The Didactic Theater

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The Didactic Theater

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Declaration

I certify that except where due acknowledgement has been made, the work is that of the author alone; the work has not been submitted previously, in whole or in part, to qualify for any other academic award; the content of the thesis is the result of work which has been carried out since the official commencement date of the approved research program; any editorial work, paid or unpaid, carried out by a third party is acknowledged; and, ethics procedures and guidelines have been followed.

Johan Granberg
19 of September 2012
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In the Laboratory is an introspective attempt to establish a comprehension of how the laboratories came into being and how I see my development, attitude, and methodology as a designer and a maker in relation to the undertaken research. (This icon appears in the margin to signal a cross-reference).

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The laboratory of The Bre[a]king Making Chair aims to explore the objects as extensions and indications of our bodies and what constitutes Western sitting and the chair from the aspects of statements of objecticity, sensomobility and textuality: how does makings activate object, body and language?

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To Sit

Support and Non-support

Observation and Continuations

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In *On-Bamboo*, a **making of a making of makers of makings** I sought to expand my understanding on the research questions: *Through which statements is the designer communicating with the team of makers?* And, *how can full-scale—one-to-one—makings operate as a pedagogical tool?*

This laboratory is a series of different instances in my teaching where I have focused on the aspects of craft in a wide definition of the word. Craftsmanship is the skill required to plan, make, or execute, and it is also the idea of how the labor, the very act of **making**, is becoming a vehicle for research in itself.
The designer is a student of social transformations. Together with students from a number of schools, I have conducted a series of explorations with an anthropological view on **makings**, through studies of the interplay among sensomobility, objecticity, and textuality.

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About half way through my PhD process I started *The Sports Jacket*, a Design Laboratory conducted in the discipline of Fashion Design, in order to see if my understanding, my tools and my process of *making* would still be valid in a discipline unfamiliar to me.

*The Piecemeal Meal* takes its departure point from the relationship among serving tools, recipes, foodstuffs, cooking techniques, sitting posteriors, and etiquette. In this exploration, we will indeed find rich evidence of the plastic symbiotic characteristics of *makings of makings* studied in other laboratories.
Platà Bar explores the aspects of the designer as a craftsman; and the designer as an anthropologist with license to change: the lab scrutinizes the design narrative and the didactic design team. Given that this work acknowledges design as research in its own right, these design methodologies are also seen as research methodologies.

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Foreword

This research focuses on the act of making, based on, and conducted through, parts of my design praxis. In this I have primarily been interested in two interrelated aspects: the designer as an anthropologist—design as the knowledge of societies; and the designer as a craftsman—design as the knowledge of how to put things together. I understand both of these activities as instances—makings—where statements are produced and transmitted. My attention has been on:

- What statements are involved in the act of making?
- How and why are these statements produced?
- How and by what are these statements transmitted and maintained?
- How and why do these statements bring together object, languages, and bodies as well as activities, phenomena, and ultimately societies?

As a practical underlay for the research, I have created and framed eight different design laboratories—here presented as individual works. These laboratories are instances (in my existing portfolio) where I have framed, found, and/or unearthed structures of statements; as well as new instances where I have created and transmitted statements. Common to all the design laboratories is the element of full-scale exploration in which research has been done through the very act of making rather than through merely representing or observing makings.

This research has been conducted from two ends, for convenience called practical and theoretical. Subsequently, I have created this document as two separated but interconnected publications. Similar to how the different sides of this research are seen to complement and reflect each other, the two documents seek to create an inseparable whole. They are cross-referential; in a reading of one of the documents it is the intention that the contra part serves as a reference.
The text you are now reading, *the Didactic Theater*, aims to provide an understanding of how I see my praxis in relation to, and through, the design laboratories. The text is produced in order to serve as a catalogue for my PhD Exhibition, *the Didactic Theater*, to be held simultaneously in Doha, Qatar and Melbourne, Australia in April 2012. The eight laboratories are here presented as individual works and the text is subsequently a folio of nine parts with one essay for each of the eight laboratories, plus the short introductory essay, *In the Laboratory*.

*In the Laboratory* is an introspective attempt to establish a comprehension of how the laboratories came into being and how I see my development, attitude, and methodology as a designer and a maker in relation to the undertaken research.
In the Laboratory
The Laboratory

Let us start with the very locus of design, **makings of makings**, the workshop, the studio, the construction site, the factory, the atelier, the classroom, the office or the **laboratory** – the word I have used to collect my praxis. But, why **laboratory**? The term **laboratory** has come to connote a place for scientific experimentation; therefore, it might be conceived as an odd choice to describe an artistic design practice. However, the word takes its origin from medieval Latin’s **laboratorium**¹ “a place for labor or work.” My fondness for the term, consequently, springs out of its suggestion of a place for experimentation as well as a place for thinking and doing – or rather thinking by doing. The term expresses design’s inherent aspects of **anthropology** and **craftsmanship** and, therefore, illuminates my design processes as an explorative praxis.

In my opinion, it is essential to have an experimental place; this is true not only for my practice—my laboratories—but also for almost every successful design practice. The phenomenon of **makings** can, as we have uncovered, be seen as a transmission operated by physical and mental forces. The loci of the laboratories are therefore seen as physical places as well as mental constructs where **makings** happen. In his book, *The Craftsman*, sociologist, Richard Sennett, notes similarities in the attitude towards labor in such dissimilar fields as biology, carpentry, art, and design². The work of a biologist conducting experiments; a carpenter building a house; or an artist working on a composition are, of course, very different in many aspects. However, all of these trades have one thing in common—the idea that labor in itself is the vehicle for the cognitive process.

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What is then the place for my laboratories? In my praxis, I have been fortunate to have been asked to make art, design, architecture, and education, in a number of situations and institutions spread over five continents. The loci of my praxis is consequently somewhat dispersed, regarding geographic location; ethnic and linguistic situation; and my own role. At first glance, the form of my praxis varies radically from case to case, from laboratory to laboratory. This is partly true, but only partly. Makings allied with advanced equipment such as CNC routers and plasma cutters; portable sawmills, bush knives and rickety banana boats in the rainforest; sewing machines or rigid Swedish building protocol do not seem to have much in common. We could dissect the differences between all my laboratories as some of them are more than skin-deep. However, that is not what this work is about. Finding myself in these different settings, I have been positively surprised that I have been able to apply similar tools for my makings. A better way to say it is, I have found that I can use a similar theoretical framework to define the tools needed regardless of setting. However, the claim that a theory through design would transfer well from location to location should, by now, come as no surprise. A theory through design is, therefore, a theory of the manmade, regardless of where the (wo)man and the made are located. I see a similarity in how Darwin’s theory of

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3 Granberg, “The Didactic Theater, Broken Horizon.”
4 Granberg, “The Didactic Theater, On Bamboo.”
evolution applies to every part of the planet. A biologist, therefore, finds part of his knowledge applicable wherever he travels.

The eight laboratories detailed in this research can be organized according to the tiers of **making**, I have introduced in Part I\(^5\) of *Design as System of Knowledge*. The slot of the first tier is void. Since this tier is seen as **makings** all of us do daily there was little point of filling it. In the second tier, where the designer is seen as a **maker of makings**, we find four of the laboratories. Although these laboratories have an array of different and interlinked interests, they all lead back to questions of the designer as a **maker** and anthropologist. In the *Making Bra[e]king Chair*, the Western act of sitting and the interaction between object and body is explored through the design of a chair that slowly collapses under the user, to rebuild itself when not used. Similar examples of design as a controller of behavior are scrutinized in the industrial design project—*the Piecemeal Meal*—and in the interior design project—*Platå Bar*. All three of these projects also deal with social interaction. *The Sport Jacket* is an attempt to insert myself in a design context, fashion design, a field I never operated in previously.

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\(^5\) Granberg, “Design as System of Knowledge,” I, Makings of Makings:

**makings** (daily life); **makers of makings** (design); **makers of makers of makings** (design teaching); **makings of makings of makers of makings** (design schools)
In the third tier, maker of makers of makings, we come across another three laboratories, crafted from my experiences as a design teacher. Two of these laboratories the Makings of Anthropologist and the Makings of Craftsmen are based on an accumulation of teaching experiences spread over considerable time. The first type of workshop aims primarily to explore and develop the skills of the designer as a maker. Here the exercises emphasize tectonics, model-making, and design tools. The second type of workshop aims to explore and develop the skills of the designer as an anthropologist. In these workshops, the design student is asked not only to make objects, but also to understand the social implications of these objects. Furthermore, the laboratory, the Broken Horizon in Nebraska is an academic making in the scale of architecture. The theme of sitting and interaction between body and object studied in the Making Breaking Chair can be found in the laboratory where concepts of height, balance, and gravity were studied through ongoing one-to-one full-scale making. In this laboratory, the idea of the Didactic Design Team that was developed in Platå Bar and the Design Narrative was introduced in an academic setting.

Finally, On-Bamboo, in Lae, Papua New Guinea is an attempt to implement strategies, methodologies, and experiences into a larger academic context. In this laboratory, I brought together a number of makers – designers, architects, artist and students – to interact within given parameters. By bringing a group of makers into a given academic context, I sought to create an experimental infrastructure that operated within the transmissions of knowledge I have
discussed in *Design as Systems of Knowledge*. In that it became a **making of a making of makers of makings**. Albeit this laboratory was conducted in a short time span of five days at the campus of Unitech in Lae, Papu New Guinea, I do not see it as complete. The experiences drawn from this lab have generated a new and similar **making of a making of makers of makings**—*Tasmeem Hybrid Making*, an event planned to take place in Spring 2013 in Doha, Qatar.

My eight laboratories are fairly spread out geographically, socially, in size and in content. Now, one can argue that a designer that has stuck to one location longer than I have might master the design context better and, therefore, become a better designer than I am. That might be true. However, such an argument misses the point here. The idea is to examine the theoretical framework through the laboratories. For that reason I believe the diversity of loci strengthens the credibility and confirmability of this research.
As a **maker of makings**, I have become aware that I am almost always in a state of exploration, navigating carefully in foreign and exotic societies – the exotic of the daily. I am aware that I am a student and a transformer of the culture of the Other. This is true regardless of whether the Other (or the exotic) is a remote tribe, my own societies, or a single individual. As a **maker of makings**, I might serve all of these categories. As an invited visitor with a task to perform, I often find myself in a unique role, not the stranger or the tourist, but the designer, because someone believes I understand them and their needs. Therefore, I have to operate with an attitude of openness towards the daily, the mundane, the average, and the commonplace, as well as the extraordinary, the remote, and the peripheral. Consequently, the design laboratory as a locus is always an unusual place and I, as a designer, am always a foreigner. In my own praxis, I see very little different attitude to the task at hand when I, for example, help construct an Aidpost in Labu Tale⁶ or when I design the *Broken Horizon* in Linkoln⁷. The former was executed over six weeks around Christmas 2007 in the remote village of Labu Tale in Papua New Guinea. The latter was a semester project, part of my Hyde Chair of Excellence in Architecture at the University of Nebraska-Lincoln. The dense rainforest versus the open plains; a society of bush knives versus a society of CNC mills and plasma cutters; a pedestrian society versus a society of SUVs and trucks, the list can of course be made longer. These two loci cannot be more different. I do not argue that there are great differences in the outcomes between the two laboratories. Nor do I argue that it is a different experience to wake up in the rainforest of Papua New Guinea compared to waking up in a small apartment at Lincoln Mall, Nebraska. One way to view this is that the foreground differs quite radically, but the background is similar in these two **makings**. The struggle to get building material to a remote rainforest site depends on a network of actants, such as boats, hardware stores, harbors, and so on. Albeit containing different

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⁶ Granberg, “The Didactic Theater, On Bamboo.”
⁷ Granberg, “The Didactic Theater, Broken Horizon.”
items in the list of actants, the rules, or rather the rulework, of how the actants are held together are similar in the Nebraska laboratory.
Objecticity, Textuality, and Sensomobility

So let us take a look at the background, the rulework, of human making and how I relate this to my praxis. This touches directly on the above mentioned dichotomy between theoretical and practical and why I am not that quick to understand them as totally different in design operations. This is not a generic criticism of the usage of the terms. There are instances, praxes, when there is a gulf between theory and practice. I just find the separation unfortunate when describing my departure point, my praxis. This is based on the way I work. As mentioned above, I see teaching, designing, and researching as parts of the same whole. As well as that, I find the tools of design to be simultaneously theoretical and practical. Etymology, word theory, has its root in Greek theoria “contemplation, speculation, a looking at, things looked at” from theorein “to consider, speculate, look at.” The design process is governed by highly speculative visualization tools. I, the designer, am constantly looking at the world through my design. My practice is theoretical or my theory practical. I am an anthropological craftsman. This is highly evident if we follow the development of the three terms – objecticity, textuality, and sensomobility—that have become so important for my view of the world. They branch out of simple questions: what are and how are the objects, signage, and people involved in the situations for which I am designing? These are questions that I, as a designer, would ask throughout the design process. Are they theoretical or practical? Or, maybe more important, are the design tools that I develop theoretical or practical?

My interest in finding a more nuanced framework in which to understand the involvement of objects, signage, and people stemmed from an unease with the mode of the time in which I started my praxis. Time after time, I found that social constructs were just assumed to equal linguistic constructs—as if: culture is language and language is language. This tendency of linguistic determinism

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led to the renaming of the cleaning ladies in my school to “hygiene technicians.”

I found this view shallow and rather nonproductive for my work. The concepts of objecticity, textuality, and sensomobility branched from an intuitive notion in which I sought to navigate my projects in a more holistic, anthropological world. This was done before I had given the concepts names and definitive shapes. However, when I am in the position of teaching I need to clarify my position and communicate, not only that my design is working but, how and why designs work to someone else. This reasoning had to become transferable.

The second year (2001) I taught at the School of Design and Crafts in Gothenburg (HDK), we had a small introduction to design methodology for freshmen. It was a weeklong fashion project aimed at getting the group of students to know each other, rather than to penetrate some deeper knowledge. In groups of eight, the students were asked to design wearable objects that connect the wearer’s body with an urban loci. We called the project En Plats for en Hat for en Plats\(^\text{11}\) (A Place for a Hat for a Place). In order to describe my design

\(^{10}\) Ibid.

\(^{11}\) Granberg, “The Didactic Theater, The Makings of Anthropolog[y]ists.”
philosophy, I put together a quick presentation I called In Search of the Secluded Middle. For that lecture, I crafted my first attempt of a diagrammatic model, where I first used the term objecticity. The framework of this lecture was in part vaguely based on the readings of Bruno Latour in which I found support for the need of my more nuanced view. Interestingly enough, the students really went the whole nine yards with the given task and the underlying philosophy. The projects that came out of this week were great. Not only the group discussions held by the students, but also the objects produced were of very high quality. The suit that you see above was crafted to fit Fogelbergstrappan, an urban staircase close to the university building. As an object the suit asks similar questions that I have asked. This was all good, however, you never know whether students take to your teaching or if they are just good students that would do good work anyway.

You can only guess that you have produced transferable knowledge. The incident pointed at the conclusion that the concept of objecticity was actually something that was useful for someone other than me. However, some years later I received a question from a desperate ex-student. He had been working with the concept of objecticity in one of his works and he tried to locate the diagram I showed but his searches, not surprisingly, came up empty. At that time the diagram was, of course, unpublished. Since then I have had students successfully working with the three concepts and how they are interrelated. Now, as the keen reader of this work has already worked out, the work with the design laboratory Platå Bar predates the whole development of the concept of objecticity. And yet, I have in this work scrutinized this lab from this concept. This illustrates, I think with clarity that my praxis is a structure where Projects and knowledge merge in a double directed non-linear continuum.
Interobjecticity, Design as a Didactic System

A memory: Some years ago I saw a presentation given by a colleague, a well-established architect with an impressive portfolio of work. He was lecturing about the completion of a building. This particular building was a result of a huge international competition that he had won ten years earlier. As he flipped through his slides, alternating between the competition entry and the final result, he repeatedly announced how little the project had changed from the proposal to the final building.

It was as if my colleague was proud that they had not learned anything during the ten years it took to complete the building; as if every little detail was already conceived and thought through in the three months the competition took to complete; as if design is a thinking if not disconnected at least distanced from the making process. He is not alone. Throughout my career, as a student and as an architect and designer, I have met this mentality of disconnect time and time again. My colleague’s sentiment is reflected in Ayn Rand’s The Fountainhead by the self-sufficient, self-taught, architectural genius, Howard Roark: “A thought. The one thought, the single thought that created the thing and every part of it. The thought which no one can change or touch I want to design Cortlandt. I want to see it built. I want to see it built exactly as I design it.”

It is easy to perceive the designer as an autonomous force; an author that produces his opus in isolation from the world, in solitude in the proverbial cave; or, in the word of architect Bjarke Ingels, “a misunderstood genius frustrated that the world doesn’t fit in with his or her ideas.” The designer as an autonomous force and design thinking disconnected from the making has been communicated to us thorough myths and sagas since the Renaissance. This image positions itself well with the principle of Western discourse of higher thinking, the pervading idea of Descartes’ Meditation whereas thinking is an act disconnected from body, disconnected from senses; separation between thinking and making; ideas and realizations; and theory and practice.

12 Rand, The Fountainhead, 606.
13 “Bjarke Ingels: 3 Warp-speed Architecture Tales | Video on TED.com.”
This compartmentalization is precarious for how we perceive the design process; in respect of the designer as the anthropologist as well as the designer as the craftsman. In the series of laboratories, the focus has been to develop methods and tools for a more inclusive understanding of the design process and makings of makings. Once again the genesis for this interest is not a big eureka moment, but a slow and somewhat painful process of realization. My introduction to the trade was somewhat crooked. An ambition to become the next Lavoisier led me into chemistry. As I remember, I was quite happy within this trade. I got my first longer term employment with Supra, an industry that produces fertilizer. With this contract ending a couple of months short of my departure of a long-planned trip to the Far East, I anticipated a long and restful summer. This idea did not sound too fantastic in my father’s ears. He swiftly hooked me up on an internship with the architectural firm AKI Arkitekter, and hooked I was. I have completely forgotten what I really did the first weeks; I guess it was rather demeaning tasks. I just remember how quickly and how deeply I got swallowed up in simple tasks such as manual drafting. I had to be reminded to take breaks. Upon returning from the trip, I switch my career and took the required coursework in construction engineering, simultaneously as I was working in different architecture offices in my region.

My first experience of the gap in the design process was a rather small incident. I had produced a series of construction documents for a small clubhouse. The building was on the way to one of my favorite lunch restaurants, so I drove by the site quite frequently. One day I spotted a glitch between the drawings and the construction going up. The angle of a small protruding roof was a bit off. Although it was not my design, I thought I had to act on this; however, when I tried to speak about it with the foreman he quite bluntly told me that it was none of my business and there was nothing wrong with his ability to read drawings. Sure enough in a couple of days the architect got a call from the same foreman claiming that our measurements were off; they could not fit the delivered windows. At the time I banked this incident on my own inexperience; maybe I had rubbed the guy the wrong way.
However, later I have come to realize that incidents like this are more a rule than an exception in contemporary design processes. The designer was not to be directly present in the very act of the **making**. The designer was to communicate by means of drawings and was only called in to a few production meetings. The action on the construction site was all off limits. This points us to an over-belief in *textuality* as the channel for horizontal communication of the process. This was made clear in most of the tender processes I was involved with in my first years of graduation from architecture school. The hierarchy of relevance was regularly done on a sliding scale in which the more objecticity the less importance is given. Written documents trump drawings. Models and mockups were almost never considered of any importance whatsoever. The glitch seems to be bigger the larger the scale and the longer the time interval in which the designer is working.

My early praxis had its culmination in a student housing project in Linkoping, Sweden. This project had been a great opportunity for the involved *actants* to collaborate around a quite unique program; something that unfortunately never
materialized. We were to reuse onsite-cast concrete slabs, windows, bricks, fittings, and floors from a demolition site in another city 30 km away – a pilot project. It was, however, quite clear from the get-go that the contractor viewed this as just another run of the mill project. The experimental attitude that a project like this should, preferably, be run by was nowhere to be found. This might sound as the designer responding as a misunderstood genius frustrated that the world doesn’t fit in with his or her ideas. Such criticism has some value. The contract did not indicate that this process would be different from the norm. The frustration, therefore, sprung out of a naïve notion that all the actants in the network would mobilize around self-explanatory, but unspoken, common goals of sustainability. Quite the opposite happened. Instead of seeing this as a great opportunity to expand their knowledge and invest accordingly, the builders barricaded themselves firmly in their safety zone. Idea after idea was rejected on the basis that they never had done anything like it before and that it therefore could not be calculated according to a fixed price list which was the case for almost every phase of the project. Until that date nobody in Sweden had undertaken a project where onsite concrete structures were chopped-up into pieces and put together again.

The contract was written with an attempt to let the knowledge of the contractor permeate the design process. Our client hoped that the undertaking itself would bring out experimental and sustainable thinking. But in meeting after meeting, these concepts were slowly and methodically butchered. To both mine and the client’s frustration, we did not master the bureaucratic game as well as the contractor. The written text trumped the drawings and models. The contractor held all the trumps and was using all contractual loopholes available to, little by little, pick the project apart to an almost unrecognizable state. This was unfortunate for two major aspects – the final transmission, and the non-existing knowledge feedback. We can see the problem in the double axes diagram developed in Investigation. The object, in this case a house for students, is transmitted, translated (makings of makings) in the vertical axis.

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However, any process of making utilizes a whole array of actants; technology and techniques; and intertextualities and interobjecticities. In any given time of the Students Housing process there was very little feedback in the horizontal directions. I never did, nor did the client, understand the *whys* the contractor called upon to justify decisions in the process. The flow of knowledge from the designer, client, builder, and third parties, for example students, were severely hamstrung. The process was rather based around a series of *take it or leave it* decisions often justified by *matter of fact* than a dialogue between the actants. The very contract which was written to create an openness of ideas lead to a closed-off and disrespectful climate between the *knowledge* of the participating actants. I came out of this process without learning anything from the contractor—*what a pity.*

The sustainable aspects were also soon out the window. During one meeting the contractor asked: *Is it really necessary to have direct daylight in the corridors? We already have electric light!*

The cheaper solution for the roof construction, he

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15 I never understood if this question was serious or if it was a bad joke utter in an already infected debate.
had argued and won in the previous meeting, made the proposed skylight costly and building a wall came with a cheaper price tag than the proposed reuse of windows in the corridors. Now from this story you might think that I argue that the contractor was malevolent. *That is not my argument at all.* It is, rather, that the rulework and the network were wrongly arranged, permitting very little of objectivitive and didactic overlapping. The contractor just acted from his position in the network. In this respect, *Housing Students* was not different from many of the other projects I was involved with up until that point. Fortunately for me, my situation as a designer radically changed after the project was done. A change of work environment led me into exhibition design, and it was in my work at *Eckerud Exhibits* that I had the opportunity to access and develop some of the ideas and design tools around which I now build my praxis.

Years later in the work with *Platå Bar*, I almost accidently was given the opening to alter the design process to better promote knowledge flow in the horizontal axis of the diagram. In the high-speed process of *Platå Bar*, I was no longer working within the rigid structure of the Swedish building protocol, but rather with exhibition and boat builders. The short timeline, brave clients, and some of the best foremen and craftsmen I have worked with, let us develop a didactic structure where the design and the production came together. It was not unusual during the 80 days of this *design build* project that I would get a knock on my door (we established a design office onsite, situated where the V.I.P lounge is now located) or a telephone call from one of the carpenters who wanted to have me come down to the site and discuss what he was working with. In most of these discussions, new ways and ideas were tested and the design was often strengthened. This social pattern is miles away from the incident with the clubhouse roof structure. As a designer, I found these discussions crucial for the high quality of *Platå*. The communication channels in the *Platå* were based on a mix of drawings, quick hand-sketched models, full-scale prototypes and some, often to the great amusement of the involved craftsmen, hands-on actions of the designer.
Once again the knowledge made from Platå did not emerge out of a premeditated strategy; it was rather a series of happy accidents—a double directed non-linear continuum. As an experimental laboratory, Platå thus served well. I could bring the findings from Platå into other projects at the time, such as the 20,000 square meter office complex for my former employer, Eckerud’s exhibits.

Figure 16. Platå Bar, Linkoping, Sweden.
Later, when I was asked by the University of Nebraska-Lincoln to form a research project for my Hyde Chair of Excellence in Architecture\textsuperscript{16} the strategy was transferred to the small-scale sculptural, architectural design laboratory, (The Pavilion of) the Broken Horizon. In spite of this lab’s name, the horizontal communication therein was seen almost only through the channel of interobjectivity.

In about 120 days, 13 students, local fabricators, the school’s woodshop, its newly purchased CNC mill, and I came together, forming a design network based on the insights drawn from Platâ. (I am including inanimate objects in the list on the basis that they also are actants working with or against the common goal.) I have later called this strategy, Didactic Design Team. As a methodology, it is not much different from the structure I applied when I composed and played music or when I coached football. In the making of a song, I would bring in lyrics, melody, and maybe a guitar riff or a baseline. The final arrangement and delivery is then molded in an improvisational way where ideas are tested live. This is similar to how I seek to form a strategy in a football team. As a coach, you have to trust the player on the field to act within the system provided. Didactic Design Team was further developed in the On-Bamboo conference where eleven design laboratories explored the qualities of

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\includegraphics[width=\textwidth]{images/figure17.png}
\caption{The Broken Horizon, Lincoln, Nebraska.}
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\includegraphics[width=\textwidth]{images/figure18.png}
\caption{The Broken Horizon, Lincoln, Nebraska.}
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\includegraphics[width=\textwidth]{images/figure19.png}
\caption{The Broken Horizon, Lincoln, Nebraska.}
\end{figure}

\textsuperscript{16} “UNL | College of Architecture | People.” From UNL webpage: “Hyde Chair of Excellence is available to creative architects, designers, and educators from a variety of backgrounds with unique credentials. The visiting Hyde Chair attracts emerging voices in architecture from both practice and teaching. Former Hyde Chairs include Wolf Prix, Michael Sorkin, Diane Lewis, Randy Brown, Paul Preissner, Doug Jackson and Chris Abel.”
bamboo. Each project was led by an international architect or designer in collaboration with 200 Unitech students—and bush-knives. Furthermore, I am currently trying to implement this in the Spring 2013 Conference Tasmeem—Hybrid Making in Doha, Qatar. Some designers believe that the strategy of the Didactic Design Team causes the designer to lose control over his/her projects. I have found the opposite effect. By opening the horizontal channels, I usually feel more in control of the final object. To just make representations of design is not to make design.

I hope this attitude is apparent in the portfolio of work that now follows—my laboratories.
Bibliography


———. “The Didactic Theater, Broken Horizon”, n.d.


The Bre[a]king Making Chair
To Restory

My body is everywhere: the bomb that destroys my house also damages my body in so far the house was already an indication of my body. This is why the body always extends across the tool which it utilizes: it is at the end of the cane on which I lean and against the earth; it is at the end of the telescope which shows me the stars; it is on the chair, in the whole house; for it is my adaption to these tools. (Sartre, *Being and Nothingness*, 325.)

"How sad it is!" murmured Dorian Gray with his eyes still fixed upon his own portrait. "How sad it is! I shall grow old, and horrible, and dreadful. But this picture will remain always young. It will never be older than this particular day of June. . . . If it were only the other way! If it were I who was to be always young, and the picture that was to grow old! For that--for that--I would give everything! Yes, there is nothing in the whole world I would not give! I would give my soul for that!" (Wilde, *The Picture of Dorian Gray* - Oscar Wilde, 57.)

The Laboratory of *The Bre[a]king Making Chair* aims to explore the objects as extensions and indications of our body so well expressed in Jean Paul Sartre’s “my body is everywhere” and in Oscar Wilde’s *Picture of Dorian Gray*. The laboratory, furthermore, aims to understand what constitutes Western sitting and the chair from the aspects of statements of *objecticity, sensomobility* and *textuality*: how does *makings* activate object, body and language?

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The Bre[ə]king Making Chair researches the act of (non-)sitting in Western culture by direct objectivitive to sensomobilitive linkages. What if the chair acts like the body, its host? What if the chair takes on the pain of the body, the injuries of the body, the aging of the body, as Dorian’s portrait did? What if the chair can be damaged as the body can? Well this chair can. The Bre[ə]king Making Chair is a common office chair – divided, pulled apart and put together again – restroyed. This laboratory deconstructs the chair – literally deconstructs the chair. This frankensteinied chair reacts to the act of sitting. It gradually falls apart underneath the sitting body to restore itself when left alone.
To Sit

Few things encapsulate Western society as much as the chair. We work, meet, eat, drive and view entertainment in various chairs. This elevated status of the chair is observable in language as, for example, the chair of a department or a committee and the cathedral (from Greek, kathedra, “seat”) of the Roman Catholic Church – the chair of a bishop. Therefore, one might think that chair-sitting is a completely natural behavior, that sitting as we do springs solely out of a bodily function, a sensomobility, and that the chair is shaped simply based on how the body wants to sit and how the body is constructed to be seated. However, the cultural act of chair sitting is not a one-directional process where a genetic sensomobility generates objecticity. We have to remember that the way to sit is just one of a number of ways to rest the legs, yet still be active with the upper body. The Etruscans and the Romans liked to position themselves half lying in situations where we naturally would sit in a chair (see Figure 3). The Chinese and Japanese sit in the lotus position. Indians, Africans and Melanesians can squat for hours, a position that only a few Westerners can maintain for a short duration of time. This has very little to do with genetic differences in the bodies. We have to learn to sit, and by doing so, the body is molded – a physiognomic sensomobility is made or activated. How is this happening?
Anybody who has spent any time with children can attest that they are not natural chair-sitters; toddlers can’t sit at all but are seated through the highchair. A childhood in a Western setting can be thought of as a chair-sitting-school. I remember the tug-of-war from my childhood between me and the grownups:

“Sit properly!”
“Think of your posture!”
“Don’t lean on your chair!”

To learn to sit “properly” is a mental process as well as a physiological process. The chair sitting senomobility can be seen as generated by two forces or through two different media: textualitive (excorporation) and objecticitive (incorporation). The first is manifested in statements such as the above-
mentioned chair-sitting-school; the latter is manifested by objecticity of chairs. As in Salvator Dali’s *The Enigma of Wilhelm Tell,* the worlds of object and body cannot be understood separately. The act of sitting changes the body. The configuration of muscles, blood vessels, ligaments and joints develops according to the different sitting postures. In the West this process is dependent on our world of chairs. Highchairs, office chairs, dining chairs, wheelchairs—they all teach us how to sit.

The process in which the chair alters the body is slow, gradual and extremely strenuous. The training to sit takes a lot of effort. This effort is, however, quickly forgotten. One day we can just sit properly, and by then we are under the assumption that sitting in a chair is an absolutely natural behavior and every other form of sitting is not. This bodily transformation does not only happen on the level of the individual but also on the level of the society. When the society becomes a multi-entangled, codependent system of muscles, blood vessels, ligaments, joints, chairs, tables, furniture makers, etc., we can understand the chair and its rulework as dominant. It is true that on an individual level we can rebel. We can re-train, reshape our bodies to sit in other positions (lotus, squat, etc.). We can use other types of sitting tools, such as *My Trousers,* (figure 5) or *Balans* (figure 4). The individual rebel has, however, to

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2Ibid., I, *Making is Knowledge.*
capitulate to the plentitude and the social viscosity\(^3\) of what cultural act chairs bring; we have to capitulate to the plentitude of chair sitting hybrids (half-man/half-chair). There are simply too many situations where the society of chairs would not accept rebellious cultural acts: meetings, car driving and air traveling, to mention a few. The latter act is further reinforced by the fact that an aircraft would not take off until all passengers put the chair in upright position (Is the upright position really going to save us from a crash?), and fasten the seatbelt (a belt that enforces seating), i.e., fully accept the sensomobility of takeoff. Daily, we are asked to accept chair-sitting for hours on end as a natural state of society. Our long training makes this acceptance seem totally effortless. However, there is a discrepancy between the mental effortlessness and the bodily effort in the act. We know that too much sitting is not good for us. It creates back and neck problems. It is in the sensomobilitiv-e discrepancy we find the niche for the Bre[a]king Making Chair.

\(^3\)Ibid., II, The Ghost of Numbers.
The question, *Why have the chair and sitting on chairs gained dominance in Western society?* has not been of interest in the laboratory. What is of interest has been not to completely *replace* the social making, but to *alter* it from within. The *Bre[a]king Making Chair* is, on one hand, very much an ordinary office chair, and, as such, it attaches itself to the world of the half-man/half-chair hybrids. On the other hand, *The Bre[a]king Making Chair* is a non-chair, an anti-chair. By our fully transforming the sensomobility effort of sitting to an objecticity effort, the chair gradually falls apart, gets tired, ages. Before tired bones, comes the tired chair. As in *The Picture of Dorian Gray*, it takes on the decaying of the body. But, by doing so, it implies a new action of the body: to take a rest from sitting. This new action could, of course, have been achieved by means of a textualitive *statement*—*excorporation*; i.e., we could have messages posted in the vicinity of every chair, such as *don’t sit more than 20 minutes, thank you!* We do this with other acts we want to transform, such as smoking, loitering or rollerblading. In this case, however, this type of linguistic statement is not enough. We are fully aware that sitting for hours is not good for us; a simple signage reminder is just marginally going to help us change a behavior; just as the warning sign on a package of cigarettes doesn’t prevent the addictive smoker from smoking, it is not going to prevent the addictive sitter from sitting. The transmission of *The Bre[a]king Making Chair* is primarily a direct and mechanical statement. By this direct linkage the illusion of effortlessness is scrutinized. As the chair gets tired, it imposes an action of the body similar to a submission hold in martial arts that imposes an action on the body. When the support for sitting is gone, we simply have to change behavior. We make our objects, and our objects make us.
Figure 9.
Martial arts takedown in the dojo of Shito-Ryu Karate-Do Genbukai, Qatar.

Figure 10.
The original Verner Panton *PantoMove-2K Chair*.

Figure 11.
Prototyping *The Bre[a]king Making Chair*.

Figure 12.
Testing movement of the chair.
Support and Non-support

Figure 13. Lik-lik John (Little John) is sitting on a rock drying himself in the sun, Buskap Village, Marobe Province of Papua New Guinea.
A memory: It is late afternoon, and Lik-lik John (Little John) is sitting on a rock drying after a good one and a half hours of intensive play in the waterfall by the village. John is from Buskap Village in the Marobe Province of Papua New Guinea. I watch Lik-lik John sit in the same squatting position for a good 20 minutes. When I am trying, I can hardly do it at all. I am from a world of sitting on chairs, whereas John is from a world of squatting.

In a workshop done in the foundation level at VCU Richmond, Matt King asked his students to capture and make body configurations from famous 20th century still photos. In the photos shown in Figures 12 and 13 we see a frozen moment in an explosion (Hiroshima). The scaffolds are supporting/forcing bodies into tormenting positions. Here the image or the textuality of bodily positions has become a play between the objecticity of the scaffolding and the sensomobility of the bodies. The bodies here are propped up as infants in highchairs. The highchair is a simple contraption that seats babies. Infants can’t sit on their own; their motor skills have not been developed, and yet, placed in a highchair, the baby sits as if it were the most natural thing in the world. The knowledge and transmission of sitting is all imbedded in the object. The statement of a parent is thus transmitted by the chair, and that transmission operates through objecticity to sensomobility. We cannot explain the action of the baby as intentional, nor can we point to any transmission of signs that activates the child’s behavior. The chair does not stand for sitting: it carries sitting, and a parent transmits the sitting. The child simply sits due to the highchair’s objecticity.
This is similar to how the body of Salvador Dali’s Wilhelm Tell is kept upright in Figure 14. We are not sure if the man needs support because he has a big hat or if he has a big hat because he has support; if the man needs a support because he has a large ass or whether he grew a large ass because he has a support. If we ignore the question of why this interdependency came about and focus on the how of the symbiotic system of support and body, we can rest assured of one thing: without support, the man’s hat and his ass would collapse; without the hat and the ass, the support is useless. As in the VCU workshop shown in Figures 12 and 13, the child in the highchair, and in Dali’s painting, we cannot separate the object and the body, nor can we separate the objects (the hat) from the object (the support).
If we ignore the questions of *why* we sit and concentrate on the mechanic/physiognomic questions of *how* we sit, it is easy to understand the chair as merely an imprint of the body. For example, the Swedish furniture designer Bruno Mathsson (his chair *Eva* appears in Figure 15 above) is said to have sat in snow to measure the imprint,\(^4\) to understand the most optimal human curvature in order to design an optimal chair. *My body is everywhere.* The idea of the support as an imprint of the body also manifests itself linguistically. *Legs, seat* and *back* are all applicable terminology on the chair and on the body. Kristin Bille plays with this concept in her *La Revolución* (Figure 16), where a chair has been to a tattoo parlor down at the docks and has gotten itself a nice tattoo on the back. The body is projected into the support.

\(^4\)“Bruno Mathsson: Practical And Elegant Furniture Designs.”
The exploration of interplay between support and non-support in *The Breaking Making Chair* gave me an opportunity to further test how statements can be produced in the connections between bodies and objects. As with an imprint in the snow, the relationship between support and body is understood as a relationship of shapes. In the laboratory I wanted to go beyond this direct analogy. If the chair is supposed to *get tired*, would it not also start to act similarly to a body in a physical sense? The relation between the scaffolding and body would be a relationship of form as well as of functions and movements. From that standpoint, studies of the inner mechanics of the body, muscles and skeleton became the underlay for the process; the mechanics of the chair can be understood as being similar to the mechanics of the body. The chair was given a spine and a whole supporting muscular structure.

It is by manipulation of that spine the statements are **made**. When the chair “gets tired” it slowly collapses the support of sitting and gradually transfers it from the object to the body, until the chair no longer gives any support. By
that, the user of the chair is forced to carry his own weight and keep his own balance. Most likely, this would result in the action of standing up. Thereby, we can understand this as an objectivitive transmission of the statement, stand up! This is similar to how an attached weight on a hotel key transmits the objectivitive statement of return the key to the reception.\textsuperscript{5} The difference between these two statements is that the first is a construct of an act of subtraction: the support of the chair is removed objectivity, and the second is an additional act: the weight of the key is added.

Design, the \textbf{makings of makings}, weaves together stories, design narrative,\textsuperscript{6} of topographical, cultural, technological, aesthetic, and ethical phenomena. In order to construct design narrative, the designer has to develop understandings for how statements are carried. More often, the designer has more than one channel of transmission at his disposal. In the straightforward design narrative of the Bre[a]king Making Chair, we have already seen two different methods of transmissions: the posted messages, don’t sit more than 20 minutes, thank you! (textuality) and the breaking down spine (objectivity). These two statements can, of course, be superimposed.

\textsuperscript{5}Granberg, “Design as System of Knowledge,” I, A Key to Understanding.
\textsuperscript{6}Ibid., II, Design Narrative.
Furthermore, the breaking down of the chair highlights important aspects of the structure involved in **making of the sitting body**. When Lik-lik John is squatting, he is doing that without any external support. In fact, we can understand his whole body as a minimal tool for sitting; however, as a physiognomical, sensomobilitive process, it is far from minimal. There is pressure on the joints and muscles that fight gravity. For a non-squatter, such as me, the effort of the act is obvious. To sit and do nothing is oddly an effortful task, an effort that requires training, shaping of the body. This can be said regardless of which sitting position we select, lotus, half-lying, squatting, low sitting or high sitting. We have to **make** the body into a sitting body. The breakdown of the support challenges the Western-made body; it underscores the effort of sitting, **makes** it aware of the effort of sitting. This awareness is the transmitted statement. Subsequently, we can magnify the transmission by **making** the awareness even stronger, by making the statement more urgent.

So, how could we amplify the transmission in *The Bre[a]king Making Chair*? We have already talked about the superimposing of different statements. A sign and an object can operate together, such as, for example, a speed bump and a traffic sign. But we can also heighten the intensity of the same statement. A relationship between body and object can be seen as positive as well as negative. I found that the emergency of the statement can be heightened by adapting a similar strategy, such as a submission hold of martial arts. A student of martial arts explores the human body’s mechanical weak points. The idea of a submission hold is for one body to, through minimum effort, impose an action on another body – a statement transmitted as sensomobility. Awareness can be activated through discomfort, pain. By turning the spine just a little too

![Figure 28-29.](image)  
Prototyping pain; by twisting the spine, the chair amplifies the statement of unease.
much or twisting the seat in an odd angle, the urgency of the statement is magnified.

The transmission through the removal of support was a subtractive act of objecticity; however, the movement of the chair starts to create discomfort, and the transmission becomes additive, similar to the way the hotel key or a speed bump operates. The work with the chair, consequently, also becomes an exploration of pain in objects, an exploration that by necessity has to understand the textuality of the \textit{making}. Although the transmission was created as an act of objecticity, it easily shifts channels when we start to understand the object as a carrier of pain. This discomfort and pain can be seen projected through textuality. Elaine Scarry states:

\begin{quote}
The mental habit of recognizing pain in the weapon (despite the fact that an inanimate object cannot “have pain” or any other sentient experience) is both an ancient and an enduring one. Thus Homer speaks of an arrow “freighted with dark pains,” as though the heavy hurt the arrow will cause is already visibly contained in and carried by the object – is palpably there as its weight and cargo. Margery Kempe, the fourteenth century mystic, speaks of a “boisterous nail,” as though not only the pain that can be produced by the nail but the noises and cries in turn produced by the person in pain was already audible in the nail itself. (Scarry, \textit{The Body in Pain}, 16.)
\end{quote}

We can find some examples of chairs that carry pain. For example, maybe it is a mere coincidence that the first electric chair is credited to Dr. Alfred P. Southwick (1826–1898), a dentist; however, both the dentist and the electric chair are indeed objects associated with pain. As Scarry points out, we give objects responsibilities and attributes for the actions they are involved with. Therefore, one of the challenges in the laboratory was the \textit{textualitative} (textualitive?) destruction of the \textit{chair}. As \textit{The Bre[a]king Making Chair} goes from the chair to a non-chair, \textit{the same object has to alter the statement between comfort and discomfort}. \textit{The Bre[a]king Making Chair} thereby operates in both an objecticitive and a textualitive mood. With the deconstruction of the object as a sitting tool,
it also deconstructs the sign of sitting. When in the breaking mode, it is really prohibiting sitting in it as a corporeally transmitted act. It goes from the statement of *this is a Chair* to *this is not a Chair*. Furthermore, these two statements can be thought of as a simultaneous sending in two different channels—textuality and objecticity. Or, as the cognitive biologist, Daniel Povinelli, argues: “[H]umans may have been left in the philosophically awkward position of having multi psychological causes for the same behavior.”

In this duality I found some problematics of the lab. To explain this, let me go through some other instances where we have duality in the transmission.

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Magritte’s *Ceci n’est Pas une Pipe,* “This is not a Pipe,” is, of course, a play on the duality between the iconic presentation of the image and the symbolic presentation of the text. This play on duality is taken even further in the *Broken Chair* by the Swiss artist, Daniel Berset. Whereas *Ceci n’est pas une pipe* operates in primarily a textualitativ mood, the *Broken Chair* researches at the border between objecticity and textuality. Artifacts must be understood as both objects and language in that an object simply represents itself. Billy Collins notices with nostalgia in the poem, “The Chairs That No One Sits In,” (see Figure 35) that abandoned chairs in decay still “deserve” to be sat in. But, there is going to be a point in time when the breakdown, distortion, of the abandoned chair prohibits sitting in it; when all the objecticity is gone, and a point when all the textuality is gone. As there is, due to the scale, very little sitting left in Swiss artist Daniel Berset’s chair, it is merely a textuality of a chair left here. The decay and reconstruction of chairness of “The Robotic Chair” by Max Dean, Raffaello D’Andrea, and Matt Donovan can only be seen as

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*Povinelli, Folk Physics for Apes, 65.*
operating in textuality. This chair was never meant to sit in from the beginning. Its deconstruction and the reconstruction are matters of textuality; the objecticity does not translate into the cultural act of sitting. Similar to how distorted Magritte’s image of a pipe is, the act of smoking would not be translated in so far that it never was an act of smoking.

An observation made in the laboratory was that it is easy to destroy both the objecticity and the textuality in the breaking mood. However, in the making mood—that occurs when the chair has gotten enough rest—the reverse was not as simply executed. That object might be easily restored from this is not a Chair to this is a Chair; however, the restoration of the sign this is not a Chair to this is a Chair bids some resistance. I think the reason for this is that we are reluctant to trust something that just broke under us and that might have caused us pain. That the prototype of The Bre[a]king Making Chair in the end—by a thorough cleaner—was trashed by mistake is an ironic but understandable outcome of this laboratory. In the cleaner’s mind the chair was simply not a chair—fail to understand textualitive statements involved in the making, and the language will hit you like a ton of bricks.
The Chairs That No One Sits In

You see them on porches and on lawns /down by the lakeside, usually arranged in pairs implying a couple

who might sit there and look out /at the water or the big shade trees. The trouble is you never see anyone

sitting in these forlorn chairs /though at one time it must have seemed a good place to stop and do nothing for a while.

Sometimes there is a little table /between the chairs where no one is resting a glass or placing a book facedown.

It might be none of my business, /but it might be a good idea one day for everyone who placed those vacant chairs

on a veranda or a dock to sit down in them /for the sake of remembering whatever it was they thought deserved

to be viewed from two chairs /side by side with a table in between. The clouds are high and massive that day.

The woman looks up from her book. /The man takes a sip of his drink. Then there is nothing but the sound of their looking,

the lapping of lake water, and a call of one bird /then another, cries of joy or warning — /it passes the time to wonder which.

(Collins, Horoscopes for the Dead Publisher, 46.)
Observation and Continuations

The Bre[a]king Making Chair served as a good laboratory for an exploration of how making activates object, body and language. In many aspects this was a continuum from the explorations of human seating in the laboratory of the Broken Horizon. However, in The Bre[a]king Making Chair the exploration had a more individual focus. It was one chair and one body. As such, the two laboratories complement each other. Furthermore, I was able to transfer the experiences done in the laboratory directly into my role as an educator through the project Destroy the Chair that was introduced as a part of the furniture design class at VCUQatar in the Spring of 2011. Here we see a direct, nonlinear continuum of the praxis and the knowledge of design. In addition, the collaboration with Della Reams in the process led to valuable insights into fashion and fabric design. These insights were further developed in the laboratory The Sports Jacket and in some combined pieces of furniture in which we tried to incorporate tools from both product and fashion design into the process. As an exploration, the lab continues and a Bre[a]king Making Chair 2.0 is under construction. The loss of the original chair was, of course, a drawback; however, the intention is to develop the new chair with sensors and motors so it interactively reacts to the sitting body.

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8 Granberg, “The Didactic Theater, The Makings of Crafts(men).”
9 Granberg, “The Didactic Theater, In the Laboratory.”

———. “The Didactic Theater, In the Laboratory,” n.d.


Cargo

If you were to ask a Swede or an American the question, what is the first tool you would buy when putting together a toolbox, you would probably get a series of different answers: hammer, pliers, screwdrivers, etc. If you asked the same question to my students at the University of Technology in Papua New Guinea (Unitech), an overwhelming majority would give the same answer—the bush-knife. The bush-knife, or the machete as it is more commonly named in the rest of the world, is a universal tool in Papua New Guinea; it is used for everything and anything. It is used to hammer, cut, slash, screw, and pinch. It is used for slaughtering animals, cooking, and eating; cutting down trees and building houses. It is used when repairing shoes and when repairing cars. I experienced the latter first-hand when a usually reliable Mitsubishi Pajero four-wheel drive vehicle broke down on a mountain road between Lea and Madang. What are the chances that the two first vehicles that stopped would each be carrying a mechanic; that these two mechanics without knowing each other would start to work as a team, repairing the car using spare parts harvested from the car itself; and in the end would not charge anything for the work? Well all of that happened and the main tool used in this operation was the bush-knife.

Jared Diamond’s Guns, Germs, and Steel first starts with a question from the Papua New Guinean politician Yali: “Why do white people have so much cargo, but we New Guineans have so little?”1 “Cargo” in tok pisin denotes inventions and manufactured goods. I came to Papua New Guinea with Yali’s question fresh in mind. During one of the first weeks, I was sitting at our tearoom with the rest of the faculty from Unitech, having a chat on our break and the usual issue came up — the lack of resources. With few exceptions, any school I have been to either as a student, lecturer, or faculty member, had similar debates about the lack of funds. It has to be said, if the debate was

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1 Diamond, Guns, Germs, and Steel, 14.
about monetary means Unitech’s claim was indeed valid. I have not been to a more poorly-funded design educational institution. However, as the temperature of the debate rose in the tearoom, I looked out over the gorgeous campus and I thought to myself, we have fantastic resources here, things that students and faculty would kill to have in other places.

We had:

- almost unlimited cheap material, such as exotic hard wood and bamboo.
- a craft-skilled student body. When asked how many had participated in house construction, over 33% of the students responded positively.
- a well operating master week, where general education would halt and all students, staff, and faculty would come together around one theme, one project, often led by an internationally renowned designer.
- well-functioning wood and metal shops and skillfull techicians to run them.
- a gorgeous campus that permitted large-scale designs.

With the naïve eyes of a foreigner, I saw all of this as “cargo” ready to be exported. Based on my good experience with the full-scale project the Broken Horizon at the University of Nebraska-Lincoln, I wrote a quick proposal. The plan was to utilize the structure of a didactic design team, developed in the Broken Horizon and Platå Bar, in a high-speed conference/workshop. The proposal was accepted by the faculty to use the next fall’s master week for a conference around the theme of bamboo—On-Bamboo.
Eleven Laboratories

The thinking was to package all of what I saw as bamboo’s qualities and resources into a five-day event. With a limited budget of approximately 5,000 US dollars, I hoped to get some of my friends and colleagues to travel to Papua New Guinea to help me run this conference. In order to lure them to Unitech, they were offered a once-in-a-lifetime-experience. I was thinking that I might be able to get two or three international artists and designers to answer the call. At that time I had no idea how easily this concept actually did export. Without any advertising, except word of mouth and a quickly assembled website, we swiftly got twelve positive responses. After that we had to close the call due to a lack of decent accommodations for our visitors at the Unitech Campus. The last designer in, Campbell Drake, was warned that he might have to sleep outside. He came anyway.

2 Three of these unfortunately had to cancel on short notice due to extenuating circumstances such as childbirth and project deadlines. The leaders of each laboratory included the following: architect/artist, John Andrews, England; architect, Campbell Drake, Australia; architecture historian, Martin Fowler, Australia; artist, Anthony Fryatt, England; architect, Rochus Hinkel, Germany; Ross McLeod, Australia; architect, Matthew Hughes, Australia; architect Luke Pendergast, Australia; Architect Roger Paulsen Canada; and interior designer, Christina Tubman, Sweden/Libera.
On-Bamboo took place from the 18-22 August 2008. It was a laboratory in which two hundred building and architecture students from all the levels of Unitech’s curriculum, together with faculty and the group of international artists, architects, and designers, explored the possibilities of bamboo’s architectonic, artistic, and structural qualities. Eleven teams worked intensely and closely to erect eleven independent bamboo structures—eleven design laboratories. On-Bamboo was thus a making of a making of makers of makings. Through this I could expand my understanding on the research question: Through which statements is the designer communicating with the team, the actants, of makers? The investigation of On-Bamboo is similar to the investigation conducted in Platà Bar. Furthermore, On-Bamboo asks a similar question as its forerunner Broken Horizon: How can full-scale—one-to-one—makings operate as a pedagogical tool? The difference between the two events is that in On-Bamboo I had an opportunity to not only explore how I would attach my teaching to such a situation, but also to learn how other educators of design would be able to utilize such a structure; i.e. I had a chance to study both students and educators interacting within the given problem. Finally, On-Bamboo raised a series of new research questions specific to the location and material.

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3 Granberg, “The Didactic Theater, Platà Bar.”
4 Granberg, “The Didactic Theater, Broken Horizon.”
Bamboo is an interesting material for a number of reasons. With a growth rate of up to three to four feet per day, bamboo is one of the fastest growing plants on the planet. Its structural and aesthetic qualities also make bamboo a material of great interest for sustainable solutions for the future. Bamboo is native to Papua New Guinea and is important in vernacular architecture. With this extensive tradition as a platform, On-Bamboo was to explore new and innovative uses for the material. The Melanesian students’ vast experience and knowledge of bamboo, tool usage, and their connection with traditional and tribal customs were thus combined with the design expertise brought in by the international Laboratory leaders to provide a rich exchange of ideas. Lastly, bamboo is an excellent sketching material that, if you know how to do it, cuts easily. Therefore, it is easy to construct multi-sensory design narrative. The final built result was regarded as a three-dimensional conference paper. The Laboratory thereby provoked novel bamboo use and exposed the potential of the coming together of traditional knowledge and a modern sensibility in creating a positive and viable outcome.

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Figure 8.
As the constructions went up so did the designers, Campbell Drake’s laboratory.

Figure 9.
As the constructions went up so did the designers, Anthony Fryatt’s laboratory.

Figure 10.
As the constructions went up so did the designers, Johan Granberg’s laboratory.

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As I am writing this last paragraph, copying, pasting, de- and reconstructing text from exhibitions, proposals, and webpages, I realize how little this dry, academic wording accurately captures what actually took place at Unitech that rainy week in August 2008. It is hard to convey the absolute blast of cultural and collegial collaboration, interchanges, and teamwork with words. Even the printed images seem to have difficulty communicating the event.

There were performances of traditional dance and music, as well as the ongoing racket of sounds from the experiments of the group led by Ross Mcleod. There were students and structures climbing high trees. There were the glorious failures where ideas and concepts proved to be over ambitious,
unrealistic, too time consuming, or just pure bad. There were subtle experiments of material usage, understanding of measurements and structural qualities. There were the arguments, the hard work, and the passion; and the authorized and unauthorized *borrowing* of material and tools between groups. There were the highly anticipated deliveries of bamboo loads coming in from the harvest site. There were the intense group discussions, the dining lecture gatherings, and the informal meetings between students and designers. And, there was the last night’s party which, in spite of a relentless rain, never seemed to stop. A party where *Manus* drums echoed through the thick *Lae* night and students, faculty, staff, and invited guests sat in small informal groups talking until the next day.

It is difficult to measure the success of design education. How does one know whether knowledge transference has taking place? How does one know whether a student has grasped the concepts or the methodology at hand? The *transferables* of design knowledge are not always easy to detect. In this case, however, I believe that the knowledge transfer was obvious, almost palpable, and it went both ways. The intense design discussions, still ongoing as night turned into morning, were a good indication of a successful transfer. I think we can trace this success to some key elements.
Probing

I have found that, whether we call them workshops or charettes, short student group-design projects usually take on similar structures. Typically, a workshop leader gives teams of students tasks or assignments to solve. Then the students are left to quickly form and define team structures and methodologies to tackle the task at hand. This form has some value. It is of significance for designers in the making to figure out methods to work, socially and psychologically, in an ever-changing group structure. By the same token, the method carries some inbuilt pedagogical difficulties. Since the social hierarchical structure is not set, there is a big initial phase of forming social structures and hierarchies within the group. Given that the students’ skills, competences, and experiences often are similar between the group members, the formation of the group sometimes overtakes the whole pedagogical interest. It is a little like how a band only composed of bass-players might have some problems creating good music. On-Bamboo, as with the Broken Horizon, builds on a different didactic structure. In the laboratories of On-Bamboo, a team of students was formed around one artistic leader. The lab leader was given ownership over the process and the outcome of the laboratory. This gives us some good didactic transference opportunities. This form brings structure, methodology, and a way to tackle the task at hand to the process already on day one. The students are invited to participate in someone else’s thinking process.
Furthermore, On-Bamboo draws on projects I had previously conducted in Papua New Guinea: Liklik Toer, Tabel Belong Pukpuk, and the Labutale Aidpost – Design Built PNG. These projects served as good probes for how to perceive makings of makings in Papua New Guinea, in Lae and at Unitech. Liklik Toer was a small garden structure I built of bamboo in my backyard garden together with sophomore. This structure, a low watch tower, became an ideal testing ground for logistics, pedagogical structures, and student skills and competencies. It was conducted as a short three-day charrette in which fourteen students were divided into four different groups in order to design and construct the entrance and the landscape, the vertical communication, the overall structure, and the viewing deck. In this task, the students not only excelled as builders, but took the design discussions to a whole different level than I have witnessed in the classroom.
The second of the probes, *Tabel Belong Pukpuk* (Spirit of the Crocodile), was an altogether different design task, a vessel for the coastal regions of Papua New Guinea. This vessel was to be used in the transportation of building materials in the upcoming project *Labu Tale Aidpost*. The boat design attempted to solve issues of coastal transportation by combining the local tradition of the Melanesian outrigger with the contemporary banana boat. The design of the boat was not really successful for its intended purpose. *Tabel Belong Pukpuk* navigated well enough; however, local anchoring and accessibility conditions in the Labu Tale village, conditions which were hard to foresee, left too many difficulties in the design unsolved in time for the *Aidpost* project. The process of this *making*, however, gave good insight into the logistics and supply system in the region. The *Tabel Belong Pukpuk* thus mobilized key actants that later were important allies to *On-Bamboo*.

In the third of the probes, *Labutale Aidpost — Design Built PNG*, students from Australia and Papua New Guinea designed and built a small medical facility in the Marobe jungle. The lower part of the village of Labu Tale is a beautiful prisoner, trapped on a narrow piece of land (30-60 meters) between the Pacific Ocean on one side and rivers, lakes, and swamp areas on the other. Not the ideal setting in a country where tsunamis, floods, and landslides are profuse. The idea was to build a small aidpost (medical clinic) on higher ground, about an hour’s walk from the beach. The aid post would then operate as a magnet,
attracting the rest of the village to safer ground. The project was initiated by two students, Kate Ferguson from Curtin University, Perth, Australia, and Rosemary Korawali from Papua New Guinea, University of Technology (Unitech). The two girls had met in a workshop arranged by Global Studio in Vancouver the previous year, and wanted to try to import the idea of student-based design building projects to Papua New Guinea. The construction and the design of this project were conducted during the time the students actually spent in the village. The logistics of this project were therefore crucial. Working as a designer in Sweden, Australia, or the United States, you get spoiled; finding appropriate materials and getting them delivered is relatively effortless. The obstacles are more often economic – the budget sets the limits. In a remote village in Papua New Guinea, on the other hand, the situation is quite different. Here, we find limited access to materials and a very different system to get anything transported. Fortunately, a good bulk of material came from the site. A portable sawmill made it possible to cut lumber directly from the rainforest trees we cut down to clear the site. Except for a couple of bad breakdowns which skewed the timeline, it worked like a charm. Furthermore, gravel and sand needed for the concrete foundation was also found locally, in a small stream. With the assistance of strong village women, these were carried to the site. The rest of the needed building materials and tools had to be brought in. In helping the students with this part, I learned a lot that was then brought into the planning of On-Bamboo.

Figure 28.
The Aidpost in Labu Tale
the opening ceremony.
As probes or pre-runners, different aspects of these three *makings* elevated the level of the outcome of *On-Bamboo*. In *Liklik Toer*, the students’ abilities and skills were put to the test as well as their motivation; *Tabel Belong Pukpuk* and the *Labutale Aidpost – Design Built PNG* mobilized many of the actants; and all three probes helped to set the contexts for *On-Bamboo*. The three probes are, of course, interesting projects in themselves and they could have been raised to the status of design laboratory in this research. However, I rather see them as a peripheral part of *On-Bamboo*. For example, with regard to the overlap between *On-Bamboo* and the probes, I can mention how the villagers from Labu Tale helped harvest cane for the workshop, and the same paint manufacturer helped by sponsoring both *Tabel Belong Pukpuk* and *On-Bamboo*. Furthermore, the two Australian architects, Matthew Hughes and Luke Pendergast, were also involved in the *Labu Tale Aidpost* and brought with them experiences of working together with the Unitech students.
On-Bamboo Picture Gallery
Figure 30.
On-Bamboo.
John Andrews
With:
Fredson Alfred
Elijah Palou
Peter Som
Lucia Kua
Samuel Ali
Jason Missian
Alex Peni
Mathew Komabo
Kunjil Doa
Nathan Nimagole
Mark Yohang
George Shim Jr.
Sibyl Mathias
Livia Wrakonei
Figure 31.
On-Bamboo.
Johan Granberg
With
Eve Sayer
Meck Yaeto
Arua Mea
Reginald Ope
Banang Dann
Cyrol Akia
Snyder Mollomb
Herman Jalmein
Israel Roy
Leslie Manua
Leshenka Laughton
John Mana
Johah Wo-otong
Alfred Kinakava
Figure 32.
On-Bamboo.
Tony Fryatt
With:
Jackson Isimel
Elliot Kadir
Poni Ume
Patrick Paobi
Indiwaw Gam
Michael Kanat
John Yisu
Mickless Gandu
Rachel Gele
Rodrick Voit
Vincet Lasuit
Wahune Jason
Ivan Kaiser
Juliana Mohe
Aquila Ak
Figure 33. On-Bamboo.
Ross McLeod
With:
Joe Willie
Jordan Tegabwasa
Sate Ila
Terrence Wadao
Patricia Kiromat
Karl Aurere
Gabriel Arima
Bele Dago
Stanley Rupo
Angeline Oki
Michael Solala
Pricilla Tangu
Figure 34.
On-Bamboo.
Campbell Drake
With
C Kemalo
Niga Apusa
Mary Wamugl
Fred Philemon
Cassian Fallan
Lalita Kabekabe
Elias William
Derek Domara
I Wohuinangu
Maureen Kewa
Esau Talvat
Paul Chris Hoiasi
Henry Pidi
Samuel Agi
Andiki Ikila
Figure 35. On-Bamboo. Matt Hughes With: Fiona Whitehouse Bill Opasa Kalis Itinge Mathew Sagi Launa Mewie Shai Kuabaal Winter Robert James Korowa Darren Mamoi Daianah Gordon Graham Rama Peter Manoka Napolean Wak Joel Lapa
Figure 36.
On-Bamboo.
Rochus Hinkel
with:
Albert Nelson
Anthony Fisa
Paul Nelly
Hermann Sieland
Emmanuel Epe
Edwin Ugl
A. Korarome
Mathew Mieh
M. Arapuso
Sheila Banian
Louise Here
George Barikana
Antoinette Oa
Emmanuel Riven
Figure 37. On-Bamboo. Martin Fowler
With:
Paul Miti
John Gusa
Haigere Yareng
Evin Vinarut
Jerry Josiah
Wane Wapung
Elizah Gele
Rahnat Wima
Damana Bore
Tuohik Yaninen
Amos Ju
Airo Bulina
Helen Lulum
Henry Vartom
Scambi Okuk
Figure 38.
On-Bamboo.
Luke Pendergast
With:
Dennis Gouda
John Willie
Killie Sapu
Charlie Garoleo
Fiona Levi
Hendricks Maki
Genokila Pala
Dennis Kone
Rex Amu
Jeffry Watai
Dickson Livingston
Velentine Kerwa
Nathan Midian
Nadia Chan
Hilary Yehi
Figure 39.
On-Bamboo.
Christina Tubman
With:
Jayson Ambili
David Maesua
Rachel Murin
Prudence Matango
Cyril Mayum
Noran Torosa
Kila Kwari
Joseph Pou
Paul Namha
Adam Wilson
Robin Benjamin
Camilus Koloa
Amos Mesa
Dick Mauwe
Figure 40.
On-Bamboo.
Roger Paulsen
With:
Sofie Lagberg
Moses Anis
John Nouairi
Henry Lape
Emmanuel Sialis
Kaluwin Narakou
Nau Kapa
Ronald Lumu
Navu Memafu
Stephanie Korokoro
Rachel Nurvue
Joyce Tiaga
Sylvestre Mariosu
Daniel Wamoi
Observation and Continuations

As previously mentioned, in some aspects the design laboratory On-Bamboo was a continuation of Platà Bar and Broken Horizon because it deals with similar questions. The result was overall positive reactions from students and invited guests. As in the Broken Horizon, the experimental environment encouraged students and faculty to strive and develop skills, methods, and understanding of makings. This further strengthens my belief that the hybrid between traditional design praxis and academia—and the full one-to-one research that the Broken Horizon and On-Bamboo operate within—is an attractive way to develop design praxes. The direct feedback loops in the multi-sensory laboratory milieu utilize and mobilize the participant actants in a fruitful manner. A five-day workshop like this must, of course, be viewed a little differently from the pre-runners (the Broken Horizon and Platà Bar), in that the time does not permit for elaborate prototyping. However, the inherent qualities of bamboo made up for some of that. Bamboo is an excellent material to quickly—in a one-to-one scale—realize and conceptualize makings of makings.

The methodology and structure of On-Bamboo, with the invited designers that lead groups of students over a period of five days, has been the model for the creation of Tasmem – Hybrid Making, an event to be held in Doha, Qatar 10-18 March 2013. In this event, which I co-chair, my intention is to further study the involved didactic structures in these types of makings.
Bibliography

———. “The Didactic Theater, Broken Horizon”, n.d.
———. “The Didactic Theater, Platå Bar”, n.d.
The Makings of Crafts[men]
Part of this research is brought directly into the classroom—the studio. As a maker of makings, I found that the role of the teacher—the maker of makers of makings—strengthens my understanding of how and why makings operate. In the studio environment the transferables of design as a knowledge, and how statements operates, become detectable and instant. In this role I am, hopefully, preparing my students with the right methods, techniques, and tools for their makings of makings. In the studio these methods, techniques, and tools are tested in high-speed design processes where the students own makings of makings are scrutinized. In almost 13 years as a design educator, I have had the privilege to develop and test concepts and ideas together with students from five continents in over ten different institutions.

The teaching has taken form as ongoing investigations where results from the studios have been brought into the other part of my praxis. Sometimes the questions of the studios have blended directly into my other praxis as the case of the Broken Horizon\textsuperscript{1} and the On-Bamboo\textsuperscript{2}, two of my design laboratories presented here. In other cases, problems from the “real world” have become departure points for teaching, as in the case of the Bre[a]king Making Chair\textsuperscript{3} (see below) or the entrance to Platå Bar.\textsuperscript{4} Both of these design laboratories have in different ways generated student tasks. In order to present the relevant part of my educational research here, I have selected a number of relevant instances from the classroom—studios.

\textsuperscript{1} Granberg, “The Didactic Theater, Broken Horizon.”
\textsuperscript{2} Granberg, “The Didactic Theater, On Bamboo.”
\textsuperscript{3} Granberg, “The Didactic Theater, The Bre[a]king Making Chair.”
\textsuperscript{4} Granberg, “The Didactic Theater, Platå Bar.”
These instances tend to fall into two categories of operation—that of *anthropology*, design as the knowledge of societies, and that of *crafts*, design as the knowledge of how to put things together. I am the first to acknowledge the arbitrariness of such a taxonomic division. In my view, the two aspects are almost inseparable; designers almost always operate simultaneously as *craftsmen* and *anthropologists*—and so do design students. Therefore, the division is better understood as an indication of a focus of these ongoing laboratories toward either anthropology or crafts. I have called the laboratories: *the Makings of Anthropologist* and *the Makings of Craftsman*.
Crafts[men]

This laboratory is a series of different instances in my teaching where I have focused on the aspects of craft in a wide definition of the word. The sociologist, Richard Sennett, notes similarities in the attitude towards the craft of the labor in such dissimilar fields as biology, carpentry, and art and design.\(^5\) Craftsmanship is the skill required to plan, make, or execute, and it is also the idea of how the labor, the very act of **making**, is becoming a vehicle for research in itself. I have in a number of studios and workshops isolated specific design operations and/or elements. In the former category, for example, the tools of a wood workshop are explored not only as tools of manufacturing but also as tools of thinking. In the latter category, abstract design elements such as membranes and openings—as well as defined objects such as the door, the stair or the chair—are used as departure points for the explorations. I have selected three specific **makings:**

- *The Depth of the Flatness*: School of Design and Crafts, Gothenburg Sweden (HDK) 2001; University of Technology in Papua New Guinea (Unitech) 2007; The University of Monterrey, Mexico (Universidad de Monterrey, UDEM), 2008 Virginia Commonwealth University in Qatar (VCUQatar) 2009
- *Restroy the Chair*: VCUQatar 2010-11
- *A House for Mr. Tool’s Tools*: VCUQatar 2010

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These three instances in my teaching clearly illustrate how I perceive *Making of Crafts[men]*. Furthermore, teaching gives isolated situations where I can test specific research questions almost instantly. The main research questions in this laboratory thus become:

- What tools of physical **making** should we give our students?
- How can we teach students about these tools?
- How do these tools affect the way we conceive design?

Furthermore, since this laboratory pivots around the act of physical **making** as a research methodology the very idea of the design laboratory as a *valid generator for knowledge* can be scrutinized.
The Depth of the Flatness

*The Depth of the Flatness* covers a wide range of loci. I have executed this exploration in different forms over a period of time in four schools, in four countries, on four continents.\(^6\) Albeit with differences of time spent (from two days to four weeks), level of student (from sophomores to graduate students), and scale (1:20 to 1:1), the underpinning questions of the exploration stayed the same. The students divide a space with a membrane sized about three to four meters wide and two to three meters high. The characteristics or property of the different spaces the membrane divides are given by the students. It can vary from physical condition, such as cold/warm, outside/inside, light/dark, to more abstract concepts, such as hostile/gentle, famine/gluttony. The students then have to manifest the separation corporeally and materially. As with any research, the results from the first experiment are brought in to the next.

In the first, *the Depth of the Flatness* conducted in Gothenburg, the membrane was built as a full scale object in the school’s atrium. (see images). In this

\(^6\) School of Design and Crafts, Gothenburg, Sweden (2002); Papua New Guinea University of Technology, Lea PNG (2007); The University of Monterrey, Monterrey Mexico (2008); and Virginia Commonwealth University in Qatar, Doha Qatar (2009).
making, the students started to talk about if it was possible to bring two or more objects together. These discussions become departure points for the following makings where the students by proximity of made objects had to react to their neighbors.

By lottery the students are placed in a row with a gap of one meter between. The neighboring membranes then are connected through a link encompassing elements and materials from both sides. This operation forces the students to work collectively. Through these collaborations, findings of concepts, materiality, objecticity, textuality, and sensomobility, etc. have to be communicated—transferred. They are not communicated to me, as a professor, but to both neighbors. In this, the connection is not only a corporeal operation, but a verbal one as well. The idea of this connection really took off during the third making in Mexico. In this quick, two-day workshop with a scale of 1:20, the students got involved in how and why the connections worked. The discussions between students and objects are not to be understood as purely verbal, but as corporeal makings in which the ruleworks of the two objects come together, tectonically, materially, and conceptually. In the Depth of the Flatness I have found instances where the illusive transferables of design knowledge are forced to surface naturally and analytically without overemphasizing the verbal aspects of communication.

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A big portion of the craft of design knowledge is tacit. This is sometimes problematic for educational institutions such as universities to deal with. In many of the design schools in which I have worked, I have found a tendency to overemphasize written and verbal statements between students and professors. This trust seems to stem out of the power of growing university bureaucracies. Now almost any design teacher with some routine can attest to how hard it is to get the students to read project briefs and how little they really impact the outcome of a studio class; yet, there exist seminars and courses on how to perfect written communication between professors and students. The administration often demands a clear paper trail. This emphasis tends to flatten education to only what can be tested and understood as quantitative knowledge. In an experimental and critical art and design process there must be a lot of room for discovery.

The initial question can, therefore, not be too precise or clear; nor can it be expressed only as a statement of textuality. A couple of years ago one of my colleagues asked me to help with her project briefs. She was desperate. She had a track record of excellent student work from over ten years of teaching, but she now was questioned by the administration of the school; not for the result of her teaching, or the outcome of her classes, but her somewhat scattered and unclear writings. This is a sad example of a system where language and verbal communication are put on a pedestal. The next two instances of my teaching I have selected here, Destroy the Chair and A Tool for Mr. Tool, further illustrate the need for a tacit thinking in the makings of makers. They are also good examples of the connection between the craftsman and his tool, the phenomenon of any thinking through tools. The psychological construct, discussed in Design as Systems of Knowledge, in which the body and the tool turn into one inseparable unit.

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8 Ibid., pt. I, Verbal vs. Tacit.
9 Ibid., pt. III, We Are What We Make, and We Make Constantly.
In Spring and Fall 2011, I ran a studio class in furniture design for the interior design students at VCUQatar. The first day of class, instead of an elaborate brief, I gave the students an old chair and a piece of plywood. Then I placed a prototype of my Making Bre[a]king Chair in the middle of the woodshop, telling the students that this was the brief, and that the task was simply to de/reconstruct a new chair from the objects they had been given and through the tools of VCUQatar’s woodshop. By reacting to the object instead of a written brief, the students were now faced with an outcome of a concept; they possessed the same building block (the very same type of chairs) as the brief; and had access to the same tools that created the object in front of them. I had taught this furniture class before in Fall 2010, introducing a similar task. That studio produced a, mildly speaking, disappointing result. In this first attempt, I had problems getting any thinking through tools through. Very few of the VCUQatar students had been doing any work in a woodshop prior to this class. The students simply froze in front of all the “dirty, noisy, and dangerous” tools. No brief in the world could help them to overcome that. However, the situation required the student to act. Already in the first week, after the safety
training, they were asked to do a first cut, drill a hole or somehow alter the object using the power tool at hand. This act responded to two related learning objectives: the students were beginning the process of designing through a process of corporeal, one-to-one operations; and they were starting to conduct an analytical precedent study—an exploration of a previous making (the chair at hand).

The former of these objectives the process of designing through a process of corporeal, one-to-one operations have a direct connection to the third making selected here: A Tool for Mr. Tool. I will return to that later. Let us talk about the latter objective first: the analytical precedent study. To do a precedent study by breaking the object is not so common. However, the idea of carefully destroying, dissecting, an object in order to understand how it is made has many advantages. The analysis becomes multisensory and direct. There is a knowledge one gains
in the act of cutting, sanding, burning, and drilling an object which goes beyond what a pure ocular analysis can give. By the act of putting the chair together, Frankensteinining it, the analysis is further strengthened in that the shapes, tectonics, construction of the original object are tested, re-made in different configurations and constellations. The analytical process is thus a process of making. The designer is, so to speak, invited by the act of breaking and making to become closer to the object. The tools of analysis (the tools in the woodshop) perform similarly—cut, drill, bend, grind, etc.—as the tools that once shaped the object. The analysis is thus based on objectivity as well as on sensomobility and textuality. Consequently, the method of analysis in breaking down and building up can be similarly understood as a process of design, a process of design through the tools of making. This idea of designing through tools was further developed in the foundation level class in space research at VCUQatar.

Figure 11. 
*Restyoe the Chair*: (VCUQatar), Mona Alansari, plywood, aluminium, 2010.

Figure 12. 
*Restyoe the Chair*: (VCUQatar), Alanoud Al-Nuaimi, plywood, 2010.

Figure 13. 
*Restyoe the Chair*: (VCUQatar), Yasmeen Suleiman, plywood, 2010.
A House for Mr. Tool’s Tools

Starting with Fall semester 2010 all freshmen at VCUQatar are introduced to the woodshop, and I taught one of the two sections the first semester. Drawing from the previous experience in the VCUQatar furniture design class, I had a fairly good idea what I was up against. A House for Mr. Tool’s Tools was meant as an introduction, not only to the woodshop but also to process of thinking through tools. The students started by producing six blocks of Medium-density fibreboard (MDF) that measured roughly 5x10x20cm. Just in this first making the students had to do a series of corporeal operations such as cutting, sanding and gluing. After this the students were divided into three groups and introduced to three stations in a successive order: the Drill, the Cut, and the Grind. As the name indicates, the stations were composed of the tools of the woodshop that fell under each category, so for example you would find the band saw, the miter saw, the table saw, and the jigsaw in the Cut station.

By limiting the design operations to only what the station’s tool would do, the students produced a drilled block, a cut block, and a grinded (sanded, chiseled) block. In the fourth block, the students were to combine findings from all the stations into one design. The four first experiments were explorations of playful sculptures just bigger than the hand. The cuts, holes, and scores had no purpose but to demonstrate how the tools can craft material and how to think through tools. In the fifth and sixth explorations, however, the scale and intentions changed. The students were given a design brief of constructing an exhibition pavilion, roughly the size of 5x10x20 meters. The block here became a 1:100 representation. Simultaneously, the tool of one point freehand
perspective was introduced. Now, instead of a small cube of MDF, the student navigated, through tools and perspectives, a space. The tools, operations were now to: slice a path; cut or drill an opening such as a door or a window; sand a floor; and so on. The findings of this were built in a 1:10 cardboard model complemented by a five image storyboard of the path through the pavilion. I find the storyboard’s combination of images and text very useful as a tool for almost any comprehensive analysis of situations in design.

Figure 17.
*A House for Mr. Tool’s Tools* (VCUQatar), Carisa Antariksa, MDF block, 2010.

Figure 18.
*A House for Mr. Tool’s Tools* (VCUQatar), Carisa Antariksa, cardboard model 1:20, 2010.
Observation and Continuations

The designer as a craftsman is constantly putting *stuff and stuff* together and, in order to do so, she or he is activating a series of tools. These tools in return activate the designer. As already communicated, I see teaching as an ongoing and important part of my praxis. I think it is fair to say that, the element of nonlinearity is stronger in teaching than anywhere else in my praxis. The cyclic structure of education gives a continuum where research questions can be repeated, rehashed, and redefined. The role of teacher strengthens my role as a designer as it gives me instances to comprehend complex structures of *makings of makings*. So, for example, is the finding in *the Depth of the Flatness* already implemented in an ongoing sophomore interior design studio at VCUQatar. Here I, together with my colleague Li Han, have worked in the element of full-scale exploration from the Gothenburg project with the collaborative part from the Mexican ideas of proximity. The students are asked by a series of manipulations to: from flat over the body sized calligraphies construct a 3D object that host functions and ultimately leads to the development of a multipurpose space. In this studio project we, furthermore, introduce computer software into the generative process. The multisensory understanding the students get of constructing the corporeal objects one-to-one is here combined with the cleverness and the flexibility of Rhino for the generation of forms and structures.
The *Making of Crafts[men]* laboratory has given, and continues to give, me valuable insight of how *tools that we make also make us*, and how, in design, tools of manufacturing must be seen as tools of thinking—something elaborated in *Design as System of Knowledge*. It is my belief that teaching design as a physical act is important in developing designers.

Figure 19-20. *The Depth of the Flatness* already implemented in an ongoing sophomore interior design studio at VCUQatar. Work in progress.
Bibliography

———. “The Didactic Theater, Broken Horizon”, n.d.
———. “The Didactic Theater, Platå Bar”, n.d.
The Makings of Anthropologists
Transformation

Similar to *the Making of Crafts[men]*, *the Makings of Anthropology* is a series of instances from my portfolio or teaching. In this series the spotlight has been on the designer as an anthropologist and how **makings** affect societies. The specific instances I have choose to show here:

- *A Place for a Hat for a Place*, School of Design and Crafts in Gothenburg (HDK) 2001;
- *In Search of the Excluded Middle*, University of Nebraska-Lincoln (UNL) 2005;
- *The Extreme Dinner*, Royal Melbourne Institute of Technology (RMIT) 2008;

are representative of this ongoing investigation.

The rulework in a society is in steady flux and transformation for a multitude of reasons. Design, as a discipline, always finds itself in the midst of this transformation. This is true to some degree or other for all given design tasks whether the subject concerns small scale, as in graphic design or electric razors, or big scale, such as city planning and large systems such as paper-making plants. The designer is a student of social transformations. Together with students from a number of schools, I have conducted a series of explorations with an anthropological view on **makings**. Through studies of the interplay between sensomobility, objecticity, and textuality,¹ I have developed an understanding of an array of social phenomena.

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The departure points of these studies have been to have the students construct *design narrative*—narrative beyond a sole verbal structure encompassing a cognitive multisensory understanding—by the insertion (or finding) of *foreign objects*\(^2\) into daily life. A *foreign object* is an object that does not originally belong in the situation into which it is inserted. This object can be an innovation, a new object, or an existing object that is thought of in a new way. In these explorations we have understood Mediterranean towns through high-heel-shoes and soccer balls; studied New York by garbage and soccer balls; comprehended Swedish municipalities through *wearables*, wheelchairs, phony measuring devises and soccer balls—the soccer ball is a wonderful object, unfortunately seldom employed in design analyses—and we have analyzed daily routines of driving cars, waking up in the morning, and eating food.

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\(^2\) Ibid., II, Design Narrative.
A Place for a Hat for a Place

To understand what a foreign object is let us start with the Dual Body Jacket. It was the outcome of a short workshop, En Plats for en Hat for en Plats (A Place for a Hat for a Place), I held for freshmen at HDK in Gothenburg. The suit takes its departure points from a staircase in the city. This object can be understood as a pedagogical tool redirecting communication in the act of making. It interlinks two bodies at the same time as it restricts their visions. It is forcing what is normally taking place between the object and the body (the stair and the individual) to surface and become verbal. It forces a direct objectitive to sensomobilitive relation to take a textualitive detour. It thereby drastically alters the rulework of the staircase. By that it helps to explain the staircase. The suit was never intended to be a real design; it should be understood as a toy or a pedagogical tool.

Figure 4.
A Place for a Hat for a Place: (HDK), 2001.
It is important to understand the foreign objects, not as design proposals or permanent cultural artifacts, but as analytical tools. They are not made to solve problems or demands, nor are they necessarily operable. They work as probes sent into the cultural acts of study. Furthermore, the foreign object is not, at any level, to be interpreted as an ironic statement. They are made to make the student aware of the studied act’s rulework. In addition to developing the Foreign Object, the students are asked to develop a narrative understanding of the social act under consideration by answering the questions: What is changing? How is it changing? And why is it changing? By creating this design narrative—a speculative multisensory narrative analysis—the students are made aware of design’s inherent power of transformation. The Design narrative is not only essential for this part of my teaching, but guides my praxis, too. It is a powerful tool for:

- anticipating design problems;
- categorizing the various actants;
- defining and activating objecticity, sensomobility and textuality; and
- understanding the various senses involved in the act of interest.
In Search of the Excluded Middle - To Drink and to Drive

Let us study two of these design anthropological attempts more carefully as they will offer some deeper understanding about what the method of design narrative and foreign object can offer in the process. Both of these objects, the *Cuel* and the *Auto-Lingo*, were produced as part of my Hyde Chair vertical studio at the UNL. They present two different attitudes and approaches evident, not only in their starting points, but also where the cultural shifts are thought to take place. The new car interface *Auto-Lingo*, by Alexander Jack, is investigating the rather complex material-semiotic relationship between human and machine while driving a car; whereas the new dinner utensil, *the Cuel*, by Dan Seidorf, concerns itself with the choreographic body-to-object relationship in the act of drinking wine.

In *Auto-Lingo*, we find a whole new attitude to the act of driving. Speed is no longer controlled by an alteration of the intricate configuration between gearbox and gas pedal, but by an alteration of the speedometer, the very tool for semiotic translation the car uses for its communication. In the same manner, direction is no longer controlled by a steering wheel but by the alteration of a screen; mimicking the windshield; the device framing our view and the car’s direction. In the car’s interface we find an asymmetrical act of communication. Here the given set of rules is reminiscent of the early eras of

**Figure 5.** “Johan brought in a very unique teaching style in terms of design process. He is not at all about drawing first. He strongly believes in designing by testing first.” (Taylor Cup, open student evaluation).

**Figure 6.** *In Search of the Excluded Middle: (UNL)*, Matt Stoub, fake traffic sign, 2005.

**Figure 7.** *In Search of the Excluded Middle: (UNL)*, Bryan, extremely weak sports equipment, 2005.
cars. The placement and functions of levers, handles, pulleys, and knobs was once done according to the internal working of the first technology. The *Auto-Lingo* ignores this technological diagram. It is treating the invisible part of the car as a black box which gives an opportunity to manipulate the dialogue between the machine and the body.

In Jack’s changed scenario, we simply accept the car’s way of communication. Signals are given by the meters and the windshield. The driver adapts to this language. In *Auto-Lingo*, if you want to drive at fifty miles per hour you just “tell” the car this by a turn of the meter. The car’s inner working would then control the speed to your liking. Although the departure point of this shift is in the language, it must also be thought of as a shift incorporating the body. The acts of writing (changing speed) and reading (noting the changed speed) have gone through a textual shift, as well as a shift of objecticity. Furthermore, the bodily agreements of the whole act shift directly. What was simply a pedal manipulation monitored and controlled by the foot is now entirely an upper-body action. The full effect of this shift is, of course, hard to envision without an actual vehicle to drive. In the narrative form, however, we can start to

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3 Ibid., pt. III.
speculate on what the change constitutes and where it is taking place in the objecticity, textuality, and sensomobility diagram.4

The Cuel shows an alternative trajectory. The path of the transformation could here almost be understood as reversed from the Auto-Lingo’s. This operation starts from a purely body-to-object relationship. The act of drinking wine is conducted by a series of moves in a sensomobility to objecticity configuration. In this choreography, the objecticity of the wineglass is theoretically keeping the temperature of the body and the temperature of the wine separated. This is done by the form of the wineglass. The shaft’s grip is isolating the hand from the container. The Cuel simply adjusts itself to this situation by imitating the site onto which it attaches itself—the shaft. Through this attachment, it alters the role of the shaft, from a grip to a catch. Moreover, the position of the hand twists 90 degrees. So far the changes have happened purely in the body/object area of the diagram. If we continue the plot, however, we find that we have to understand a change in the language area as well.

A dinner is often a social act involving two or more bodies. The way the dinner is conducted is therefore governed by a layer of social rules; let us call them etiquette. Etiquette is chiefly understood as rules communicated through implicit and/or explicit language. By adding the Cuel, these rules have to be

rewritten. The placement of the piece when setting the table is no longer predetermined by etiquette; nor is when and how it is to be used during the dinner, or how to dispose of it after its use. All of this has to be dictated by a rewriting of etiquette. The new etiquette which develops, however, does not have to be concerned with how to properly hold a wine glass. The Cuel guides the hand; it prevents it from any accidental misgripping—textuality has become objecticity. On top of all of this we find new design issues emerging. Since the Cuel is part of a network of objects and body parts such as knives, forks, spoons, plates, glasses, hands, and arms, it has to adapt. The form and the materiality given to the object have to adjust to its environment—its site. *The Cuel*, however, has a unique role of object in-between. Is it a part of the world of silverware or the world of glasses, or the world of hands and arms? Or is it simply to be understood as a unifier of all these worlds?
Seidorf’s interest in the rituals around the act of eating have parallels in my investigations in the *Piecemeal Meal* laboratory. With this interest, the parameters for another design narrative educational exercise, *the Extreme Dinner* at RMIT was set. In *the Extreme Dinner*, the students reinvented rituals, etiquettes, spaces, and objects for eating, which radically changed how and which senses were activated. Eating on a volcano, archeologically excavating your food, finding your eating utensil would slowly melt as you eat your soup, or dancing an intriguing choreography for the *first date* were some of the explorations the group of students executed. Sofie Lagberg lived with her eating utensil/jewelry for a day, recording how this new *Edward Scissorhand-like hybrid* would survive in the exotic of the daily.

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5 Ibid., pt. III, Receivers without Senders.
Observation and Continuations

These examples of design narratives show how students with the help of Foreign Objects start to understand and navigate the complexity of social transformations. How the inserted, strange, peculiar, and odd objects help them to grasp the forces of the shifts that take place in the objectivity-textuality-sensomobility diagram in **makings of makings**. I see the *Makings of Anthropolog[y]ists*—similar to the laboratory the *Making of Crafts[men]*—as an ongoing endeavor in my praxis. The ability for a designer to construct a viable design narrative is, I believe, one of the most crucial tools to create an understanding about **makings of makings**.

In my work at VCUQatar I have, in collaboration with Professor Maja Kinnemark, developed the research questions to fit into the syllabus for the sophomore (Introduction to Interior Design) studio. In *Un-familiarize the Daily*, the students are first asked to study the rulework of daily routines through multisensory storyboards. They then insert an object, and finally create a storyboard for the new routine. The concern of the two storyboards are the following questions:

- *Which actants, humans and non-humans*,\(^6\) *are involved and how are they involved?*
- *Which of the human senses get activated and how?*
- *What language is involved in their daily routine?*

\(^6\) *Ibid.,* pt. III.
The exercise is accompanied by a reading of Juhani Pallasmaa’s the *Eyes of the Skin*\(^7\) and seminar discussions about multisensory design. *Juliet’s Scarf* done by Kholoud Al-Emadi is taken from the follow up project in Fall 2011. The students were asked to create Design Narratives loosely based on the balcony scene in Shakespeare’s *Romeo and Juliet*. In the scene, taking place in the VCUQatar Orange Hall, a rose to Juliet was exchanged for a love letter to Romeo. In Kholoud Al-Emadi’s design, the different elevations of the lovers are bridged by Juliet’s leopard scarf that carries the secret exchange in hidden pockets. To develop the Design Narrative in the form of a storyboard further helped the students to understand the anthropological impact of design.

\(^7\) Pallasmaa, *The Eyes of the Skin.*
Bibliography

The Sports Jacket
Pattern making

About half way through my PhD process I started the *The Sports Jacket*, a Design Laboratory conducted in the discipline of Fashion Design. At this point in the research, I felt a rather strong urge to see if my understanding, my tools and my process of *making*—generated over a 20-year period as a designer and architect—would still be valid when it was inserted into the rulework of a discipline which was unfamiliar to me. In the process with *The Bre[a]king Making Chair*, I started a collaboration with a fashion and fabric designer and VCUQatar professor, Della Reams, and the tailor Abdul Cader that showed me the possibility of utilizing my design experience and the tools I have developed in the field of fashion. So, in order to conduct this laboratory, I enrolled myself as an undergraduate design student in the Fashion department at VCUQatar. Under the guidance of Della Reams, I tried to unravel the mystery of *patternmaking* from the perspective of a beginner. Before taking Ream’s class, my experience of Fashion Design was limited to a couple of invitations to judge fashion shows and, of course, as a consumer and user of clothes.

*The Sport Jacket* as a product aims for a specific situation – my research trips. Since my travels take me to a variety of climatic zones, from the hot and humid tropics to dry and cold northern climates, I have the need for a well designed, multipurpose jacket, a jacket I can wear on a cold night sitting at a campfire as well as at a lecture or a dinner. Furthermore, it must be possible to carry the garment in a backpack without its losing its shape or grace. In other words, it has to have the ruggedness of traditional tracking clothes combined with the elegance of a dinner jacket, like the transformation of the opening scene in *Goldfinger*¹ where James Bond swiftly sheds his wetsuit to expose the pristine white tuxedo he is wearing underneath.

¹Hamilton, *Goldfinger*.
The rather naïve design narrative\textsuperscript{2} of the Sports Jacket gave me an opportunity to explore techniques and technologies of Fashion Design and patternmaking. The small scope of this design laboratory, one designer, one garment, one end-user (me) gave me an opportunity to explore structures, intimately. With myself as designer, model and end-user, the aim was to focus on what I have called the media axis,\textsuperscript{3} rather than on transmission along the message axis. Furthermore, my renewed role as a student gave me a chance to again view the making of makers of makings\textsuperscript{4} from the other side, so of speak. In this, I allied myself with knowledge in the form of new techniques transmitted by Reams and new technology in the form of a set of tools, such as paper, fabric, scissors, French curves, slopers, and the muslin fabric. The communication creating the jacket sloper followed a trajectory where the initial sensomobilative\textsuperscript{5} focus through textualitive operations slides to more objecticitive focus and ends up being tested through sensomobility. In other words, the three-dimensional body is,

\begin{itemize}
  \item \textsuperscript{2}Granberg, “Design as System of Knowledge,” pt. II, Design Narrative.
  \item \textsuperscript{3}Ibid., II, Interobjecticity.
  \item \textsuperscript{4}Ibid., pt. I, Makings of Makings.
  \item \textsuperscript{5}Ibid., pt. I, Objecticity, Textuality, and Sensomobility.
\end{itemize}
through a preplotted process, turned into a flat representation that then is turned into an object. Yet the corporeal is filtered through representation to become corporeal again. In this, the patternmaking process reflects almost any design process. What I found fascinating in this particular process, are first, the speed in which the predictions become realizations; second, how the focus, albeit shifting, seldom strays away from the one-to-one experience; and third, how the process throughout utilizes multiple sensory systems. As I progress with my garment, I find that the architect in me is highly envious of the emerging fashion designer and the speed and accuracy he can operate a multisensory narrative.

Pattern drafting is a design process that involves taking measurements from a person’s body or a body form… and then transferring these measurements onto a paper pattern… Flat patternmaking is a design process in which a base block or a sloper is used to create a pattern for a new style.(Knowles, The Practical Guide To Patternmaking For Fashion Designers, 1–2.)(bold in original text)
Creating my pattern, I am following the guidelines of Reams and the textbook, *The Practical Guide To Patternmaking For Fashion Designers*. In the preplotting process, I start with a gathering of measurements of my body. Measurements such as my total shoulder girth, the distance from the center front neck to shoulder tip; my center front length; and total arm length are carefully measured and transferred into a table – a painstaking process. The result is my body, abstracted into a derivative of numbers. These numbers are thereafter transferred onto a sloper, “…a term given to a very basic set of pattern pieces that are used to flat pattern.”⁶ This sloper is an abstract, flat drawing created through abstract directions in a precise, step-by-step procedure. This carefully sequenced process is reminiscent of cooking by a recipe and has instructions such as, “3. Draw a line at a 90-degree angle to the A-B line (center front) from A to D equal to #7 (center front neck to shoulder tip).”⁷ Due to my inexperience (or maybe my odd body), I had to re-measure three times until all the lines in the upper body sloper lined up. The result was a flat representation of the body – my skin on paper. After this, the sloper was then transferred to a

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⁷Ibid., 36.
first prototype in muslin, a loosely woven cotton fabric. This prototype was fitted onto the body in a trial-and-error process assisted by a high-speed industrial sewing machine. This *un-abstractive* part of the process was guided by sensomobility and objecticity. My supervisor, Andrea Mina, unaware of the practice of using muslin as a prototyping material, interpreted the first images of the jacket as pajamas. The fitting—I could test the object by wearing it myself—of the muslin prototype reveals if there is any need for alterations, and a new drawing, or sloper, is created. Then the actual garment is produced and fitted and altered to accommodate the moving body. In the first phases, I could do all the work by myself; however as the sewing became more complex when using the actual material, I received help from the tailor, Abdul Cader. Abdul Cader is a true craftsman. When we were working, I noticed that he would make decisions by letting the scissors create the lines directly on the fabric—thinking through the tools.  

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8 Granberg, “Design as System of Knowledge,” pt. III, We Are What We Make, and We Make Constantly.
Cader is an autodidact. He was introduced into the trade as an 11-year-old boy in the city of Jaffna, in his native Sri Lanka, starting with making buttonholes in a large tailoring shop. When Cader tried to learn by watching other tailors, he was fired. So, by the age of 15, he opened up his own shop. By using scrap fabric thrown away from other shops, he created a first line of clothing based on his own measurements. One of Cader’s clients was the Liberation Tigers of Tamil Eelam, The Tamil Tigers. He produced as many as 10-12 uniforms a day for the infamous guerrilla army. With his city in ruins and a large family to support, Cader later came to Doha, Qatar, with, as he told me, nothing except the clothes he wore. In Doha, he ran a couple of tailoring shops before he came to work as a security guard for Qatar Academy. And there the story of Abdul Cader, the tailor, could have ended, as it does with so many good craftsmen without diplomas and grades. But Abdul came in contact with Sandra Wilkins and the Fashion Department at VCUQatar.
In the process with the jacket, Abdul’s expertise was crucial. He assisted me in selecting fabrics and pointed out where to add or subtract in the pattern to get the garment to fit the body. Patternmaking is not the only process to use to make garments. There is an even more direct way, draping. In this process fabric is draped onto a manikin or a human body. In his lecture at VCUQatar in Fall 2011, the fashion designer, Eric Gaskins, described how his mentor, Hubert de Givenchy, works on live models:

He would have his models coming up, and it was not only about sketching. The collection was draped on live models. So these amazing women… his in-house models, about a dozen of them, would come in to the studio each day and they would stand in front of the mirror. He would literally take bolts of fabric and unfurl them, and he would create dresses, gowns and suits right on the live model… the women would change… their position every two or three minutes … this way he could see how the clothes that he created… react to the body (Eric Gaskins)⁹

Draping provides the designer with an almost one-to-one sensation of material and structure. Unfortunately time limits did not permit me to enroll in a draping class as well; however, it is my intention to continue this research by adding draping experience.

⁹ As transcribed from Eric Gaskins’ public lecture October 25 2011 VCUQatar, Doha
Conclusion and Continuations

The patternmaking process has indeed developed tools for makings of makings. In fact, the preplotted process of patternmaking must be seen as a making in its own right. The maker of a book of patternmaking programs, the making similar to any making of a tool, constitutes other makings. We can see this as a technique that generates technology. The trajectory of patternmaking is similar to how I create furniture: measurements of the body are abstracted and converted into measurements of the furniture. Almost naturally, the processes in The Sports Jacket and The Bre[a]king Making Chair line up. Furthermore, the discussions around these two laboratories resulted in a furniture ensemble in collaboration with a group of professors from VCUQatar: Della Reams; Narita Panji Mattock; Rhys Himsworth; and, of course, Abdul Cader. Thus, this making continues. On an individual plane, the laboratory gave me a good insight into how it is to be on the other side of a making of makers of makings. I found these instances where your role changes, and you have to react to the transmission of statements in a different manner—very rewarding for how I see my praxis as an educator.

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Bibliography

Slow Food Beirut

In this small design/art project, ingredients, preparation, cuisine, and etiquette are scrutinized through an object. From the act of serving meze, the traditional Lebanese meal, an object is designed. Trays fit into other trays like Russian nesting dolls. The individual order of the trays indicates which food and in which order they are served. It is hard not to fall in love with the intricate and delicious, almost ritualistic, serving of food in a Lebanese restaurant. Eating meze in a restaurant in Beirut is often a slow, drawn out experience where food is brought to you successively. First come the dips, followed by dumplings and rolls, then comes the meat, and the whole dinner is rounded off with dessert and fruits. The laboratory the Piecemeal Meal has its departure point from my experiences in the Lebanese capital in Spring 2004 when I was teaching at the Lebanese American University. The laboratory of the Piecemeal Meal seeks to explore social structure of making. In particular, the concern has been to unearth instances where technologies and techniques actively translate and transform social acts.

The act of making food is definitively one of the most vital makings that form societies. Simply put, without food we do not survive. We are what we eat and what we cook. Without food there is no society. An exploration on making such as this, therefore, gains tremendously by a closer look at how food and the making of it contributes to the fabric of society from an individual level and upwards. I do not know anybody who is totally incapable

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1 Granberg, “Design as System of Knowledge,” II, the Ghost in the Machine. "The former, technology, relates to all our manufactured things, the latter, techniques, relates to how these are put in use; a concert pianist would have certain technique to use the technology that is the piano."
of preparing, if not a decent meal, at least a meal on which one could survive. In this laboratory, the Piecemeal Meal, the focus has been on not only how food is made, but also on how it is served and how the act of eating makes for social interactions; how the act of eating sits in a whole social and corporeal network. How does, for example, the interobjecticity\(^2\) operate between cooking utensils, tableware, and sitting tools? How are recipes and cooking techniques informed by the way societies eat, and how is the way we eat informed by recipes and cooking techniques? The Piecemeal Meal takes its departure point from the relationship between serving tools, recipes, foodstuffs, cooking techniques, sitting posteriors, and etiquette. From the perspective of a specific cuisine, the Lebanese meze, it can be observed that its ethnographical particularities demonstrate some of the intrinsic rulework of design. In this exploration, we will indeed find rich evidence of the plastic symbiotic characteristics of makings of makings studied in other laboratories.

The makings of food operate on many levels. The importance of food in the manufacturing of societies ranges from food as basic supplier of nutrition to food operating as signs in complex semiotic systems. In the former of these two extremes, we see food as the very foundation and building block for societies. In the latter, the food is seen rather as an expression of its society. These extremes are not disconnected but are held together by the rationale of makings of makings—we shape our tools and thereafter our tools shape us. Conclusions drawn from this laboratory can be transferred, not only to other culinary systems, but to other networks of actants.\(^3\) Local and reliable food sources are essential for any higher forms of societal structure. In Germs, Guns and Steal, the American Jared Diamond outlines historical, global, and societal phenomena that shaped the political map for over 10,000 years. In this book, Diamond tries to explain why Eurasian civilizations (including North Africa) not only have endured over time, but also have subjugated other civilizations, such as the Australian and the American. Instead of understanding the

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\(^2\) Ibid., II, Interobjecticity.

\(^3\) Ibid., pt. I, The World of Stuff and Stuff is a World of Statements.
hierarchies of societies based on intellectual, moral, or inherent genetic superiority, he argues that differences of power and technology between human societies originate in environmental differences. One of Diamond’s leading theories is that the success of the Eurasian sphere was due to the natural availability of highly nutritious foodstuffs, “the people of areas with a head start of food production… gained a head start on the path leading towards guns, germs, and steel.”

It is easy to see that a surplus of food gives a good foundation for a society to flourish, and by the same token it is easy to see why food acts almost as a semiotic superstructure for how we see ourselves. The historian Massimo Montanari writes, “In the Mediterranean region—the zone of wheat—it is bread that reveals this symbolic as well as nutritional function.”

One can probably argue that bread and bureaucracy, unfortunately, developed simultaneously. Grain could be measured, stored, and distributed; actions that could be recorded and filed away.

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Extended quote: “In the Mediterranean region—the zone of wheat—it is bread that reveals this symbolic as well as nutritional function: bread does not exist in nature and only man knows how to make it, having elaborated a sophisticated technology which envisages a series of complex operations, the fruit of long experiments and thoughtful reflection (from the cultivation of the grain to the preparation of the finished product). Bread therefore symbolizes man’s exit from the animal kingdom and the establishment of “civilization.” In the epic poems The Iliad and The Odyssey, “bread eaters” are synonymous with “men.” Similarly, the epic of Gilgamesh, the first literary text known, written in Mesopotamia around 4,000 years ago, tells of a “wild man” who left his status as a minor only at the moment when he learned of the existence of bread, something revealed to him by a woman—in fact, a prostitute (granting the female figure in this way both the role of guardian of food knowledge and that of custodian of sexuality).
Sorting Mechanisms

In the **makings** of *the Piecemeal Meal*, we find similar structures of transmissions and translations that are discussed in other laboratories. We unearth statements of sensomobilitive, objecticitive, and textualitiv character. Food, and the acts around food, are forcefully activating bodies, objects, and language into symbiotic systems. The laboratory of *the Piecemeal Meal* cannot, of course, consider all of these aspects. The main focus in the laboratory has been the intricate interplay between *technology* and *techniques*. The philosopher Manuel De Landa argues that similar underlying principles can be applied to the understanding of how strata in sedimentary rock and social strata are formed, “[S]edimentary rocks, species, and social classes (and other institutionalized hierarchies) are all historical constructions, the product of definite structure-generating processes that take as their starting point a heterogeneous collection of raw materials (pebbles, genes, roles), homogenize them through a sorting operation, and then consolidate the resulting uniform grouping into a more permanent state.”

My interest is here, in how technology and technique operate as these *sorting mechanisms*; and how the *sorting mechanisms* operate as generators and translators of social acts.

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6 Landa and Landa, *A Thousand Years of Nonlinear History*, 62.
In the act of eating, we find a number of sorting mechanisms. These sorting mechanisms act simultaneously and are interrelated. For example, the eating posture, the societal agreement of sitting\(^7\), generates a number of statements, corporeal as well as mental. It constitutes how and which eating utensils are mobilized for the act. Western sitting (tables and chairs) grants the usage of plates, knife, and fork; whereas the chopsticks and bowl of the Chinese act are formed by a different way of sitting. The eating utensils then relate to how the meal is cooked, the recipe. Since eating with chopsticks from a bowl requires small, bite-sized pieces, the food is prepared in a different rulework than the Western counterpart. What de Landa is calling “a more permanent state” depends on the weight of the statements made by the participating actants; i.e. how many sorting mechanisms are lining up together? How many statements are collaborating in the argumentation? For example, to maintain a speed of forty km/h on a residential street, we can transmit correlated statements with the means of speed bumps, traffic signs, and education in traffic school. Bruno Latour argues that *technology is society made durable*.\(^8\) The more alignment of statements (sorting mechanisms), the more durable an act becomes; see the discussion about *cultural viscosity*\(^9\) in Part II of *Design as System of Knowledge*. In the act of eating, these statements can be carried out by technology (chairs, tables, bowls, kitchen knives, forks, etc.) as well as technique (postures, cooking procedures, etc.). Let us see how the principle of sorting mechanisms applies to our laboratory.

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\(^7\) Granberg, “Design as System of Knowledge,” II, The Car and the Chair.
\(^8\) Latour, “Technology is Society Made Durable.”
\(^9\) Granberg, “Design as System of Knowledge,” II, the Ghost of Numbers.
The Piecemeal Meal trays – by sizes and configuration – capture the slow successive serving ritual of the meze. The compartments of the trays dictate the size of the food. The nesting of the trays sets the sequence in which the food is served. Thus, the ritual procedure—etiquette—which, mostly, was maintained by sorting mechanisms transmitting in channels of textuality is strengthened by a secondary sorting mechanism. This one is of an objecticitive character. Thus, we find the techniques consolidated through technology. The tray’s objecticity lines up with the recipes of the meze. As the Chinese example where the bowl and the chopstick constitute the bite-size pieces of the cuisine, the trays constitute the size of the rolls and dough parcels in the meze. In addition, the act of sharing food, the social behavior, from the same source at the table is now captured in the objects. The trays are now carrying the rulework (the knowledge) within the object, the rulework of the meze.
This is the same principle we find in the hotel key – a key attached to a weight. The weight on the key enforces a key-returning behavior. The guests are willingly returning the keys to the receptionist to rid themselves of the extra weight. The weight is the activating part of the sorting mechanism (the reception desk, the concierge, the key hooks, etc.), that is separating keys from guests. In *The Piecemeal Meal*, we can find similar principles in action. Although objects initially are not the activator of the social event, we can load them, impregnate them, make them make. As such, it is as if technology gets a life of its own. De Landa understands sedimentary rocks, species, and social classes to be historical constructions. This idea is parallel to how Richard Dawkins sees cultural replicators, memes, governed by the same principle as genetic

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10 Ibid., I, A Key to Understanding.
replicators, genes.\textsuperscript{12, 13} Dawkins speaks of an element that can survive and replicate in societies as the genetic code survives and replicates in nature. “Examples of memes are tunes, ideas, catch phrases, clothes fashions, ways of making pots or of building arches. Just as genes propagate themselves in the gene pool leaping from body to body via sperms or egg, so memes propagates themselves in the meme pool by leaping from brain to brain via a process that in a broad sense can be called imitation.”\textsuperscript{14}

Let us examine Dawkins’ propagation of memes through the Piecemeal Meal. The specific memes of the trays can be understood as the serving sequence of successively larger pieces/courses. There is, of course, a broader rulework attached to the tray. As any tray, they would carry and store solids and liquids; however, the sequential aspect is specific to this configuration and imprinted by the act of meze. If we now think that we export the trays, insert them into other culinary situations, what would happen? As sorting mechanisms, the trays would operate the same way regardless if the kitchen they are attached to is, for example, Mexican or Swedish. However, this is not to say that the sequence of the meze is automatically transmitted to the new situation. It is rather the ability to copy the act that is sent. This ability, inherent in the corporeal configuration (objecticity), must be turned on. This turning on is only possible if:

- there are other supporting statements – sorting mechanisms; or
- there is a lack of other stronger statements – sorting mechanisms.

If any sorting mechanism is inserted in an act where conflicting and more forceful sorting mechanisms are already at work, it would either be rendered useless and perish; or comply and translate; or transform. Say that the trays are inserted in a culinary act governed by stronger sequential mechanisms; they would not change the act; their meme, of successive serving, would not reproduce.

\textsuperscript{12} Granberg, “Design as System of Knowledge,” I, Naming and Framing.
\textsuperscript{13} Ibid., III, Three Aspects.
\textsuperscript{14} Dawkins, \textit{The Selfish Gene}, 192.
With that understanding, let us place the trays in an act where we really think that they can survive; for this I have selected a culinary act familiar to me – the Swedish smorgasbord. The word “smorgasbord” is a recent Swedish export to English connoting a buffet style of eating experience. A traditional Swedish smorgasbord contains foods such as hors d'oeuvres, hot and cold meats, smoked and pickled fish, cheeses, salads, and relishes, most of it in sixes. The buffet institution does not primarily have any common sorting mechanisms for how food is served. It is up to the dinner guest to plot a good path through the meal. You eat what you like in the order that you like. There are, of course, social conventions such as how to plan a healthy and exciting food experience. However, the sequence can be understood as individual and arbitrary. If we now insert the trays, we find that most of the food would fit into the series of recipes. A recipe is, of course, a textualitive sorting mechanism. The tray would guide the food out to the tables. A dinner might then be composed as follows: first the hors d'oeuvres, cheese and the pickled fish; to be followed by the meatballs and sausages; and then the larger meats; and then some... why not ice-cream with warm cloudberries? Not too shabby a meal in my opinion. As we can see, the trays are in this cross-kitchen act operating almost in the same manner as they did for the meze. Now this is not proof that this meme would survive in this new environment. For that to happen, conventions and the larger rulework have to line-up, too. The argument is that they could survive, and that if they did they would translate the culinary experience in the act.
This is a small *design narrative* in which technology and technique are shifting poles as generators: first, the ritual of the meze (technique) generates a **making** of the corporeal object, the trays (technology); second, the translation of the trays (technology) into a Swedish ritual (technique); and third, the narrative continues. Here we find similar social structure as in the development of the piano I have discussed in Part II of *Design as System of Knowledge*.\(^\text{15}\) In the second stage, the act of sorting the Swedish smorgasbord through the trays that were intended for meze, we find a technology which constitutes a technique. Similarly, as when a hunter’s bow is used as a stringed instrument,\(^\text{16}\) we see how aspects of the object can be activated to perform – *objecticitive sorting mechanism*. Furthermore, when we extend the design narrative a little further, the generators, the trays, might disappear completely. We can depict a scenario where the only thing left is the new order of how we serve the Swedish smorgasbord – a *textualitative sorting mechanism*. Here we might see the **makings** of silverware, glasses, and tabletops reacting to this order. In that instance, we can talk about how techniques constitute technology, similar to how we can think of the piano stemming from the act of playing the pipe organ.\(^\text{17}\)

\[^{15}\text{Granberg, “Design as System of Knowledge,” II.}\]
\[^{16}\text{Ibid., II, Hunting for Music.}\]
\[^{17}\text{Ibid., II, the Ghost Goes Hybrid.}\]
Figure 11. 
The Piecemeal Meal.
Observation and Continuations

The laboratory gave me a series of opportunities to scrutinize acts of **making** from a number of viewpoints. It provided possibilities to construct a *design narrative* where instances of technology or technique generated translations and/or transformations that were noticeable. Furthermore, the exploration helped me to further understand the interplay between statements of *textuality* and *objecticity*. I found similarities in the ruleworks at play in *the Piecemeal Meal* and other laboratories, for example *the Bre[a]king Making Chair*. These two laboratories showed similarities in how statements are generated and maintained. As an exploration in my praxis, I see that this laboratory is far from over. I hope to continue to develop the food trays into a product, as well as write a book of recipes specific for the trays.

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18 Granberg, “The Didactic Theater, The Bre[a]king Making Chair.”
Bibliography


Plata Bar
Introduction

In Fall 2000, I were approached by Patrick Blix and Marcus Höglund with a simple question. Would we like to design a restaurant/café/nightclub located in the central part of Linkoping? Linkoping is a Swedish town of a few souls less than 105,0001 inhabitants, about two hours drive from the capital, Stockholm. A couple of months earlier we had started on a similar design with these two clients at a location close by. That proposal had, however, been scrapped when the two restaurateurs did not obtain the necessary lease. Now the question was somewhat different. A bank had approached our clients with a proposal to take over an existing establishment. The place in question, a well-established venue at the corner of Platensgatan and Agatan in Linkoping, had already seen its best days. Despite its central location, in the past four years, five of the previous owners had been forced into bankruptcy. The place was subsequently owned by the bank and it was they who had approached our clients. It was already early Fall and for economic reasons, Blix and Höglund felt like the new place had to open by the end of November. This push was to take advantage of the lucrative Swedish pre-Christmas season. Thus the design/construction time was limited. We had 80 days to complete the project. With a rundown interior of over 2,000 square meters, this was indeed some undertaking. It is with this scenario, that in order to answer the client’s question with a yes, I gave them two reservations.

First, the previous five owners had gone belly up; therefore we argued that this design undertaking could not simply be a shallow remake. In this case, design could not be seen as only a new coat of paint, a veneer, or cool signage that tried to camouflage a dysfunctional interior. A change, a real change, was required. For us to believe that we could help, our clients needed to agree on this attitude. Second, the very short design and production time called for a differently structured timeline. The production and design could not be seen as

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separate phases. To complete the design satisfactorily I, therefore, requested that I open an on-site design office. By being close to the process, I hoped to cut out some of the friction between manufacturing and design. Surprisingly, the clients not only agreed to, but embraced both of these prerequisites. Subsequently, these prerequisites came to create the connective structure for the whole project. It is in these two prerequisites that we find the very framework for the research questions which were explored in the laboratory, Platå Bar project—I investigated the aspects of the designer as a craftsman; and the matter of the designer as an anthropologist with license to change.

- through which statements is the designer communicating with the team, the actants, of makers?
- through which statements is the designer communicating with the user of the making?

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This essay is, subsequently, divided into two parts, scrutinizing these two aspects and the design methodologies, the *design narrative*³ and the *didactic design team*⁴ they brought forward. The former of these exploration focus on the message axis of the message/media diagram⁵ (figure 1) the later on the media axis of the diagram (figure 2). Given that this work acknowledges design as research in its own right, these design methodologies are also seen as research methodologies.

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⁴ Granberg, “The Didactic Theater, In the Laboratory.”
The Design Narrative of Platå Bar
A Queue to a Line

To see people stand in line for popular restaurants and hot clubs is a common scene in big cities such as New York, London, and Paris, but nowhere else has the phenomenon become such an integrated part of the culture as in my native Sweden. A friend visiting from Lebanon asked me if we are “not actually in love with the queue itself?” Even outside of the big cities, you will find well-established queue systems outside bars and restaurants. Waiting in line on Friday and Saturday nights is more of a rule than an exception.

It is a display where almost all the participating actants seem to have lost their appreciation of the involved rulework. The bar guest finds himself in a hostile and cold environment placed in a hierarchic structure watched over by guards. The bar owner is under siege behind a protective ring of security, viewing the guests as potential criminals. Furthermore, the bar owner sees a competing enterprise arise just outside his bar where a hotdog vendor provides food and drinks which are consumed from cans and flasks brought by the waiting guests. This making also starts to have a negative impact on unrelated parts of society when grannies and families with children start to feel threatened. Nobody seems to gain anything from the situation except surveillance companies, and, maybe, hotdog vendors. That the situation has become a real social problem is highlighted by the infamous Sturecompaniet incident. On the morning of 4 December 1994, three young men with automatic carbines injured or killed a number of people outside Sturecompaniet in Stockholm. The act was to revenge the fact that the three had previously been denied access to the popular nightclub.

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6 Nordin, A Swedish Dilemma, 173.
Entries are always a combination of security and courtesy, like the handshake or cheek kissing, where we see an act of recognition as well as an act of inspection (a check for hidden weapons). The problem with the Swedish bar entry system is that the need for security almost totally overshadows the act’s welcoming aspects. This is indeed peculiar since the very idea of a bar is an act of welcoming and courtesy. The departure point for us in the design of the Platå Bar was to backtrack to the very foundation of the concept of a bar and try to understand where that concept got lost. In order to penetrate the problem and re-make the act, we created a plausible narrative, a design narrative,\(^7\) from which the cultural act of the Swedish bar queue had emerged.

The Sad Story of Courtesy Lost

Initially Bar Owner asks a simple question: *How can I best serve food and drinks to my guests?*

This is reflected by a question from Guest: *How can I best spend my night and eat and drink as well?*

This is the question that will form the initial spatiality (the bar tables and chairs). Due to the seasonal climate of Sweden with cold winters and warm summers, a secondary line of questioning could almost immediately be added to the initial question: *How can I best serve food and drinks to my guests, as well as take care of their winter clothes?*

In the beginning, the clothes could easily be stored on the backs of the chairs. However, when the enterprise becomes successful this system gets too cumbersome. The waiters are not able to serve efficiently with jackets, mittens, and scarves in the way. Let us call the initiatives from Bar Owner—*program*—and the reactions to this program—*anti-program*. The solution (program) to this (first anti-program) is to make a designated place for winter clothes—the cloakroom. Here we see a problem of objecticity get a solution of objecticity. As a spatial solution, this works well as the garments take less space here than they did free hanging on the backs of chairs. Unfortunately, the cloakroom shifts the problem from a spatial one to a legal one. When the clothes are hanging close to the guests, the responsibility—liability—for the garment is clear. Everybody is responsible for their own clothes. Stored in a common space provided by the bar, the responsibility, ownership, is not as straightforward. It does not matter if Bar Owner, through signage, tries to shift the responsibility back to the guests (“The bar is not responsible for lost property”). The cloakroom’s very purpose is to protect the clothes. Every loss is, if not legally, morally blamed directly on the cloakroom and indirectly on

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Bar Owner. The next anti-program deployed is to hire a guardian for the clothes—Garderobier. This is an act of sensomobility. The initial question of courtesy is still maintained. The introduction of the Gardrobier might even be seen as strengthening the welcoming atmosphere of the entry: \textit{When you’re having a great night of drinking and eating, you can leave your clothes here with me.}

The introduction of the Garderobier will once again shift the problem. This time from a legal to an economical one, as it costs money to pay the new employee and produces no income. This shift becomes more problematic with the introduction of an anti-anti-program.

In any culture, people tend to eat meals at the same time, and such is the case in Sweden. The introduction of the Garderobier creates a bottleneck in the system. This anti-program does exist, but goes undetected already in the walk-in cloakroom. However, the program of introducing the Garderobier is an important turn of events in that it is the very crystallization point of the queue. Hitherto, all the intentions have been easily detected; the act is rather symmetrical. This will, however, change here. A queue is a hierarchic social organization, and with it comes a whole new set of rules and problems. The hierarchy of a queue is based on nothing other than the time of arrival of the different participants, a fact that, in itself, makes this structure a bad social division and a source of irritation. Add the fact that the participants, the Guests, in this very system are hungry and/or have already started to drink alcohol before their arrival, and the result is the nearly explosive nature of the situation. This is the call for the next actant to enter the scene—the Guard. With this a whole set of shifts and changes occur. First, the economic aspect

\begin{figure}[h]
\centering
\includegraphics[width=\textwidth]{image1.png}
\caption{A queue system outside a bar. Waiting in line on Friday and Saturday nights is more of a rule than an exception, Gothenburg, Sweden.}
\end{figure}

\begin{figure}[h]
\centering
\includegraphics[width=\textwidth]{image2.png}
\caption{The Garderobier creates a bottleneck in the system, Gothenburg, Sweden.}
\end{figure}

\begin{figure}[h]
\centering
\includegraphics[width=\textwidth]{image3.png}
\caption{Flasks and cans are easy to bring along, Gothenburg, Sweden.}
\end{figure}

\begin{figure}[h]
\centering
\includegraphics[width=\textwidth]{image4.png}
\caption{The density of hungry guests also attracts another actant—the Hotdog Vendor, Gothenburg, Sweden.}
\end{figure}
already detected in the introduction of the Garderobier now becomes a very substantial problem. The economic solution is to connect the Guard and the Garderobier into one budgetary unit, letting the Guests and their clothes be accountable for this cost. With that the initial question has radically changed to a demand: *You have to leave your clothes and pay!*(Unspoken statement: *we need to finance the Guard and the Garderobier*).

This is no longer a polite statement. To understand the reason for Bar Owner to maintain this organization, we have to view it from yet another point on the sliding scale in the cultural act. The bodies in the queue start to form signage in a language. The argument goes like this: the better a bar is the more people frequent it. The more people frequent the bar, the longer the queue, and, therefore, a long queue becomes an ad for the bar, a statement of textuality. We can actually, if we freeze frame the narrative at this point, detect a desire from Bar Owner to have his queue build up. He only gains from this cultural fabrication. He has a free ad, paid by his guests, often on public ground. If we restart the chain of events, however, we will find that he also loses in the deal.

Since the guests now are fully aware that a night out in the city requires some queuing time, they are likely to bring more clothes, and, more pertinent to this narrative, they bring drinks from home to have in the queue. Flasks and cans are easy to bring along. The guest thus translates to a unit, an actant, of a heavier dressed human and a flask. This human/non-human hybrid now understands the world from a perspective of sensomobility and objecticity. Furthermore, the density of hungry guests also attracts another actant—the Hotdog Vendor. In the acts of eating the hotdogs and drinking from flasks and cans, we can see the concept of the bar almost mirrored outside. This alternative bar does not provide Bar Owner with any revenue, which in return strengthens the odd economics of the system in which Guard, Garderobier, Bar Owner, and Hotdog Vendor are linked. Furthermore, Bar Owner’s know-how is concentrated on providing good cooking and drinks. There is a chance

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9 Ibid., pt. III, Receivers without Senders.
that he does not have any interest in the guarding part. The Guard/Garderobier is, therefore, likely to be hired as an external hand, whose loyalties are not necessarily to the bar. One can easily see this franchise expand to Guard/Garderobier/Hotdog Vendor in a new network where guards in different bars easily communicate with mobile hotdog vendors, directing them to the hotspots of the city’s nightlife. In this scene of the narrative, Bar Owner has totally lost control. The rules of the social act have slipped and slid so many times that everyone has lost their grip.
Design as Anthropology

This was the state of affairs when I, as designer—*anthropologists with license to transform*—entered the *Platà Bar* project. The narrative gave us an indication of where we could attack the problem—the creation of the bottleneck in the cloakroom/gardrobier. We sought a plot or a choreography where the entrance retained its initial function of welcoming and courtesy; where the whole cultural act rendered a sensation of anticipation and expectation, a choreography of small turns and twists aimed to create a positive suspense. The dance begins as the guest is led through a fragile world of glass. The material gives the tunnel a delicate and brittle statement of objecticity, replacing the guard. This translates the act from the power relationship (guard to guest), sensomobility to sensomobility, to a relationship of mutual respect, the dialogue between a careful body and a vulnerable object, or sensomobility to objecticity.10 Once inside, the guest faces the bow of the bar; the qualities or the active of communication of a glass screen, its objecticity (sound insulated but see-through) brings about an (re)action. Very few people feel comfortable facing this screen of glass with no means of communication to the bartender and their back exposed to the entrance.

10 Ibid., pt. III, *We Are What We Make, and We Make Constantly*. 

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This leaves the guest with the choice to select one of the sides of the double bar. As the guest is unlikely to linger facing a glass screen, the entrance is kept clear. This clear corridor provides the bartender with an unrestricted vision of the door, diminishing the need for security. The guest also sees part of the
scene through the 90 degree turn towards the bar. This amplifies individual courtesy which is often lacking in the queue where a person is objectified due to the fact that people only face the back of the person in front of them. It also provides a perfect spot for waiting for late friends and dates. Furthermore, from this point, the cloakroom becomes an attraction. It opens up towards the bar. When Guests get hot in their winter clothes, they are happy to make use of the cloakroom. As in the case of returning the hotel keys,\textsuperscript{11} the questions are asymmetrical.

Bar Owner’s question: \textit{How can we take care of the winter clothes so they are not blocking the circulation?}

Guest’s question: \textit{How can I get rid of this warm clothing so I don’t get too hot?}

Once we started to explore the social rules of the bar, we felt we could push the envelope by exploring the aspect of positive suspension a little further. Why do people frequent bars? One of the biggest reasons is to meet that special other half. In Sweden, as in most Western societies, bar-goers follow a social pattern where people of the same gender form small groups and arrive together. Men go out in groups of men. Women go out in groups of women. It is therefore likely that the stream of bodies that enter the bar at any given time are \textit{mono-gender}; either male or female. Furthermore, we know one distinct difference between the average female and male body—the height differs. Thus, the females and the males have different sensomobility. This sensomobilitive difference of height attaches itself to objecticitive difference of height. By a differentiation of the height of the bar we could therefore, if not control, at least direct the streams of customers. Women have a tendency to choose the lower section, and men have the tendency to choose the higher.

\textsuperscript{11} Ibid., I, A Key to Understanding.
By this general placement of bodies, we created a visual attraction between the sections, an arena where the interest was not directed at the field, but towards the opposite stand. This instigated the last little pirouette of the dance. As you can see in the plan, the bar is disconnected from the kitchen. This is intentional. In dialogue with our clients, we succeeded in convincing them of this solution, even though it would be rather cumbersome for the management. The preferred design here had been to connect the bar and the kitchen, providing easy access. However, this would have, interrupted the sensomobilitive dance between the bodies in the space.

Dear Guest: As the evening goes on, the attraction over the bar escalates, and you finally muster the courage to approach the subject of that attraction. Unfortunately, in this case, courage is directly linked with distance. It is likely that you do not dare to follow through with your intention.

If the bar had been linked with the kitchen, you would have then been trapped in a cul-de-sac. Here the only option would have been to backtrack—in shame. The little passage left gives you the option to, with grace and dignity, return to the starting point of the circle as if nothing had happened.
It is of importance to point out two aspects of this design narrative. First, the design is, in this case, a close collaboration of the designer and the bar owner. This weaves the dialogue tighter both formally and socially, as the practice and the attitude of the gardrobier and the bartender has to change, and only some of this social transformation can be traced back to the corporeal alterations, as in the glass tunnel or the different placement of the cloakroom. For the transformation to take place, the bar had to provide hotdogs at low cost inside and the gardrobier social role has to change. This change can be done by contract. The garderobier has to fill a position where he acts as more of a host. Second, the translation takes place on all three levels of knowledge, objecticitive, sensmobilitive, and textualitive.
For example, the relationship between glass and the body is not only changing the guard’s relationship with the guest, but the transmission changes and different types of statements are activated. We cannot see this shift as one sign shift to another, but as a change of interrelationship of different kinds of statement. Instead it is taking part on a sliding degree of the relationship of language, object, and body. This characteristic—that we can perceive design transmissions as different but almost interchangeable statements—makes it is easy to mistake design as mono-aspectual activity. By studying design from only one of these aspects, the subject will likely be understood as merely body,
or language, or object: If design is viewed only as an organic system—as body—it is likely that unwanted subjectivities, subtexts, will emerge. Viewing design as merely corporeal—as object—deprives one of the understanding of a world where objects do not only exist for the sake of objects. Viewing design as purely semiotics—as a language—diminishes its linkage to the body and the object, and we will literally and inevitably bang our heads into the wall as the corporeal aspects of the body and the wall are not likely to shift regardless of what we call it. The design narrative helps us to navigate this world of statements.
The Didactic Design Team in Platå Bar
Matters of Ideas

I think it is easy to say that no other project out of my portfolio of work has provided me with such a profound understanding for design’s socio-corporeal network. In some respects, we can understand design as a *sending* of statements in a structure of two double-directed channels (figures 1 and 2). If we put these channels in a diagram, the vertical axis shows the relationship between the designer and the user, and the horizontal axis shows contextual relationships of fabrication.

In the vertical axis, we find a focus on client concerns, such as program and empathy for the *Other* (or third party). In the horizontal axis, we find the relationships of tools, techniques, and technologies. This structure was as true when Imhotep constructed his famous pyramid as it is for the work around the latest Apple computer. In order for a designer to *make*, he (she, they) must be connected to the user or users; however, this connection intersects with an axis where production is made possible. On this, the vertical axis, we find the context for the fabrication, thus the acts of design become *makings* of *makings*. Design as praxis gravitates toward the intersections of these two axes. Design is, therefore, not a monologue of ideas. It is an act of dialogue or (*trialogue* or *a quatrologue*…), a dialogue of bodies and objects. The didactic design team methodology is a way to not only acknowledge this dialogue, but to embrace it. During the work on *Platå Bar*, we never called its organization a didactic design team—the name was coined retrospectively. However, it was in the collaborative spirit around *Platå Bar* that we found an embryo for ideas that later have been implemented into other projects and teachings. Thus the design laboratories, *the Broken Horizon*, *On Bamboo*, and *Tasmeem—Hybrid Making* are manifests of the design strategy found in *Platå Bar*. 
The Team of Actants

The didactic design team methodology intends to bring the described two axes together into a comprehensive structure while simultaneously expanding the area of intersection. The aim is to efficiently employ the involved actant’s knowledge (textualitive, objecticitive and sensomobilitive) into the process. In the work with Platå Bar, this came as an answer to the extremely short design/production time in relation to a complex program. In this framework, we had to question traditional standards of how to use and apply tools and how we saw the roles and hierarchy of the involved actants. To implement a new structure was, of course, not without problems; but given the unique and time-constrained situation, it went surprisingly well. To understand why this was, we can point to a couple of specific factors:

- Shift of network;
- Extensive full-scale prototyping;
- The proximity between designers and other craftsmen.

First, the team that was put together was not comprised only of the usual suspects; the team was not based on an ordinary construction crew. Tomas Bunnfors, the project leader, and Melker Darpö, the foreman, were both seasoned sailors. They had, between themselves, crossed the Atlantic more than ten times. From sailing, they were used to a similar structure—to building the ship while sailing it. Their network and attitude was, consequently, partly to be found amongst shipbuilders rather than building contractors. This shift of network is similar to when Frank Gehry connected the aircraft industry to bypass structural retardation in the construction industry: “We were doing a building and I had trouble representing some of the shapes I was playing with. ... Within a year we hired five aircraft engineers, who are working in the office.
They helped us at that time accommodate the software to the construction industry.”¹²

Second, together with the construction company, Echerud Exhibits, I had, in a series of earlier exhibition design projects, worked through extensive prototyping to communicate concepts. These exhibition projects, where we were designing exhibition stands all around the world, had an extremely short on-site time. The construction crew, more often than not, had only a couple of days to a week to assemble the exhibition. In order to test the design, we had a habit of pre-building the exhibition stand back home before shipping it out to the final destination. Subsequently, a methodology was already in place.

Third, as a departure point for the design process we established an on-site office. The designers were present at the local site from day one, during the messy reconstruction phase. The office—where the vodka bar is now located—became a design hub during the hectic eighty days of this project. Let us come back to this. By being present already during the initial demolition

¹² MORE ON FRANK GEHRY - A few minutes with Frank Gehry, Builders Exchange Magazine 1/01 December 2002
phase, we not only gained valuable knowledge of the structure of the building we were operating in, but we also established a really quick and direct relationship with most of the other craftsmen involved in the project. Usually in a project with the same scale as Platå Bar, the dialogue between the designer and the physical making of the object is remote and done mainly through drawings and documents; transmissions are often seen as textualitive. Through the proximity, we were able to create a lot of ideas, and the concept was tested in full scale, the dialogue became direct. It was not unusual for a carpenter or a painter to call the designer directly or to just come by the office to discuss a particular detail, concept, or solution. By that, a lot of knowledge was generated, accumulated, and transmitted into the final object, Platå Bar. These three preconditions gave us a foundation for the process, a process in which we, in Lewis Carols words, used “the country itself, as its own map.”13

13 Carroll, Complete Illustrated Lewis Carroll, 556.
Laboratory versus Productivity

There are, for sure, differences in technology and techniques between the disciplines of design. However, the principle of the double axes diagram is still representative whether we discuss typography or city planning. In design processes where the objects are less complex, the network also tends to be smaller and more comprehensive. For example, graphic design tends to gravitate towards smaller objects with shorter life spans than, say, architecture. This, however, does not automatically mean that all the processes in the former discipline are less complex than in the latter. We find gradients of complexity in both the vertical and the horizontal direction of the diagram. We will come back to this principle later. However, in order to understand the particularities of Platà Bar let us, first, dissect a typical process. This laundry list of seven steps of design is taken from a run of the mill textbook\textsuperscript{14} of design:

1. Programming
2. Schematic design
3. Design development
4. Construction documents
5. Bidding of construction documents
6. Execution of project
7. Post occupancy evaluation

The answer to the initial question posed to the designer—\textit{can you design a restaurant/café/nightclub?}—is here turned into a system of disparate phases, a methodology that follows a linear and compartmentalized path. Knowledge is supposed to be accumulated successively; each phase is supposed to build upon the knowledge from the previous one; each phase is supposed to set up the knowledge needed for the next one. Albeit while there are some feedback loops, the phases are thought of as autonomous functioning almost in total isolation from each other. Design is seen as a system of signage that can clearly

\textsuperscript{14} Space Planning, for Commercial and Residential Interiors
be sent from one phase to the next. This idea is further amplified through a believed interchangeability of the designer in the process. It is common that the work in the different phases can be conducted by different designers. This is possible if the process is seen as a series of autonomous parts—completions. These completions are thought to communicate without friction, without information loss, in-between each other. The design process in this *Fordistic* assembly line is controlled, predictable, and measurable.

The drawbacks of this predictability are the narrow bandwidth of knowledge which is communicated; the minimal feedback; the diminishing opportunity for *happy accidents*; and isolation and separation of the participating actants. Communication is seen as documents: drawings, specs and programs; rarely as models and even more rarely as prototypes. Prototypes are often seen as tools for internal dialogue between the designer and the object. There is no way to stack, stamp, and archive models and prototypes. The media used favors textualitive rather than objeticitive and sensomobilitive transmission; i.e. most communication between the phases and the actants are sent as language. This radically decreases the bandwidth to mono-sensory transfers. More often than not, in a project of the same scale as *Platå Bar*, the designer is separated from the physical *making* of the object. To make things worse, the process operates in a bureaucratic, legal, and economic superstructure, sorting the transmissions into a hierarchical pecking order. Legally, writings are often seen as more important than drawings, and drawings are seen as more important than models. In this bureaucratic paradox the more abstract, mono-sensory, and remote from the final object, the more important the transmission becomes. This conceptual disconnect between the process and the control of the process is similar to the already discussed disconnect between *making* and thinking.
The Country Itself as its Own Map

In Platà Bar we did not have the luxury of time that the above process requires. With eighty days to go and no good drawings of the local—the place had been reconfigured in an ad hoc manner since its opening in 1924—we made the radical decision to start the phases of programming, schematic design, design development, construction documents, bidding of construction documents, and the execution of the project on day one. All this happened as the first demolition crew entered the facility. “Demolition crew” is, however, a misnomer. Using the place itself as a drawing or an excavation site, this work took on an almost archeological attitude. In the demolition, we found hidden qualities and lost items. Some items were in the nature of curiosa, such as the old punch clock—a timepiece that was used to track work hours—which was mysteriously found hanging in the ceiling. Apparently an old staircase had been removed and the hole in the ceiling had been filled in using a part of an old wall. Whoever had done this had simply not bothered to remove the punch clock from the wall. In the same category was the old ventilation-shaft that had been left open to the elements at the top. A fifteen centimeter square hole was slashing through the four story building, showing a small section of the sky above. We also found an array of knickknacks and items such as classical miniature columns; carved eagles, owls, and other wooden animalia; brass chandeliers; heaps of exotic flowerpots; and tons of curtain fabric with which the previous owner had crowded the place in an attempt to attract a bigger clientele. These were sold or given away to the craftsmen working on the project.
Figure 14.
The entrance point of Platà Bar.
However, in the excavation we also uncovered materials we could reuse. The most prominent was the old slate flooring downstairs. This flooring was a little damaged and did not cover the whole downstairs. In another process, this flooring would probably have been put into the same pile as the wooden eagles and exotic flowerpots. However, by combining the slate tiles with a new concrete floor we saved this beautiful flooring. If there had not been a direct connection between the design and the demolition, dormant qualities would not have been unearthed. These qualities go beyond the tangible things of materials and objects that can be communicate through drawings.
Part of this research has been to return to old projects and instances in my praxis and reflect upon them from the aspects of the introduced questions of how society makes **makings** and how these **makings, make** society. As stated above, few project in my portfolio have had such a big impact of how I define myself as a designer, researcher, and educator—how I define my praxis. In the chronology of the design labs in this research *Platå Bar* is the first. The findings in work with *Platå Bar* have direct guided explorations as *the Broken Horizon* and *On-Bamboo*. The strategy of the **making** of *Platå Bar* was developed as a reaction to a crammed time line, as a happy accident; however, this PhD research I have had enabled me to return to these happy accidents and to understand why and how some of them worked and how and why I am still utilizing the findings in my praxis today.

Figure 15.
The entrance point of *Platå Bar* after the 2011 restoration.
Furthermore as a laboratory Platå Bar was not a passive study based on interviews and old memories. About a half year into my PhD, by coincidence, I was approached by the new owner of Platå Bar, Simon Özbeck. The design now had been in operation for more than ten years. Özbeck now planned to make a rather big transformation of the nightclub. The plan was to minimize the existing kitchen, and expand the restaurant for about 100 new guests. The interior was a little run down; however, the main ideas were still intact. The only big change to the design, except the expansion of the restaurant, was a move of the cloakroom to the far end of the restaurant. This enabled us to expand the capacity while still keeping the initial concept of courtesy intact. This phase was open under four intensive days of April 2011. In the time I am writing this text, Özbeck have asked me to start to think about alteration of the second floor of the nightclub—Platå Bar is indeed an ongoing research.

Figure 16. Another view of the entrance point of Platå Bar after the 2011 restoration.
Bibliography


———. “The Didactic Theater, In the Laboratory”, n.d.


“Sveriges Officiella Statistik, Statistiska Meddelande”, n.d.
The Broken Horizon
Introduction

In the 2005-06 academic year, I was invited to the University of Nebraska to be the Endowed Chair, the Hyde Chair of Excellence in architecture. In the invitation, the university asked me to execute an art research project. For the project, I proposed a small pavilion or folly to be built on the University of Nebraska-Lincoln campus. The project was based on my intention to steer education into a more making oriented focus, a design laboratory. In the project, I wanted to explore making and manufacturing as tools of design. The process was, therefore, envisioned more as an act of a multi-sensory making in full scale, rather than an act of making through the traditional representational tools of design such as drawings and renderings. Consequently, the process had to be seen as an experimental and organic team effort. The outcome of this process became the Pavilion of the Broken Horizon, a structure designed and built by me and 13 students from the architecture school, which for a brief period of time had its home just south of the architecture school in Lincoln, Nebraska.

In the process of the Broken Horizon, we find a direct correlation to the modus operandi of the design laboratory, Platå Bar. As a design laboratory, the Broken Horizon gave me an opportunity to further develop the ideas from Platå of the didactic design team – the structure in which design takes place from the beginning to end in the process of making, and all parts of the structure are seen as a part of the design effort. Through the establishment of a didactic design team, the channels of feedback are broadened throughout the making. It is a process of design built on constant full-scale prototyping and multisensory testing. In the Broken Horizon, I saw a chance to develop this

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1 “UNL | College of Architecture | People.” From UNL webpage: Hyde Chair of Excellence is available to creative architects, designers, and educators from a variety of backgrounds with unique credentials. The visiting Hyde Chair attracts emerging voices in architecture from both practice and teaching. Former Hyde Chairs include Wolf Prix, Michael Sorkin, Diane Lewis, Randy Brown, Paul Preissner, Doug Jackson and Chris Abel.”
2 Granberg, “The Didactic Theater, Platå Bar.”
attitude in an academic environment, a **makings of makers of makings**. The framework of the research questions in *the Broken Horizon* thus stemmed from the idea that full-scale **makings** can operate as pedagogical models in themselves.

By introducing non-drafting strategy, the laboratory enabled me to visualize and unearth ruleworks of how statements transmit in design in general and in particular **making** in full scale—*one-to-one*. **Making** in one-to-one enables a closer communication between: designer and designer, designer and object, designer and client, client and object. The departure point, of no drafting, would prove itself able to generate successful instances of design, as well as creating a lot of friction between the *object-and-its-process* on one hand, and the *systems-of-bureaucracy* on the other. On several occasions, we were asked by the bureaucratic structures of the university to depart from this initial research question in order to “*get the damn thing built.*” I am, however, proud that we succeeded to finish the project with the strategy intact, as it gave important insights in how the process of **makings of makings** operates.

I have divided this text into two parts in an attempt to examine the two aspects of design: that of *anthropology* (design as the knowledge of societies), and that of *crafts* (design as the knowledge of how to put things together).³⁴ The first of the aspects is understood as a **design narrative**,⁵ an attempt to connect the designer to the user. This connection operates with **statements** transmitted mostly in the vertical axis of the *media/message diagram*.⁷ In this vertical axis the communication, the **making**, is transmitted through the object to create a **making** (behavior, pattern action) in a society. A design narrative is thus a forecast and simulation of the socio-corporeal outcomes of **makings**. In the

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³ Granberg, “The Didactic Theater, The Makings of Crafts[men].”
⁴ Granberg, “The Didactic Theater, The Makings of Anthropolog[ists].”
⁶ Ibid., pt. I, Naming and Framing.
⁷ Ibid., pt. II, Interobjecticity.
latter aspect, the didactic design team rather emphasizes thinking in the horizontal axis where the making of the object takes place in a manufacturing network of human and non-human techniques and technologies.

The attempt for this study is to understand and broaden the intersection between these two axes. In the first part of the text – A design narrative of Gravity – the focus is on how to tell a story, how to communicate the idea of being above as a design task. In the second part, the focus is the manufacturing of the corporeal object. Given that this work acknowledges design as research in its own right, the design methodologies described here are seen as research methodologies in their own right.

Figure 1.
Diagram of the message axis, designer to user.

Figure 2.
Diagram of the media axis, object/text to object/text.
A Design Narrative of Gravity
The Plot

Relative to the ground plane, one could think of three specific bodily conditions: under, on, and above. Each of these conditions constitutes a particular relationship and, therefore, gives us a particular spatial understanding that guides us to particular spatial designs. The Pavilion operates in this primary—almost naïve—architectonical sense as the relationship between the human body and the ground plane. From the notion of the “loci,” on and above, we developed a spatial narrative or a plot. In addition, the project aimed to develop an architectural building laboratory in which research was done through the act of making one-to-one prototypes, bypassing the conventional representation technique by building, rather than representing, architecture. These two concepts, the body/ground relationship and the building laboratory, were the guidelines that, after one semester of intense labor, finally led to the small installation on the University of Nebraska-Lincoln downtown campus known as the Broken Horizon.

Design performs in the modality—the sliding scale—between signage (textuality) and direct bodily experience of the object (objecticity); i.e. design produces statements of both textuality and objecticity. This is undoubtedly apparent for the relationship with the ground plane and concept of the above. A staircase can be seen both as a device to carry physical loads of bodies between stories in buildings, and as a symbol (or signage) for the will, the desire, to ascend (or descend). It is important, however, not to understand this phenomenon as a dichotomy. Signage and bodily experience are not opposites; they do not exclude each other. The physical-weight-carrying-staircase can simultaneously operate as a sign. Working with the plot of the Pavilion, this duality could not be neglected. Although restricted to a small and rather low-rising construction, the intention was to find (make) a space that directly affects

8 Ibid., pt. I, Naming and Framing.
the body in addition to operating as a symbol—a space that both connoted and denoted elevation. This part of the essay is accordingly dedicated to describing how *the Broken Horizon* operates as an exploration of the *above*, an experience of *being* on site (in Lincoln, Nebraska; the campus; the Pavilion) as well as in the *above*, a mental construct in which the Pavilion is a part of the ongoing stories—the contemporary myths—that hold a society together.
Designing in Gravity

I’ve seen things you people wouldn’t believe.
Attack ships on fire on the shoulders of Orion. I watched C-beams glitter in the dark near the Tannhauser Gate.
All those moments will be lost in time, like tears in the rain.
Time to die. Roy Batty Scott, *Blade Runner."

In a mythical sense (the Heavens, Cosimo’s kingdom in the canopies in Italo Calvino’s *Baron in the Trees*, the secluded cave in the mountain where the master achieves enlightenment), the *above* exists as a well defined loci. These places have a virtual character; they have been visited by almost no one. Yet they are vivid and significant elements in the stories that weave together our entire cultural fabric. The *above* has historically had a significant role in storytelling and myths, e.g. the myth of Daedalus and Icarus. The *above* as a place specifies a hierarchical level in storytelling. This is still vivid in our modern myths and stories in literature, movies, and even computer games.

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9 Scott, *Blade Runner.*
10 Calvino, *The Baron In The Trees.*
The death of the last renegade replicant Roy Batty (Rutger Hauer) in the pinnacle scene of *Blade Runner*\(^{11}\) symbolically occurs in the *above* – on a roofscape overlooking the dystrophic urban fabric. Just before his measured time runs out, Batty goes through a mental transformation; the placement of this metamorphosis on the rooftop is not random. The scene frees us from the confines of the labyrinth-like ground plane and lifts us up above the city towards the ultimate *above* – outer space. The location reflects the *epiphanic* shifting of Batty’s character and condition. The fearsome warrior dies peacefully, his body at rest, no longer engaged and attached. Batty’s release of a dove at the moment of his death further strengthens the disconnection from the ground plane.

\(^{11}\) Scott, *Blade Runner*. 
Designing a structure, such as *the Broken Horizon*, that concerns itself with the body’s position vis-à-vis the ground plane, is, by definition, an exploration of gravity, and our understanding of gravity and height as phenomena. Gravity weighs heavily; it affects every aspect in our daily lives. As long as we are not in outer- or cyber-space, it is one of the most significant forces we operate by, with, and against. And yet we take it almost for granted. Although constant in the physical, corporeal sense, gravity, in an architectural sense, can be manipulated as a variable. Or, to be more precise, gravity can be more or less activated in the manipulation of objectivity and sensomobility.\(^{12}\) With the exception of amusement park rides—designs which try to activate gravity’s effect upon the human body—more often than not designs tend to reduce gravity’s effect or reduce human awareness of gravity. Innovations and manipulations such as flattening of surfaces, higher and safer hand railings, soft rugs, and rubber-soled shoes aim to reduce and deactivate human awareness of gravity. The experience of height and gravity is not directly correlated to a measurable distance; it is a sum of physical and psychological factors. The activation of height can therefore be seen as manipulation of objectivity and sensomobility. This activation/manipulation becomes evident when we compare some aspects of the medieval and contemporary concepts of height.

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Elevator or Elevated?

A thought: Few innovations have had such an impact on the way we perceive gravity and architecture as the safety elevator. Elisha Otis’s innovation completely altered the way we build and perceive our cities. In fact, one can argue that gravity has not had nearly the same effect on society since the introduction of the elevator.

In some areas of Manhattan, where canyon-like streets are overpowered by skyscrapers, you can almost get the same feeling as you have in dense Italian medieval tower cities, such as San Gimignano. However, there is a tremendous shift of the notion of height and gravity from one towered city to another. This is a deep structural shift, not easily detectable at first glance. It goes far beyond the different scales of the two places. The scale is the symptom or effect, rather than the cause. In order to understand what this shift constitutes, we have to penetrate the facades, and try to comprehend some of the differences in the technology and techniques that formed the two places – these cities of towers.

Figure 6.
Time Square, New York.

Figure 7-8.
San Gimignano, Italy.
The medieval towered city springs out of the act of warfare. In the case of San Gimignano, this warfare mainly occurred between different families within the city itself. The technique of war manifests itself in the technology of architecture; to be higher than one’s neighbors in the turbulent city was critical for the survival of the family. The towers of San Gimignano signified power – height creates a vantage point. Height is directly linked to strength. A common consequence of defeat for a family was that their tower was knocked down.

We can of course read the tower as a symbol of power, but it is also important to consider the act of being in the tower and the above in a corporeal sense. In the medieval tower, the level you are on is a matter of life or death. This is not the case of the billboard towers at Times Square in New York. These towers are generated with other aspects in mind. The towers of New York connote, rather than denote, power. We can of course understand finance and advertisement as a kind of battle or war. However, it is a war often better fought by methods other than seeking vantage points of “higher ground” – being in the above. No, we have to understand the Manhattan towers from another point of view. The idea of the tower has shifted. Rather than an object to look out from, it has become an object to look up on. This “up on” has to be understood, not only as a viewing that takes place on site, but as an abstract, detached, and removed activity.

The towers of Manhattan were built during the time of the Eiffel Tower, world records, and world exhibitions (exhibitionism); or as the car manufacturer Walter Chrysler put it, “I said to the architects: ‘make this building higher than the Eiffel Tower’ that was the beginning of the seventy-seven story Chrysler Building.”13 Height was abstracted into numbers meant to be printed in exhibition catalogues and guidebooks, a contest of numbers as the Empire State Building’s rental manager, Hamilton Weber, describes, “We thought we would be the tallest at 80 stories. Then the Chrysler went higher, so we lifted the Empire State to 85 stories, but only four feet taller than the Chrysler. Raskob was worried that Walter Chrysler would pull a trick - like

hiding a rod in the spire and then sticking it up at the last minute.”14 This reduced gravity to an almost virtual entity.

When the Empire State Building opened in 1931, it boasted an almost unbelievable height of 443 meters. The building itself, however, is just 378 meters—the crowning mast accounts for the remainder of the height. This mast was presented as a docking device for airships. The idea of an airport for the fragile and highly explosive hydrogen filled airships in the windy conditions in the middle of a city of millions of inhabitants must have been a pipe dream. It was tested once in 1931 when a small airship made short contact with the mast with large effort; a stunt that was never repeated due to the extreme conditions at that elevation. The airport idea was, at best, an appeal to reason for an anxious board that must have been reluctant to invest dollars for the whim of boosting the height. The approximately 62 meter device is not likely to have ever been understood as a functional airport, but rather as an assurance that the building would achieve the height record. The Empire State Building’s sibling, the Chrysler Building, pulled a similar trick a couple of months earlier when an uninhabitable crowning spire 27 meters tall (equivalent to a nine-story building) was hoisted up in a surprising one-and-a-half hour coup. The piece had secretly been assembled inside the structure, surprising its competitors and guaranteeing its victory in the world record race. In the docking device of the Empire State Building’s mast, as well as the spire of the Chrysler Building, the strategic “higher ground” of the medieval tower – the above – has turned into an entirely uninhabitable entity.

14 As quoted in: Ibid., 31–32.
The Dance of Unbalance

So how can a building manifest the above in such a small and contemporary project as the Broken Horizon? As mentioned, gravity and how it is activated is the key.

We comprehend gravity by a multipart interaction of body and mental functions—balance. In the corporeal sense, balance can be understood as the extremely complex sensory-motor process where gravity, velocity, bodily configuration, and the center of gravity are calculated and under continuous reevaluation. A moving body has to react and reconfigure itself constantly, yet the act of balancing is often totally unconscious. The daily walk to the corner shop for a coffee and a doughnut is not a journey filled with conscious thoughts of how to keep one’s balance. Balance just is. The complexity of the operation, however, is evident when machines are “trained” to comprehend the concept of balance. Even to perform such a simple task as “walking” demands sensomobilitive sophistication. Furthermore, to add to the complexity of the subject matter, balance can be understood as a mental construct. Once again we can see the phenomenon in a sliding scale between signage (textuality to sensomobility) and direct bodily experience (objecticity to sensomobility). Consequently, the sensation of balance and unbalance can be activated throughout architecture in a multitude of ways.

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A departure point for the *above* in the project is the bodily awareness of balance; we strove to create devices for making balance detectable as a conscious act. We were, therefore, searching for moments in the plot where the body had to be made aware of gravity. By situating the ascending body in and out of balance (in an architecture where the body’s balance stands in direct relationship with the balance of the structure), the body’s unconscious sense of balance will not be taken for granted. The body might not always be aware of (or that it is in) balance, but it is certainly aware of unbalance.
Elevated Landscape

A thought: When a little child is learning to walk, he does not do it as an intellectual process. Since the act of walking is, in every sense, novel, the child forms a sensory-motor relationship with the supporting surface which is open and direct. The ability to understand the world in terms of abstract correlations between signage and object develops later. This trajectory of learning, from concrete towards abstract, applies to almost every new sensory-motor activity. We do not learn how to rollerblade, ski, bike, or snowboard by reading manuals or books, but by doing. In this doing, our relation to the supporting surface is inevitably transformed. This transformation can be understood from the same concrete-to-abstract trajectory.

Figure 11. Completing the web of the elevated landscape, Aaron Tvrdy.
As one enters *the Broken Horizon’s* canopy there is a point of threshold, a moment where one has to let go of the *grip* — the grip of one’s hands as well as one’s visual and mental grip. In this moment, one will enter a *strange but beautiful landscape*. The body is forced into spatial ambiguity; the woven surface of the polyester straps gives very little familiar visual point of reference. The double surface (the straps on the top and the stretch metal below) and the blue color of the ribs interfere with the eye’s perception of depth; the elasticity of the web puts the feet on uncertain footings; and the hands have nothing to grip. Very few people enter the canopy still standing. With few or no familiar reference points, similar to when a child is walking for the first time, a new relationship is formed with the supporting surface. We are facing an unfamiliar terrain and we shift reading-modes; it becomes less abstract. Since we do not trust our experience to correlate to ordinary cultural and architectural agreements, the correlation becomes direct. One squats down upon the entry of the canopy, and is, in fact, “forced to” by the lack of balance. This can be understood as translation from a world where transmissions are textualitative through icons and symbols, towards a world of objecticity. The action of the body in the canopy does not stem from a learned behavior. Nor is it due to the interpretation of imagery. It is the objecticity of the canopy surface — its inherent unbalance — that makes one squat down, a behavior that stems out of an *ex-corporation* (a behavior due to factors outside the body), rather than an incorporation of body and surface. This is a subtle programming according to the plot. The body will find footings; the body will find seating; and the body will find a new balance. And, furthermore, according to the plot, the body will find a rather horizontal world—a world of recliners.
A Chair is a Chair is a Chair

A thought: A chair is both an index and a tool for sitting; a stair is an index and a tool for ascending; a door is an index and a tool for entry. However, the act of sitting does not necessarily require a chair; the act of ascending does not require a stair; the act of entry does not require a door. Furthermore, a chair does not necessarily have to permit sitting; a stair does not have to permit ascending; a door does not have to permit entry.

Well reclined in the canopy, the sliding scale between direct bodily experience and signage is becoming fully noticeable. The elevated landscape is an intricate play of language and found objects. Hiding here are some ready-mades, some icons. Into the canopy’s surface is woven a secondary order; the patterns of six of our favorite chairs and recliners are merged.

This interobjecticity became an intellectually stimulated game for a number of reasons. The forms of the classical furniture woven into the surface subtly guarantee the targeted programmatic aspects of horizontality. Furthermore, the furniture is an index of the body, like footprints in newly fallen snow operating as reassurance to the explorer that life still exists around him, as well as operating as excellent places for him to step. The selected chairs all spring from the act of seating and reclining in our culture. Stripped of their iconic framing, trapped in the webbing, each object must sink or swim by its inherent qualities – its objecticity. Upon the canopy, one makes a chair by finding a chair. The chair is simply a good spot to sit. One can find a seat in Le.

16 Ibid., pt. II, Interobjecticity.
Corbusier’s lounge chair, Aalto’s recliner, or find a new chair in-between. The notion that all of these grand designers had to compromise in a space no bigger than 15 by 15 feet was a feat that in real life had been virtually impossible.

In this novel landscape of the *above*, the surface has become a habitat in itself. As previously mentioned, our focus has been shifted, but this shift is not only directed to our experience of the surface. This part of the architectural plot—the horizontality of the body—also strengthens the relationship with the sky above. This is a conscious act of contradiction. Usually we seek higher ground to get a better view of the surroundings, as in watchtowers and ships lookouts. In the Pavilion, the sensation of elevation is instead fabricated in the relationship of the canopy surface and the sky above. The horizon almost ceases to exist and gives way to a greater *above*, just as Batty’s monologue attaches the rooftop to deep space.
The Fair Maiden in the Tower with an Elevator

Let us get back to the moments leading up to the roof scene in Blade Runner. The Blade Runner, Rick Deckard (Harrison Ford), has until now been in pursuit. One by one he has hunted down and killed four out of five renegade replicants. Facing the last renegade, Batty, the tables are turned. Deckard, the hunter, becomes the hunted and tries to escape by the rooftop of an abandoned building. In this escape, every inch in elevation is an effort and counts painfully. The struggling, hostile, and engaged bodies (Deckers and Batty’s) of the escape scene are contrasted in the elevated bodies at the end of the rooftop scene. Being above (above-ness) is emphasized and understood through the effort of getting there. Through this our reading of height and gravity has turned into effort, pain, fright, desire, struggle, and security. Height has become a symbol.

The same phenomenon is expressed, although a little differently, in the Grimm Brothers fairytale Rapunzel. Here the above is deprived of its usual connection – the typical tower staircase. This absence emphasizes the height of the tower as well as the attraction between the fair maiden Rapunzel and the prince. The entryway is substituted by Rapunzel’s long hair. The objecticity of the fragile human hair connects and separates the lovers on two planes: weight versus fragility and desire versus gravity (a structural diagram I would love to see explained in the building codes). The elevation is fully understood through the balance act inherent in the prince’s entry. The prince is in a system where the objecticity of the architecture in itself carries little or none of his weight (balance). His body, his sensomobility, is balanced against the tiny body of Rapunzel. His weight is held by the fragility of her hair. In the story, we are made aware of the height. It is described and exposed in a direct way as the impact of gravity on the prince’s weight in contrast with the maid’s fragile hair; i.e. the statement of gravity is amplified.

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17 Elevated here refers both to the bodily position on the roof and to the mental state of Batty ending
The difference between the planes is further emphasized by the fact that the connection does not permit a complete two-way communication. The two lovers are not acting on the same terms. The prince exists on both planes, whereas Rapunzel is stuck in the above. The prince desires Rapunzel in the above. Rapunzel desires not only the prince, but also his whole level – the ground plane. The desire whence on the ground plane is the above. The desire whence in the tower is the horizon – the ultimate representation of the ground plane. The cruelty of the prison tower is that it permits a display of the prisoner as well as it deprives the prisoner, spatially but not visually, of the ground plane.

The fair maiden is harder to find in the modern tower. The context of the plot has transformed and therewith the plot itself. The introduction of the elevator radically changed the meaning of height within buildings; the relationship between the objecticity of the tower and the sensomobility of its occupants has been altered. In *Delirious New York*, Rem Koolhaas expresses this condition of the Manhattan towers: “[E]ach…floor is a separate installment of an infinitely unpredictable intrigue…” In the modern tower, the effort, the desire of height is lost in the dark core of the elevator. The bodily experience of gravity is secondary. A visitor in a modern tower just finds himself on a plane any plane. Besides the extremes of the ground floors and penthouse there are few differences. The connection (and disconnection) with the ground plane are similar regardless of where one is located in the system. Being on the 27th floor or the 39th floor of an ordinary Manhattan skyscraper is not, by default, two different architectural experiences; the hierarchical value of height is erased. In the Manhattanesque stacking, internal placement of activities becomes

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19 Koolhaas, *Delirious New York*, 157. Extended quote: *In the Downtown Athletic Club each ‘plan’ is an abstract composition of activities that describes, on each of the synthetic platforms, a different ‘performance that is only a fragment of the larger spectacle of the Metropolis. … – in a sequence as random as only an elevator man can make it – … Such an architecture is an aleatory form of “planning” life itself: in the fantastic juxtaposition of its activities, each of the Club’s floors is a separate installment of an infinitely unpredictable intrigue…”*
arbitrary in relation to the distance from the ground. In this vertical diagram, circuses, swimming pools, love, garages, elephants, offices, prisons, crimes, compassion, solitude, restaurants, temples, etc. can all be found randomly assembled. The statement of gravity is *tuned down* to the numbers on the elevator buttons.

A thought: *In the towers of Manhattan, Rapunzel can be anywhere. The prince is blindfolded; the architecture holds no clue where the fair maiden is kept. In the towers of Manhattan, the prince ends up reflecting himself in a mirror in the 27th floor gym; Rapunzel cuts her hair at the French hairdresser in the 39th floor spa; and poor Batty dies unseen in the mechanical room of the elevator.*
Desire of Elevation

The columns of the Broken Horizon touch the ground lightly; the awareness of the above in the structure is mirrored in the image of the above in the elevation. The heavy canopy is balancing on thin supports, as Rapunzel’s fragile hair contrasts with the weight of the prince. In an Italian variation of the Rapunzel fairytale, The Canary Prince, the means of entry to the above is not the girl’s long hair, but the prince’s ability to shape shift into a bird – a canary. Desire and the above are metaphorically linked by motion; the ability to fly. The Canary Prince is hereby clearly showing the powers of imagination. Although bound to a non-flying body, we have the imaginative ability to create the myths about the flying-body. We envision architecture aspiring to this ability. Although motionless, the Broken Horizon has the imaginative ability to move, like a walking machine or an animal that very carefully finds grip in an unknown terrain; uncertainty and unbalance contrast with agility and precaution. While standing still, the Broken Horizon travels.

This statement of restlessness (or will for motion) is not all due to imagery and mythological aspects. The Broken Horizon was, for a long time, in virtual motion. The inability to get a building permit for the favored location on the campus rendered the Pavilion homeless. It moved around in Lincoln and the state of Nebraska. From locations out in the cornfield, to lots in residential neighborhoods, the Broken Horizon was in a state of motion. The final issue of the location was literally unsolved until five minutes before the crane hoisted the prefabricated canopy onto the final and, from the start of the project, preferred site. This aspect of the project forced a somewhat unique approach to the design philosophy: to create a specific locus out of an undecided site. The structure had to be adaptable; the ground condition was unknown. We had to carefully find grip in an unknown terrain. The ball bearing joints gave us this adaptability of motion at a visual level. The impression of an animated structure plainly derives from the fact that, for the longest time, it was moving.

20 Calvino, Italian Folktales, 52–57.
When you entered the choreography of *The Broken Horizon*, you were involved in an architectural story – a design narrative, a plot of gravity and the *above*. This narrative is told by a series of carefully positioned events and acts, similar to how characters, scenes, and plots operate in movies and literature. Architecture as a narrative, albeit similar, is not completely equal to the semiotic systems of movies and films. Like any media, architecture carries its own distinguished rules and means of communication. The media of this essay and the photos are, by this definition, of course, a secondary experience of the Pavilion.
A thought: For the ones that experienced the Broken Horizon as intended; that had the time to rest for a while at the Broken Horizon; you might have experienced the stars at night elevated and reclined in the above. Maybe, just maybe, you also sensed the desire of Rapunzel and her prince, the freedom of Cosimo’s green kingdom, Daedalus’ first takeoff, Batty’s transformation.

Unfortunately it is not possible to experience the above of the Broken Horizon anymore. The Broken Horizon was born in a conflict between making of space and making of Bureaucracy. The fate of the Pavilion was sealed from the very first moment and Bureaucracy got its revenge.
The Poetics of Making
To Make Common

A memory: The Nebraska sun is boiling hot. With a slow motion the canopy is hoisted up in the air. The big crane is gently maneuvering the big object through the sky. It is hovering in mid air like the basket of a hot air balloon. It turns 90 degrees and lands again, about 30 feet from the starting point. As the canopy is making its last trip in the fearsome Nebraska sun, I get one of these rare sensations of triumph, of victory, that can come with a creative process. The sensation, of course, expresses that a year of labor is finally paying off and the dispute for the location is settled. It is a feeling of being in the middle of the action. But this feeling also comes from the fact that I am not alone in this. As I look around I can see that most of the actors involved in the creation are represented — the builders (students), campus officials, and the metal manufacturer — are participating in the act. I can detect my sensation reflected in all of them. It is a moment of shared achievement. It is a point in time where communication really means common making.

In the first part of this essay we have established an understanding of the narrative aspects of the Broken Horizon. In this we have mostly been concerned with the message axis of the message/media diagram. In this part we are going to see how this narrative is filtered, shaped through the manufacturing of the object, the media axis.
In order to communicate between the different actors of a construction project (clients, architects, craftsmen, authorities, public), we have developed a vast number of tools. The traditional toolbox includes drawing in different scales (plans, section, perspective, and details), models, prototypes, and written programs. Lately, with the introduction of the computer, the box of tools has expanded. We have developed virtual simulations, models, animations, and whole new computer aided production systems. This opens up endless new ways to plot the design process. The contemporary designer can make predictions and simulations of the objects that the classical designer could never imagine. By the same token, the new media, in some ways, lacks clear or inherent hierarchy. This often leads to an unclear structure in the architectural narrative. Fixed scales, points of interest, and story lines are no longer provided by the tools.

This part of the essay is therefore dedicated to the fabrication process of design in general and the Didactic Design Team methodology of the Broken Horizon in particular. Here the focus will be on how we built it rather than what we built or why we built it. If we isolate the act of design to the time of construction it can be seen as a system in itself, a system which forms unique rules, a system, albeit activated by the vertical message axis, mainly operates in the horizontal media axis in our diagram. The Broken Horizon can accordingly be perceived as a laboratory in which those involved in the making could test new and old technologies and techniques. Due to its modest size we were able to push the envelope in this rather framed situation to develop a new hybrid. It was possible to sketch directly in and on the object itself. The Pavilion of the Broken Horizon is, therefore, to be understood as a research study that was continuously given materiality in a full scale. It became a simulation of itself.
One-to-One

Mein Herr looked so thoroughly bewildered that I thought it best to change the subject. “What a useful thing a pocket-map is!” I remarked. “That’s another thing we’ve learned from your Nation,” said Mein Herr, “map-making. But we’ve carried it much farther than you. What do you consider the largest map that would be really useful?”

“About six inches to the mile.”

“Only six inches!” exclaimed Mein Herr. “We very soon got to six yards to the mile. Then we tried a hundred yards to the mile. And then came the grandest idea of all! We actually made a map of the country, on the scale of a mile to the mile!”

“Have you used it much?” I inquired.

“It has never been spread out, yet,” said Mein Herr. “The farmers objected: they said it would cover the whole country, and shut out the sunlight! So we now use the country itself, as its own map, and I assure you it does nearly as well.” 21 (Carroll, Complete Illustrated Lewis Carroll, 556.)

As previously mentioned, the process of the Broken Horizon was an attempt to bypass representations in order to emphasize a full-scale multi-sensory approach to design. The act of making directly in one-to-one-scale creates a unique relationship between the designer and the object. Without translation through other media, the architecture can be sensed rather than imagined. Materials, spaces, floors, ceilings, supports can be walked through, touched, viewed, balanced on, laid in, smelled, and tasted. This makes way for a sublime understanding. It opens up possibilities for a grander experimental sense. A lot of the detailing of the Broken Horizon is a direct result of this experimental philosophy. It is almost impossible to imagine some of the solutions coming to life in a more traditional drafting process. The ball bearing joints between the

21 Carroll, Complete Illustrated Lewis Carroll, 556.
canopy and the columns, the padded connection between the woven webbing, the wooden ribs of the canopy are some examples. These details were developed as prototypes according to the spatial plot, described – in the first part of this essay as a design narrative in gravity.

This methodology is present in most *makings* of indigenous societies. The villagers in the small Papua New Guinean village of Labu Tale (where I lived for a short period) construct their homes, their canoes, and their tools with a one-to-one attitude to *making*. The materials are taken directly from the site of the *making*. The *making* is here understood as a direct relationship between the object and the body.

There are, of course, good examples of this one-to-one attitude applied in contemporary design practices, too. In the work around the Green School in Bali Indonesia conducted by PT Bambu, bamboo members of the structures are carefully selected to fit into their individual location. In the summer of 2010, I met with PT Bambu’s project architects Effan Adhiwira and Macarena Chiriboga. Effan has been involved with an array of PT Bambu’s projects and Macarena did at the time work on the Green Village. Both these designers talked with passion about the process of their work as an organic process, and how the drawings and models are seen more as roadmaps than final

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Granberg, “The Didactic Theater, On Bamboo.”
suggestions. Selecting bamboo was essential for the final result. Effan Adhiwira has since then moved on from PT Bambu. However, he has brought with him the one-to-one attitude to his own practice as used in the design laboratories *On-Bamboo*. Working in bamboo lent itself to a one-to-one process.

However, currently, this method is applied less often as other means of simulation tend to be prioritized. This is very evident in education where, more often than not, the curriculum completely lacks the act of making, something that is reflected in how all levels of education is seen the world around. The understanding of tectonics is treated as a purely intellectual endeavor. The students are taught means, not ends. Unfortunately, since this makes the whole subject matter of architecture abstract, we have a problem conveying not only how to make, but also why we draw. However, we have reached a point where we have a chance to remedy this. Technology has reached a level where prototyping is not only easy, but also economically feasible. This became evident in the progress of the Pavilion.

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23 Ibid.
Qualities and Quantities

As it happens, when I was working for Archi-tect he sent me down to rearrange his jam-packed archives.

“Look,” he said, brimming with pride, “over 50 years of history, over 50 years of achievements.”

I was impressed — it was indeed a high stack of documents. As this mind-numbing job proceeded I found, surprisingly, that Archi-tect’s buildings that I regarded as high in quality did not necessarily have a large pile of construction drawings. On the contrary, it seemed like the lower the quality of Archi-tect’s building — the less control he had had in the process — the more construction documents he had produced. When I finished my assignment, I asked:

“Archi-tect why have you made all these drawings?”

He looked puzzled.

“To maintain quality… to maintain quality, of course!”

“But,” said I, “a building’s quality doesn’t seem to correlate with the quantity of drawing.”

“But of course,” Archi-tect replied, “that is not their purpose. Quality of drawings only correlates with quality of drawings.”

I guess it was my turn to look puzzled because he continued “When you get to be Archi-tect you’ll understand.”

I never did understand.

Recent computer-based advancements have fundamentally altered manufacturing. This shift now enables us to make a small series of customized parts swiftly and economically. If we want to fully harness the power this shift gives us, we have to rethink the object-making process. The practice needs to shift from two-dimensional drafting toward three-dimensional making. This advancement in technology advocates a (re)union of the different disciplines of design.
This shift is not done easily. The process of making is not a closed entity; it communicates with outside legal, economic, and political structures. This communication is mostly done in a two-dimensional form. In order to get permission for the Broken Horizon we were asked to produce a set of drawings to illustrate the Pavilion.

Bureaucracy asked:
“How do the edges of the canopy operate?”
We showed a 1:4 scale model. Bureaucracy looked a little puzzled and asked:
“Where are the drawings?”
We built and showed Bureaucracy a full-scale mockup and asked Bureaucracy to climb it to find out how the edges operated.
Bureaucracy said, “Wow!” and asked for drawings of it.

Needless to say, we did not ever see Bureaucracy climb it. Nor did Bureaucracy walk, touch, view, balance on, lie in, smell, or taste it; Bureaucracy… Bureaucracy demanded drawings.

Drawings, as transmitted statements, have become the only devices of quality control that Bureaucracy understands or trusts; they are the only tool on which the economics of a project can be based, and the only tool through which a democratic process navigates. One can stamp, stack, and track drawings. They
fit in binders and drawers, in offices and archives. Intended as representational tools, they have become more important than the objects they represent. Instead of guaranteeing high design quality, they operate the other way around. Architectural drawings have turned into laundry-lists of security measures, guaranteeing success in law courts, rather than pleasant spaces.

The method of representing three-dimensionality in a two-dimensional media gives way to generalizations, simplifications, and promotes abstract systems. There is, furthermore, a communicative glitch between the act of writing and the act of reading drawings. The time ratio between reading and writing is crucial for the success of a semiotic system.

How much time does it take the sender to build up a complexity in the message, and how much time does the reader have to read and unpack the same message? In order to comprehend the semiotics of drawings, we need to develop an understanding of the sender and the reader, as well as the time ratio involved in the stages of construction. Who is supposed to read the drawings? When and how are the drawings consulted? If the drawings are to guarantee quality, the “who” needs to include everybody involved in the construction process. Everybody—economic sources, clients, craftsmen, etc.—should be able to consult the drawings. In writing, we hope to communicate complex design intentions through these flat simplifications, intentions that we, with joy, spend hours and hours developing. Yet, all through my years as an architect, designer, and an engineer, I have not met any craftsman that, with joy, consults drawings for any long period of time. Furthermore, drawings constitute a language in a thorough and closed media. A language the designer excels in through a long and systematic training. By using only this language, actants who lack this training are given little or no opportunity to bring feedback into the design process.

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25 The usage of the word writing instead of drawing is intentionally done with the comparison of different semiotic systems in mind.
Squintological Sensations

I sat down with Bureaucracy one day and Bureaucracy said:
“The Pavilion sure is a beautiful object.”
I was pleased that Bureaucracy finally had come around and now saw things my way. But then Bureaucracy continued:
“But do we really have to let Some-one climb it, as Some-one is, in general, stupid, and they are going to fall off, and then Some-one is going to blame me and probably sue me, too. Does Some-one have to climb it? Can’t we forbid Someone to climb it? Can’t it just stand there and be beautiful? It sure is a beautiful object.
I told Bureaucracy that I had to be somewhere else and left.

I do not want to imply that drawings are not beautiful and useful architectural tools that can converse about enchanted worlds with great imagination. Drawings have and always have had capabilities to communicate wonderful three-dimensional experiences. The spatial powers of images by, for example, Piranesi or John Heiduk still arouse great curiosity and astonishment in me, but these images are worlds in themselves. Their three-dimensionality emerges directly in the readings, not through any abstract translations. They are not to be directly measured or built from. There is a huge difference between the making of these images and the statements of construction documents.

The argument being made is not, in essence, about drawings themselves. It is rather how we believe statement is transmitted, control is maintained, knowledge is gained, and quality is achieved throughout a project by drawings alone. I think we have to let go of the idea that all architectural objects should have a pre-existence in a drawn form, an ideal existence that is simply materialized, and that this materialization is simply a direct answer to the drawn object. In the work with the Broken Horizon, drawings and models were considered more as open guidelines. From the narrative, or plot, described in the first part of this text, the object materialized through a constant testing and rethinking. The wholeness of the design was thus guaranteed by the plot rather than the drawings. Drawings were always consulted by squinting; we were
aware that the map can never substitute the road it depicts. For me, there is kinship between this way of working and how Carlo Scarpa carefully examines his spaces. From details, to overall concept, to details again, the architecture follows itself, its concept, its site, slowly growing to maturity, adjusting to its environment, its habitat, adapting as well as creating its own stories and myths. This process promotes a method where we have to let go of some of the initial control—the control maintained by the foot-high-stack of construction documents was make-believe anyway—and trust the process to lead us to the final goal. In any ongoing design progress, it is important to maintain an openness in which knowledge can be both accumulated and fed back into the process. High quality is achieved only if a feedback system can be upheld throughout the whole making of the object. Otherwise we run the risk of investing a lot of energy defending premature and poorly studied solutions. The philosophy that the design process is a science of an ongoing squinted vision – a squintology – thus became a way for us to guarantee quality and maintain the joy of building among all the actors involved in the project.

Figure 26. Early conceptual renderings of the Broken Horizon.

Figure 27. All the cuts of the canopy saved in plywood.
Two Examples

This squintological method clearly manifests itself in two details of the Broken Horizon: the ball bearing joints and the surface of the canopy. The birth of both of these expresses a trust in the plot rather than in the drawings, a trust based on alliances with both old and new technology.

For a long time the Broken Horizon had no home. The necessary permits from Bureaucracy were tricky to obtain. Albeit homeless, the structure had invitations from a number of locations, from urban conditions on front yards to rural sites in the middle of the cornfield. Consequently, two complex geometries were to be respected – the somewhat known underside of the canopy and the completely unknown of the site. This called for a flexible design where the configuration of the columns could be altered. It called for a flexible joint between column and canopy. From quick sketches the wood prototype in the images was developed. In this first solution, wires were used to tighten the two sockets and the ball together. This ball bearing solution gave us full flexibility as well as connecting the design of the columns with the geometry of the canopy. A second prototype was produced in one-to-one scale and real materials. Findings from this exercise resulted in a reduction of the size of the detail to bring about the preferred elevated feeling. Later when the site was approved,
the column design did change. Consequently, the wires vanished, as they no longer served any purpose. The punched holes for the wiring in the device, however, remain as traces. The whole process was fluently aligned with both traditional tools, such as paper and pen and band saws, and the latest technologies, including computers, a CNC-milling machine, and Plasma cutting.²⁶

The making of the canopy surface incorporated a different approach. Here we were experimenting with an unbalanced structure. Initially the structural solution was based on a hybrid of balance and unbalance. Twenty-four individual swaying columns supported twenty-four separately moving canopy plates. All of these columns and plates were, in themselves, out of balance, but connected together with elastic joints, creating a balanced whole; this is similar to how an individual defender in football must rely on the whole group to maintain a stand. Although intriguing, this static elasticity was never executed, as the same concept could be achieved with both lesser effort and more impact. The static elasticity – balanced unbalance – was instead to be maintained not in the supporting structure, but in the surface itself. With the College of Architecture’s newly purchased CNC-milling machine we manufactured a stiff frame of plywood. The frame’s geometry was easily generated in the computer, and in alliance with the CNC machine, a full size part (9/100) of the canopy

²⁶ Rivers Metal did a tremendous job of supporting us, providing their CNC plasma cutter and sharing their know-how in stainless steel.
was fabricated. After the materialization of this canopy prototype, the questions became:

“Which materials can respond to both the elasticity and the abstract geometry we envision? Which material will act within the NURBS and spline geometry? Which material wants to be an elevated landscape?”

Brick was, not surprisingly, very quiet. But the Web-of-Straps answered loud and clear: “I respond well to your mathematics! I can maintain the preferred elasticity! I am a spline, I love a NURBS surface!”
Limitations in the Unlimited

With the introduction of the computer into the process of morphogenesis and design, we face a whole new series of problems. With the computer and its applications we find extremely fast and accurate tools. We cannot forget, however, that computer systems in their entire splendor lack the clear inherent hierarchy of architectural narrative from the more traditional architectural tools. Operating within a traditional methodology, the designer can rely on his tools (layout and graphic design) to stage the process and perform as a checklist. A particular drawing represents particular aspects of the object. The object is tested according to a determined line of attack; different drawings of different scales are introduced at specific times during the project. The usage of traditional sets of drawings is therefore not only a means of controlling the construction, but provides a pre-plotted way into the process. In the virtual world of the computer, on the other hand, the inherent understanding of the architectural object is scale-less, done from an indefinite number of viewpoints and, importantly, without any references to the human body. If we want to fully exploit the power that the new media is giving us, we have to be sure we find ways to tame it. To ignore that the computer has an abstract openness is to surrender to the inner logic of this tool. We have, therefore, to find new ways to carefully plot the process. Since the way we narrate a project is no longer predetermined and guided by the media, we have an opportunity to develop a plot generated from the object of our interest.

Working with the elevated landscape of *the Broken Horizon* we discovered that our tools allowed us to swiftly generate a number of different geometries; all of them looked very exciting and quite beautiful. At the same time we found no way to distinguish design quality beyond “the look” – quite unsatisfactory for our intent. Without a full scale materialization, we lacked the necessary tools for making any design decisions, a kind of a design equivalent of Turing’s halting problem.\(^\text{27}\) We were able to generate numerous forms fast, but as these

were scale-less and abstract we did not have the means to multisensory test them in conditions where we could *walk, touch, view, balance on, lay in, smell, or taste them*. Economic and logistic concerns prevented us from building the entire object as a one-to-one scale model. A repetitious and symmetrical system where parts could have been tested and then copied would have been too easy as a solution. The solution was to use the *world as a map*. By morphing six pieces of our favorite lounge furniture into the surface we were guaranteed the *human scale*. The chairs and recliners are already, by definition, indexes of the human body. The computer and the webbing could then easily assist us in weaving these objects into the whole.
Lessons Learned

So it happened one morning, on my way to work, that I ran into Bureaucracy. He greeted me cheerfully: “I think I got it! You want people to climb the Pavilion, right?”
A little puzzled, had I not told him? I nodded at him and he continued: “But if Someone falls down they will blame me.” Pause. I nodded. “So I was thinking, what if we hide the entrance and we don’t tell Some-one about it, at least the Someones that live around here. (Some-ones out of town we can tell.) This means, if Some-one can’t see the entrance and we did not tell Some-one to enter, Some-one can’t blame me for falling off. What about that?

As Bureaucracy left, whistling happily, I stood a long time and looked after him, thinking: “What an odd ally Bureaucracy is. You thought you knew him and then suddenly he helps you. A hidden room in the above, what a nice idea.”

Finally, we have to ask, what can be transmitted from this process to larger and more substantial projects? The Broken Horizon represents, after all, a rather small and framed process. The program, the size, the involved parties, and the site are all made to fit the squintological process. Furthermore, it was done in the comforting arms of academia. I think the step to “reality,” however, is not that big. I have been fortunate to work within structures outside academia where this thinking has been applied to structures where clients and craftsmen have been daring enough to trust a squintological process. The Platå Bar and the headquarters of Eckerud Exhibits in Linköping, Sweden are examples where a lot of squinting was applied. Both were executed with an excellent quality of detail. This was done without breaking either the time schedule or the budget. This process, however, calls on a designer to possess a different knowledge than was typically required by the traditional process. If we can find ways around the traditional political, economic, and bureaucratic structures, I predict that more and more buildings can emerge out of squintological thinking.

Granberg, “The Didactic Theater, Platå Bar.”

28 Granberg, “The Didactic Theater, Platå Bar.”
I find the division between schools of architecture and schools of design is a highly artificial one. I have had the opportunity to be active in both environments, and I cannot see the reasons for the division anymore. The experiments of institutions such as Bauhaus, where design and art was envisioned as one discipline, was maybe a little premature in their execution, but I think now the time is right to really harvest from a broader thinking. The shift brings a paradoxical opportunity for universities. Academia is respected as a location for thinking, not so much for doing. The accessibility of the new manufacturing technology, however, can alter this. The intellectual process in design schools can now feed directly into fabrication, utilizing academia, at its best, as an extremely perceptive environment open to new ways of thinking.

The architecture school in Nebraska with its newly purchased CNC-milling machine and the discourses with the local metal shop, Rivers Metal, were active, powerful, loyal, and joyful allies in our struggles. They gave us back the control we had lost. I started to mention the entities involved in the communication as actors. In fact the objects such as the CNC mill and the plasma cutter were so active in the cultural act that they started to operate almost at the same levels as the involved humans. I therefore find the term *actants*,\(^{29}\) coined in Actor Network Theory\(^{30}\) as referring to all active cultural entities, more fruitful when understanding any cultural system. Such an expanded view of involved parties in projects helps the designer to *write* in an adequate language and media at any given time of a project.

Paradoxically, the new technology’s seeming lack of sensuality, gives us a closer and more sensual relationship to the object; no longer limiting us to the visual world; design becomes tactile. One can touch it, smell it, and taste it. The whole construction team, comprised of architectural students and strengthened by a spectrum of different craftsmen, was always involved in solving design issues. In this collaboration, the structure of *the Broken Horizon*

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\(^{30}\) Latour, “Technology Is Society Made Durable.”
became like the work in an old atelier. It was truly a design laboratory run by a Didactic Design Team. I see this as the future for education, offices, and manufacturing. I want to walk into environments where highly intellectual thinking meets production, where designers get dirty, where welding and complex computer programming are linked. These environments will have accepted that the toolbox of design has changed, and, therefore, the profession has changed. I want to see more design built where design is done by building – where research is made by making.

*We never gave Bureaucracy any drawings:*
*We now use the Pavilion itself, as its own drawing, and I assure you it does just as well.*
Observation and Continuations

The Broken Horizon was completed in summer 2006. I and the group of students did stay on campus for about four weeks extra, with no extra credits offered. As an educational tool the design laboratory of the Broken Horizon proved to be powerful. In the experimental environment of the Broken Horizon, students strived and developed skills methods and understanding of makings. I believe that the hybrid between traditional design praxis and academia within which the Broken Horizon operates is an attractive way to develop a design praxis. I have later tested this hybrid in a larger scale at the University of Technology in Papua New Guinea, in the Conference/Workshop On-Bamboo\(^{31}\) presented as a design laboratory in this catalogue. The findings in the Broken Horizon and On-Bamboo had been the philosophical underlay in the creation of the international design conference Tasmeem – Hybrid Making to be held in Doha, Qatar from 10-18 April 2013.

\(^{31}\) Granberg, “The Didactic Theater, On Bamboo.”
Bibliography

———. “The Didactic Theater, Platå Bar”, n.d.
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