and authority for those responsible for the museums viability and continuity (Odding 2011).

The Amsterdam Museum is heading for a similar course. It tries to find suitable fresh arrangements in its interaction with the public, its supportive technologies and way of organizing. Central to this redesign project has been the development of an online community platform, The Heart http://hart.amsterdammuseum.nl/, where both the public and museum employees are encouraged to meet, share ideas and tell together the story of Amsterdam. To develop this platform, the Amsterdam Museum has been collaborating with Mediamatic, a web design office in Amsterdam.

Mediamatic is a web design office with more than 20 years of activity. At the moment of writing, around 40 people are working at Mediamatic, among whom are concept designers, interaction designers, graphic designers, front and back end developers, project managers, events managers, marketing employees and so on. Mediamatic characterizes itself on their website as “being active as a cultural institution. We are interested in cultural developments
that foster new technologies, and new technologies that spur cultural developments”. They present their work in terms of “researching and developing new ways of organizing resources and people”. As “creators of interactive social media projects”, Mediamatic has engaged in designing new media applications that encourage collaboration, interaction and sharing such as social network sites, event services, installations and storytelling sites. Their work is project based. Developments and insights obtained from one project are used as a base for innovation in the following projects. Their clients are varied, ranging from ministries, businesses, cultural organizations, museums and foundations.

The collaboration between Mediamatic and the Amsterdam Museum started many years ago, when Mediamatic built two other online communities that were subsequently part of two physical exhibitions organized in the museum, namely Memories from the East and Neighborhood Shops (see Appendix 1 for print screens of these two communities). The new online community, The Heart, would be an overarching community that would bring together all those interested in the story and history of Amsterdam (see Appendix 2b for a print screen of this community). The Amsterdam Museum considered that by developing their own online environment, rather than simply adopting existing platforms such as Facebook, they could foster more meaningful and authentic relationships between themselves and the public. At the moment of writing, the online community is very active. It has three large sub-communities dedicated to different interest groups on Amsterdam in which both museum employees and interested public participate with stories, discussions and photos.

The management of the Amsterdam Museum acknowledged that simply developing an online community platform where employees and the public could meet and collaborate would not by itself transform the museum into an open meeting place. Rather, for the new museum to be authentic, it was considered that the ways of working and being a museum will have to change too. The development of this online community platform therefore went hand in hand with a reorganization of the museum itself. It consisted of the introduction of new ways of working inside the museum, more open and interactive ways of preparing exhibitions and presenting art, the organization of different types of community oriented activities and exhibitions in particular neighborhoods of the city, and so on.

The redesigning of the museum itself raised many issues and discussions about the museum’s identity, its role in the Amsterdam community and the museum’s knowledge authority in
telling the story of Amsterdam. What it means to create new online and offline spaces for interaction and collaboration between the museum employees and the public, and what the implications are for being a museum, were always under debates and negotiation. It is these design issues and controversies in designing an open, participatory museum that I observed and traced during field research and that I deploy in this study.

The object of design in designing without a product and its ontology

The object of design in the Amsterdam Museum project is the museum as an online and offline meeting place. This is the dream of the museum employees, and everything they do in and outside the museum is directed towards realizing this dream. This object of design is not a stabilized product that has clear requirements. It is not a design problem which can be easily solved once and for all. Rather, it is ‘an assemblage’ (Latour 2005), a ‘constitutive entanglement’ (Orlikowski 2007) of people – museum employees, public, volunteers, web designers, and objects – museum collection, interactive technologies, public stories. The work that museum employees perform is directed towards making this assemblage of people and things work. One museum employee explained the nature of the object of designing without a product in the following way:

“The big idea… I don’t think I do something really different now than I did when I made the network of organizations in Amsterdam. I don’t see a real difference. And I recognize that in people like Steve Jobs: it’s all the same mechanism, it’s all the same thing you are doing. I don’t know how to say that but it’s all about getting people and technology work together and create circumstances in which people feel free to express themselves, and in which they can be creative.”

This multiple and emergent object of design reflects a relational ontology. According to ANT, humans and the materials around them become what they are in relation to or as a result of their relationship with each other (Law and Mol 1995, Knorr Cetina 2001, Orlikowski 2007), in associations that need to be constantly performed. The design process is per definition one such forum where both designers and the objects of their design become what they are only in relation to each other. This is what Latour (2005) meant with the notion of ‘assemblage’ and what Orlikowski (2007) meant with the notion of ‘constitutive entanglement.’ There is no
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museum without its employees, collection, buildings or without the public and funds. When the aim is to transform the museum into an online and offline meeting, the entire assemblage of people and things needs to be taken into account and set in motion. This is the wickedness of contemporary designing. In this thesis, I will illustrate how the museum employees dealt with the wickedness of their design situation, what types of knowledge, methods and strategies they employed in meeting the ambition of making their museum more interactive and open to the local public.

How to feed off design controversies: An ANT methodology

In order to be able to trace, make visible and feed off the controversies about the nature of designing without a product, I adopted in this study the Actor Network Theory methodology. Nickelson and Binder (2008) and Yaneva (2009) made a similar choice in their studies, yet they focused more on the material entanglements in design than on deploying design controversies. I follow Latour (2005) in arguing that taking an ontological perspective that prioritizes either structure or human agency would not be able to account for the diversity of actors, activities and relations that are at play during a design project as the one observed at the Amsterdam Museum. Actor Network Theory (ANT) provides a methodological perspective that cultivates the ontological interest in relational materiality and in performativity. A central tenant of ANT is that humans and the objects around them become what they are in relation to or as a result of their relationship with each other (Law and Mol 1995, Knorr Cetina 2001, Orlikowski 2007), in associations that need to be constantly performed. Such interests in relational ontology and performativity are also shared by certain authors working in the practice theory tradition, such as Pickering (1993), Knorr Cetina (2001) and Gherardi (2009, 2010) and in the sociomaterial approaches of, for instance Czarniawska (2004) and Orlikowski (2007). Lee and Hassard (1999: 393) describe ANT as:

“empirically realist, in the sense that it leaves the task of challenging its empirical base to the research and user communities it addresses, and ontologically relativist in that it typically embarks on research without a clear picture of what sort of entities it will discover through investigation. This distinguishes ANT from both modern and postmodern research strategies.”

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ANT was particularly insightful for this study as it moves beyond the distinction between micro- and macro-phenomena, between human agency and structure, in this case between the individual genius and abstracted design process. Latour (2005) urges researchers that if they are to move away from these distinctions, they need to keep the world ‘as flat as possible’ and to ‘follow the actors themselves’ in their making of the world. In this study, this was a very difficult task, yet not impossible.

To keep the world as flat as possible, I directed my attention to how museum employees, their collaborators and the objects they work with such as interactive technologies, public stories and the museum collection engage together in doing, acting, making, performing, creating and negotiating their world(s) (Latour and Woolgar 1979, Law and Mol 1995, Latour 2005). I followed the actors in their everyday practice, observing how people engaged objects to make their ideas and arguments concrete and how objects engaged people as sources of knowledge or as triggers of inspiration. And, I tried to move away from stabilized agreements, from examinations after-the-fact and focused on mapping the issues and uncertainties that were visible in various meetings: what where they about, who and what took part in them, what arguments were brought to the fore and how, and how the museum employees managed or not to reach an agreement. Focusing on those instances where things were still in the making was fascinating. Latour (2005: 89) wrote in the following way about the fascinating power of such instances where things are still in the making:

“When you are guided to any construction site you are experiencing the troubling and exhilarating feeling that things could be different, or at least that they could still fail – a feeling never so deep when faced with the final product, no matter how beautiful or impressive it may be.”

Also to be able to trace, make visible and feed off controversies, I made a re-turn to practice (Gherardi 2012). I explored the real life practice of designing not as an empirical object out there, stable and independent of my own research. Rather, I used the notion of practice as an epistemology (Gherardi 2012). Practice theory puts forward the view that knowledge does not reside in individuals’ heads, nor that it is a production factor which can be easily managed, stored and used strategically. Rather, knowledge is seen as “a collective, situated activity” (Gherardi 2012: 199). Knowing and learning is something people achieve together by engaging in collective action, it is integral to doing (Corradi et al. 2010, Nicolini 2011).
Therefore, employing practice as epistemology means that we can learn about design only by examining the doing of design. Such an epistemological perspective departs radically from the objectivist epistemology that dominates the design as process paradigm. In this latter epistemological perspective, knowledge about design is obtained by testing theories, abstracting and deducting. Practice as an epistemology foregrounds movements, doings, changes and negotiations as the locus of knowing. Ways of working, worldviews and methods are never stable but always under negotiations in practices. As such, practices are in a continuous state of becoming, indeterminate and incomplete. Our knowing of practices is equally incomplete, yet as long as we allow the actors to deploy their controversies without us closing them too soon, we can learn together with them what their world is made of.

The research strategy: from ethnography to exploring controversies

As the field research progressed and I moved towards exploring design controversies that are ignited in the Amsterdam Museum redesign project, I knew that the research strategy I was employing at that moment would need to be revised.

Following my initial interest in the web designers’ ways of working and thinking towards creating social media, I began my empirical research with the intention of conducting a full-fledged ethnography. The benefits of conducting an ethnography is that it encourages the researcher to immerse in the research setting of his/her study, learn about the ways of living and working of the people s/he is following and gain the ability to describe and explain their social world from an emic perspective, as the people themselves would describe and explain it (Hammersley and Atkinson 2007, Saunders et al. 2007). Following ANT’s call to “follow the actors themselves, that is try to catch up with their often wild innovations in order to learn from them what the collective existence has become in their hands” (Latour 2005: 12), ethnography seemed to be the most appropriate research strategy to follow. There are few ethnographic studies of web designers’ practices, and as such this study was a great opportunity for obtaining a first-hand understanding of how web designers actually engage in designing, building and developing the type of social media that are becoming part and parcel of our lives.
I spent the first four months of fieldwork conducting observations of web designers at work at Mediamatic, I attended the design meetings they had internally with developers, project managers, interaction designers and so on, the meetings they had with employees of the Amsterdam Museum but also with other clients, and attended some of the events organized by Mediamatic. In the same period, I conducted observations at the Amsterdam Museum, focusing particularly on the work practices of the E-culture department. This department was the most involved in the actual development of the online community. I attended their internal meetings, as well as meetings with the museum volunteers that would be among the future members of the community. Throughout the observation period, I keep detailed field notes, made recordings of meetings and took pictures. Also in this period, I conducted 20 semi-structured interviews with project managers, designers, developers and the museum employees who were involved in the Amsterdam Museum project.

However, as my focus switched towards exploring the design controversies I could no longer ignore, I felt that the ethnographic research strategy was not strong enough to trace the different actors, issues and perspectives I was observing in practice. Unlike individual and collective behavior which I could observe in the field, controversies are more elusive and are not easily researched through an ethnographic approach. Too many times, controversies gave way to general agreements in meetings, only to surface later in informal discussions and interviews.

Likewise, I became unsettled about the ethnography’s conceptualization of ‘the field’. When exploring controversies which involve not only human but also non-human actors, both present and absent, passive and active, in which different actors coming from various areas of expertise meet in both physical and virtual places to debate and negotiate their views, can I talk about ‘the field’ and if yes, what is that ‘field’? ‘The field’ was becoming larger and larger, more and more heterogeneous. It became clear that I would get lost in this ‘field’ if I did not employ a more systemic strategy to trace these actors and the debates they engage in. That is why, while still maintaining the ethnographic principles of immersion and openness, I decided to adopt more systematically the strategy of exploring controversies, as developed by Latour (2005) and Venturini (2010). In my shift from ethnography to exploring controversies, the unit of analysis did not change: my focus was still on how different human and non-human actors relate to each other and what they do and say when engaging in designing the new, more interactive way of being a museum.
What is in a controversy?

Venturini (2010: 261) argued that “controversies are situations where actors disagree (or better, agree on their disagreement)”. A controversy is settled when actors manage to reach a compromise they can live with (Venturini 2010). Controversies, Venturini (2010) argued, are by far the most complex phenomena to be observed in collective life. What makes them so complex becomes clear when we look at the five features of controversies summarized by Venturini (2010):

First, they involve all kind of actors, human and non-human, from individuals, to products, economies, laws and regulations. While not all actors are equal or act in the same manner, they are brought together by a shared, albeit disputed, interest. As Venturini (2010: 261) put it: “Every controversy functions as a ‘hybrid forum’, a space of conflict and negotiation among actors that would otherwise happily ignore each other”. Second, controversies are the space in which both new relationships among different actors are developed, and where social entities that were thought as one actor break apart into conflicting actors. Third, they are reduction-resistant. Controversies are difficult to solve because it is usually impossible to reduce them to a single question. Fourth, they are debated, emerging when ideas or ways of doing things that were previously taken for granted begin to be discussed and questioned (remember the difficulties the museum employee had when she proposed using stories of football fans in a museum exhibition). Last, controversies are conflicts. Issues of power and (argumentative) force are central even when controversies are negotiated following a democratic approach.

The strategy of exploring controversies shares with ethnography three main commandments of observation, namely:

- You shall not restrain your observation to any single theory or methodology;
- You shall observe from as many viewpoints as possible;
- You shall listen to the actors’ voices more than to your own presumptions.

To this list, exploring controversies adds yet another commandment, one that springs from the philosophical underpinnings of ANT from which this strategy was developed, namely to keep the social world as flat as possible so that all the actors become visible and their voices heard (Latour 2005):
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- You shall not limit in advance the number and types of entities you will observe.

And, in contrast to ethnography (and other research strategies too, like experiments, case studies or simulation) which focuses on exploring relatively stabilized practices and established ways of doings things, norms and cultural values, exploring controversies directs the researcher’s attention towards those settings that are unsettled, in becoming. Many contemporary design projects, particularly of the kind and magnitude observed in this study, are such unsettled settings where everything is open for discussion, where there are many stakeholders with different interests and where there is no one fixed solution to be adopted (Buchanan 1992). Here lies the power of this approach for studying ‘design at the scale of life’, ‘designing without a product’ (Jones 1980). Venturini (2010: 264) explained:

“To understand how social phenomena are built it is not enough to observe the actors alone nor is it enough to observe social networks once they are stabilized. What should be observed are the actors-networks—that is to say, the fleeting configurations where actors are renegotiating the ties of old networks and the emergence of new networks is redefining the identity of actors.”

The research methods employed in tracing controversies

During the empirical research, I employed the following research methods: observations, reflective interviews, document analysis and literature review. Another method that I planned on using but that did not work was reflective diaries. I asked six employees, four from the Amsterdam Museum and two from Mediamic, to maintain a digital reflective diary throughout the period of the design project. I prepared themes they could reflect on. The aim of this reflective diary method was to allow the research participants to express their ideas, views, uncertainties without me intervening with specific questions. And, they could write down their thoughts when those thoughts occurred, or at a time that suited them most. However, only one employee maintained such a diary for a period of two weeks. The explanation they gave for not doing it was lack of time and that they would prefer to discuss these themes with me in person, rather than in writing.
Counting also the first phase of the ethnographic research, in which I followed the project of designing the online community itself, I spend a total of eight months conducting the empirical research. This period was interrupted for purposes of preliminary data analysis, writing intermediary reports and papers, attending conferences, reading and teaching. In this eight-month period, I spent time at the Amsterdam Museum, at Mediamatic and attending events and workshops organized by both organizations.

The empirical research did not end after this period. I kept close contact with the Amsterdam Museum and Mediamatic, meeting with contact persons from both organizations to discuss drafts of conference papers and reports I wrote on the study. Also, I have been writing them e-mails with questions regarding new developments in the project, as well as with questions for clarification of issues I observed in the field or that they talked about during interviews. Chapters of this thesis were read by a few museum employees, including this chapter on methodology. Their comments and suggestions were taken into account while writing the final versions.

**Observations**

One research method I used extensively was observations (Spradley 1980). I spent a total of 10 weeks observing the employees at work, attending their meetings at the museum and at Mediamatic, sitting with them in their offices, joining them at events and so on. During the observations sessions, I kept track of all the actors the employees met with or invoked to discuss their views, ideas, objectives, expectations and plans for the design project. In these meetings, I examined how various policy documents, budgets, budget proposals and sketches mediate discussions, instigate debates and new ideas. I joined the meetings they had with the museum volunteers, who constituted a big part of the intended users of the online community to be designed. I attended meetings between museum employees and the web designers who would develop the community site. Here also, I examined how existing technological infrastructures such as the museum website, other online community sites the museum is managing, budgets and policy documents inspired, hindered, motivated, allowed all the participants to discuss ideas, express issues and problems, share information and make plans for how the design process could proceed.
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During these meetings and workshops, I paid particular attention to how ideas were exchanged and negotiated between the different employees, to the nature of those ideas and to the nature of the objects brought to the table to materialize those ideas such as sketches, policy documents, stories, web pages and pictures.

During the field research, I came to learn that it was in these meetings that the current state of affairs in the Amsterdam museum was translated into design situations, that plans and ideas on how to make the museum more open and collaborative with their public were debated, that solutions were examined and proposed and that possible impacts of these solutions on the ways the museum is functioning in general were imagined. I realized that in order to be able to show associations between the different human and non-human actors and to allow the silent actors to speak, I should not miss any detail of these encounters. Therefore, during these meetings, I kept detailed field notes, took pictures and recorded the conversations, which were later transcribed verbatim for analysis. After each meeting, I engaged in informal conversations with the participants, asking for clarifications of what I observed.

At Mediamatic, I observed the web designers sketching and asked them to explain what they were doing, to express verbally the conversations they had with their work. I attended the design meetings in which they discussed sketches and other design plans with their colleagues, with the museum employees and the museum volunteers as the future members of the community. And, I participated in workshops organized by Mediamatic for the museum employees and the future members of the online communities. It was during these observations at both the web designers’ office and the museum that I could see, for instance, how the ideas the museum employees expressed in their meetings with the designers, were articulated by the policy documents and other schemes the employees developed during meetings with their colleagues at the museum, who at their turn received instructions from the museum director in the form of e-mails and other documents. By tracing back this chain of mediators, I could see that what designers and museum employees know, comes from other different sites of productions, transported and translated by a multiplicity of material and human epistemic mediators. Taking field notes and drawing graphs and schemes were my grips during these examinations.
Reflective interviews

To supplement these observations, I conducted 42 reflective interviews. Coming from the learning history projects (Roth and Kleiner 1995), reflective interviews encourage the interviewees to describe in their own words their experiences, thoughts and understandings of the activities they are undertaking.

I interviewed employees working in different departments at the Amsterdam Museum, from curators, to project managers, employees from the financial department, new media employees, and the director. I asked them, among others, about what it means to work in a museum today, about the museums’ current strategies to welcome the public, about the problems they see and what they would like to have changed. I asked them to describe their experiences in their collaboration with the web designers, what they learned from such collaborations. I interviewed employees that were not actively involved in the redesign project. I asked them among other things, about their work practices before and after the implementation of the online community, their views and experiences on how the museum operates today and their opinion about how the museum presents itself and its societal role to the public.

At Mediamatic, I interviewed concept designers, graphic designers and technicians. I asked them about their design philosophies, the design principles they follow, their sources of inspiration, their views on the impact online communities have in organizations. I asked them to reflect on their collaborations with the museum, what was different in these projects from the rest, and so on.

Multiple reflective interviews were conducted with 5 of the 37 interviewees, who were selected based on their active involvement in all the phases of the design project. The focus of these interviews was on the progress of the project, how their views changed during the project and on their reflection on the design process in general. All interviews were semi-structured. They lasted between one and one a half hours, were recorded and later transcribed verbatim for analysis. Three interview guides I employed in the study can be seen in Appendix 3.
Document analysis and literature study

As for document analysis, I examined policy documents, annual reports, design proposals, budget applications and preliminary sketches. I followed how museum employees relate to them, how their work on the design project was enabled, inspired or hindered by them. I analyzed a large number of newspaper articles and blog posts in which the developments in the Amsterdam Museum, as well as similar developments at other museums in the world were discussed. When analyzing these documents, I paid particular attention to the issues addressed and the ways they were addressed. Many of the items presented in these documents became sources of interview questions.

Besides these documents, I reviewed extensively the design literature. I examined theories of design problems and solutions, of design knowledge and thinking, of design process and methods and of design drawing. I read empirical studies of architects, engineers, product designers, information systems developers and social media designers. I read into the field of product design and organizational design. When examining the literature, I also focused, like in the empirical study, on identifying the debates and uncertainties about what designing is and how it is performed in practice. I compared and contrasted the insights found from the literature review with the insights obtained from the empirical studies, examine what researchers say designers do and what designers say about what their world is made of. I drew on all these studies and on the empirical insights from the Amsterdam Museum project in examining the uncertainties about the nature of designing without a product.

From empirical insights to theoretical concepts

In analyzing the insights obtained from these methods, I followed inductive reasoning, guided by the idea that theory building should develop from empirical data. Following ANT’s principles, I took an emic perspective in this study. That means that in this research, the participants themselves were invited to tell their own story and outline their own worldviews and experiences in engaging in the practice of designing. In the analysis, the ‘voice’ of both human and non-human participants was central, as I tried to follow their arguments, their mediatory actions and their world framing, as Latour (2005) put it.
I conducted the analysis in multiple iterative phases of reading, coding and writing memos (Glaser and Strauss 1967, Patton 2002, Srivastava and Hopwood 2009). I employed open codes to delineate insights on the different design controversies presented by the designers in this study in their interviews but also in the transcripts of meetings and other conversations. In choosing the words for these open codes, I tried to employ as much as possible words used by the designers themselves, known as in vivo codes, such as ‘participating in the system’, ‘being a host’, ‘observing users’ or ‘reacting to users’ needs’ referring to the methods designers described as using in designing for online interaction.

I used axial coding to connect insights obtained through open coding into larger categories, or synthesizing concepts that told me something new and unique about the nature of designing at the Amsterdam Museum. In developing these concepts through axial coding, I sought to offer a theoretical understanding of how the designers in this study understand the nature of their work, particularly of the design task, design methods, design approaches, design principles, design process and design knowledge as they engage in transforming their museum into an online and offline meeting place. The list of open and axial codes I used in coding the empirical insights can be seen in Appendix 4.

In coding and analyzing the data, I employed two analytical strategies, developed by Corbin and Strauss (1990), namely that of asking questions and making comparisons. As I was reading the data, I developed three sets of questions that subsequently guided the analysis. Each set of questions was aimed at bringing to the fore one aspect of the different layers of the same controversy (Venturini 2010). These aspects are: 1. what are the different controversies about; 2. who/what engage in them and how; and 3. with what effects.

The first set of questions was directed at identifying the matters of concern around which controversies developed. When analyzing the data, I asked continuous questions such as: ‘When the Amsterdam Museum employees conceive the plan to shape the museum experience, what issues become important, what is discussed, negotiated and debated concretely?’ Each statement made during a meeting, an interview or an informal conversation, connected to larger issues, discussed in the academic literature, specialized professional literature, in workshops, conferences and lectures, which needed to be mapped too. Asking
such questions continuously and making comparisons across the data helped me in systematically tracing the controversies and the issues that were addressed.

The second set of questions was aimed at foregrounding the materiality of the practice of designing. Controversies are populated by a heterogeneous assemblage of museum employees, web designers, managers, financial bodies, government officials, members of the public, online and offline technologies, pieces of art and history, stories and pictures, and so on. In analyzing the data, these type of questions I asked were meant to bring to the fore the nature of the relationships between designers and their objects of work, such as sketches, design proposals, the online community site, the art collection and so on. An example of such a question is: ‘What does a design proposal do in the collaboration between Mediamatic and the Amsterdam Museum?’ Analyzing controversies would not be complete without paying attention to the ways in which objects inspire, mediate, give body and substance to a debate or how they convince others into action.

The third set of questions was directed at exploring what these controversies do in such a design project as the one observed at the Amsterdam Museum. Each controversy examined brought together not only different ideas and different actors, but also different visions of what the new museum should or could be in the future, as well as different visions of how this new museum should or could be developed in the future. Venturini (2010: 263, italics in original) argued that "controversies remain the best occasions to observe the social world and its making". As such, the types of questions I asked here were: what exactly do we see in the making when we examine these controversies? Is it a new museum practice, a new design practice, a new system of appreciating and evaluating these practices or something completely different?

These sets of questions allowed me to keep the analysis as flat as possible, by focusing on issues that engage both human and non-human actors, giving priority to neither one of them. And, they offered me the ability to keep the inquiry open to new insights, while remaining systematic in the examination of each controversy.
Closing remarks

The question that guided this chapter was: ‘How to deploy the many controversies about design without restricting designing in advance to a specific domain (individual or structural)?’

In this chapter, I argued that in order to achieve this goal, we need to adopt a methodology that foregrounds movements and dynamics instead of stabilized processes; one that keeps the social world as flat as possible and does not prioritize either human agency or structure (Latour 2005). Existing methodologies that focus on examining already settled design processes, that limit designing to an act of problem solving, or that foreground stabilized, agreed upon theories of design are not open enough when examining those design situations in which the designed is still emerging, in the making; where the design theories and approaches to be employed are still debated; and where the clients challenge the professional designers about what should be done and how. The power of the ANT methodology is that it provides researchers with the techniques to maintain the design world as flat as possible, to allow all the actors to express themselves without prioritzizing them in advance and to focus on the actors’ different performances and enactments.

Also, in order to deploy the many controversies about design, I argued for a re-turn to practice (Gherardi 2012). Unique insights about designing can be obtained by exploring - rather than deducting and testing - the real life, everyday doing of design. The Amsterdam Museum is a museum in the making. Different work philosophies, worldviews, roles (employees, web designers, public, financial bodies, government) and materials (technologies, art objects and public stories) are brought together and ideas are sought to make these assemblages work.

The value of examining and deploying controversies lies in that they are the arenas in which the practice of designing is constantly negotiated, valuated and refined. Controversies allowed me to move away from stabilized designs, stabilized processes and methods to observe design in the making. And this is particularly valuable in examining the nature of designing without a product, a type of designing practiced by contemporary designers yet still little understood in the design literature.
In the following chapters, I examine four design uncertainties on the nature of designing I observed in both literature and practice and deploy the controversies designers ignited as they tried to make these uncertainties discussable. In these chapters, I will address the second research question of this study, namely: ‘How to render fully traceable the means allowing designers to stabilize controversies?’ I am aware that our accounts can be incomplete. The projects we are following continue to develop in our absence too. We hear about important events that took place, about valuable decisions that were taken or about vivid discussion that were held when we were not there. Yet, I will try to offer as close a descriptive account as possible of what I observed, heard, read, noted, recorded and understood during my research. I will try to include all the actors, human and non-human that, according to the people I talked to, made a difference in their work. And I will try to show what the practice of designing has become in their discussions, meetings and mixing of ideas, perspectives and materials.