Prolegomenon to an Investigation of Inhibition in Design

by

Michael Lark

B.A. Anthropology
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B.Arch
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Signature of author:

Certified by:

William L. Porter
Professor of Architecture and Planning

Certified by:

Turid Horgen
Research Associate in Urban Studies and Planning

Accepted by:

Roy Strickland
Chairman, Departmental Committee on Graduate Students
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Abstract

This thesis is a preliminary investigation of the phenomenon of inhibition in the design process. My interest stems from observations of the vagaries of my own success as a designer. Sometimes things have gone well, or flowed and other times not. This is a phenomenon, which I consider as distinct from questions of talent. On the surface it appears to be the designer’s counterpart to that ailment known as writer’s block. Just what it is that prevents one from utilizing the full potential of his talents in solving an architectural design problem? As the term writer’s block implies, it seems very much of a question of constraint, of something restricting what is ordinarily an unforced, naturally occurring activity.

When I began my inquiry into a deeper understanding of the design process, my interest had been in the role of play in architecture. It appeared to me that the fountainhead of creative activity or innovation essential to design, lie in the innocuous activity of play. If play and playfulness are fundamental to creativity and innovation, I reason that, it makes sense to identify those conditions, which preclude something otherwise endemic to design. Is there a limit to that? While ensuring playfulness in the design might do much in the way of eliminating dry spells at the drawing board, I propose that inhibition is not always a negative quantity.

My approach to this inquiry has been to identify common ground among play, design, and inhibition at the theoretical level and then to attempt to apply those ideas in understanding field data that I have gathered. I have evaluated the proceedings from design workshops attended and recorded in the form of notes and videotape. Concretely, I have identified where instances of inhibition seem to be present, for what reason, and how they might eventually be lessened to the extent that, that appears desirable.

Co-thesis supervisor: William L. Porter
Title: Professor of Architecture and Planning
Co-thesis supervisor: Turid Horgen
Title: Research Associate in Urban Studies and Planning
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Preface

Play as it relates to architecture is a fascinating object of study in that it lies at the nexus of the creative process. It is a means for discerning problems, as much as it is one for exploring them and for producing the raw material out of which viable solutions are ultimately made. The intersection between the unthought, unrationalized, unpurposeful, and the useful, the developed, and the intentional I find provocative in considering the built environment and all the man-made artifacts in it. It is all the more intriguing when thinking about our largely unconscious interaction with them. Most central to my theme is the relationship between play with all of its perceived benefits to innovation, and inhibition. How does the latter hinder the former? How might the former alleviate the latter?

Everybody does it

When I first began to consider play seriously, it seemed to fit naturally together with architecture, art, and design for several reasons. There are many affinities beyond the connection of freedom and open-endedness designers most commonly see. Considering that, yet reflecting on human activity in a broader sense, it seemed that play belonged to neither the technical nor the ethical realm. Intuitively and perhaps even by default, it seemed it must belong to aesthetics.

As Johann Huizinga describes in Homo Ludens, play is a pervasive phenomenon in life. Despite the contentions of Carlisle-Duncan\(^1\), Huizinga convincingly suggests that play is central to almost all aspects of culture, all over the world since the beginning of humankind. One of my most fundamental premises has become that all people are by nature playful. It is self evident that children everywhere play. Given the chance, adults do too. The opportunity, or desire to play is wholly within everyone. Under which circumstances he chooses to express it is central to this investigation. As such, it strikes me as a topic particularly valuable for consideration in the field of architecture.

\(^1\) 1988
Inhibition: Not not-play

For the innumerable instances where adults\(^2\) show their inhibition to play, two commonplace occurrences may serve to illustrate my concern in the context of design. The first example one finds in any given school of architecture. In my own architectural curriculum, I remember well my own recalcitrance about momentarily suspending disbelief in the playful spirit which was really necessary to make progress on any given project. I am quite certain that this was not epiphenomenal. Many of my fellow students would protest a critic's suggestions, citing them as impractical or making some other such excuse. In pedestrian terms, one might say that they were unable to relax, and enjoy with what they were doing. This sort of stumbling block has something to do with expectations.

The second instance where inhibition is often found is in the initial contact designers have with clients. Any practicing architect with a modicum of experience has probably crossed the outer limits of a client's imagination with alarming rapidity from time to time. Whereas a banana can vividly represent a submarine or a telephone handset to a child, perhaps even simultaneously, adults sometimes balk at the assertion that blocks can adequately portray buildings. It becomes a question of perception.

Although 'play' here suggests a free spirited manipulation of the design problem, I acknowledge that it could in a broader sense also encompass avoidance. It seems paradoxical that, play may signal a kind of inhibition itself and more so perhaps in that, the way to address this is through rules.

The reciprocal contention is that play can liberate from inhibition, i.e. as an icebreaker. To get people to play though, they must first feel at ease to do so and then not merely to be playful at all, but with regard to certain enterprises, namely that of design. In any event, the very nature of play makes it difficult to say what counts and what does not. One to one correspondences appear antithetical to its spirit, if not its very definition.

It is possible to imagine many reasons for the kind of resistance I have adumbrated: social, psychological, and of particular interest to architects, environmental factors. I do not however want to let the insinuation creep in that I am claiming inhibition is the antithesis of play or playfulness. Inhibition belongs to a larger category of factors, which bound play, that I will simply call constraints. In that, constraints on playful activity: rules, conventions and physical boundaries for example, can in fact be a boon to play, a more fine-grained description is necessary.

In any event, the framework for discussing creativity developed by Howard Gardner, Mihaly Csikszentmihalyi, and David Feldman is

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\(^2\) Children, it seems, pass between these two states much more readily.
worth mentioning here. In the space defined by the *individual*, the *domain* and the *field*, the influence of the above-mentioned factors are most likely linked to one another and play themselves out. As it is as unlikely that a given source of inhibition is attributable solely to any particular element in the framework as it would be difficult to isolate it, I have chosen to study the workings of inhibition in an anthropological fashion. Architectural design is, in any event, one of the most social of the arts and analogous to the painters and sculptors studied by Csikszentmihalyi, particularly amenable to study by virtue of its medium.

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3 *Individual* refers to a person working in a *domain*, e.g. painting, physics, or philosophy amid the contemporaries and critics, which constitute his *field*. Gardner 1993, pp.34-36
1 A Few Words on Play

Play and aesthetics

Aesthetics strikes me as an apposite jumping-off place for discussing play and architecture for several reasons. As I have already mentioned, play for me does not intuitively belong to the technical or ethical realm. Similarly architecture, while not having inconsiderable technical demands or ethical issues is as distinct from engineering as a discipline in its methods and its madness as it is from the practice of law or religion. Second, there is a long historical tradition of examining both the dyads of architecture and aesthetics, and of play and aesthetics. Last, aesthetics, precisely through its ambiguity will open the discussion to reveal a number of interesting parallels between play and architecture, which I believe, will be useful in examining inhibition.

Before entertaining any discussion of aesthetics, it is probably wise to seek a disinterested definition for the term. Even in doing so, I find that there is tension evident between the entries found under Webster's definition of the same sort which abounds both in architecture and in play:

aesthetic, adj. 1. pertaining to or having a sense of the beautiful or to the science of aesthetics. 2. having a sense of the beautiful; characterized by a love of beauty. 3. pertaining to, involving or concerned with pure emotion and sensation as opposed to pure intellectuality. -n. 4. aesthetics. 5. a philosophical theory or idea of what is aesthetically valid at a given time and place. 6. Archaic. the study of the nature of sensation.

Thinking and feeling

On one level it seems that definitions one, two, and five for aesthetics are at odds with entries three and six. Perhaps the former are justifications or intellectualizations of the latter. Turning to another source shows that, Johann Huizinga's first take on play and aesthetics has very much the character of the third entry cited above:

If, therefore, play cannot be directly referred to the categories of truth and goodness, can it be included

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4 Merriam-Webster

5 Intellectualization here ultimately has several connotations for me. It can mean a post hoc rationalization of play, a condition not unknown in architectural design, or the appropriation and embellishment of play to specific, rationally motivated and ostensibly functional ends. In any case the similarity of play to design as an endeavor of order-making is worth noting.
perhaps in the realm of the aesthetic? Here our judgment wavers. For although the attribute of beauty does not attach to play as such, play nevertheless tends to assume marked elements of beauty. Mirth and grace adhere at the outset to more primitive forms of play. ...Many and close are the links that connect play with beauty. All the same we cannot say that beauty is inherent in play as such; so we must leave it at that: play is a function of the living, but is not susceptible of exact definition either logically, biologically, or aesthetically....Hence, we have to confine ourselves to describing the main characteristics of play.\(^6\)

His remarks, “mirth and grace appear at the outset,” and “play is a function of the living”, are statements about sensuality, about physical vs. mental experiences, which are commonplace and underscore how pervasive and innate play is. In short, he tends toward the phenomenological. Later, (but not much) Huizinga is less equivocal about the relationship between play and aesthetics, he observes that:

The profound affinity between play and order is perhaps the reason why play, as we noted in passing, seems to lie to such an extent in the field of aesthetics. Play has a tendency to be beautiful. It may be that this aesthetic factor is identical with the impulse to create orderly form, which animates play in all its aspects.\(^7\)

In the space of two pages, Huizinga moves from talking about play as primitive, albeit beautiful behavior, to an event of order making. This turn of events in Huizinga’s writing is in itself suggestive of the tension Friederich von Schiller, well-known commentator on the value of art in education, had as the central dichotomy in his influential book, *On the Aesthetic Education of Man*. He spoke of the competing impulses of the *sensuous* and the *formal*.\(^8\) The desire in the individual to resolve these two opposing forces results in what he termed the *play impulse*.

Shifting the focus to architecture, it appears no less suitable for consideration as the object of cold hard reason than it is valid alone in terms of its experiential component. Again, it could be said that the former serves as a justification for the latter. Taken in the extreme, architecture, like pure play, is perhaps done for its own sake. For Gottfried Semper the role of play was in fact fundamental to an understanding of the very impulse to build. He states in the Preface to *Der Stil in den technischen und tektonischen Künsten oder praktischen Ästhetik*:

\(^6\) Huizinga, p. 7, 1938  
\(^7\) ibid., p. 10  
\(^8\) Schiller, p.64ff
Surrounded by a world full of wonder and forces, whose law man may define, may want to understand but never decipher, which reaches him in only a few fragmentary harmonies and which suspends his soul in a continuous state of unresolved tension, he himself conjures up the missing perfection in play. He makes himself a tiny little world in which the cosmic law is evident within strict limits, yet complete in itself and perfect in this respect: in such play man satisfies his cosmogonic instinct.  

Semper is describing the act of building as an aesthetic pleasure undertaken to satisfy the soul, its usefulness is seen, in practical/economic terms, as incidental. Furthermore, it is about the enjoyment of the sensual and the emotive as much as it is the philosophical or spiritual, a trait abundantly evident in any notion of play.

Pervasive yet special

Despite the protests of one of his very few critics, Huizinga’s real contribution to the study of play was his recognition of how intensively and extensively it figures not only in the development of human cultures, but in our everyday lives. He goes into detail in discussing the presence of play in warfare, law, religion and art. Despite this, play has a special character, a lightness of being, a capacity for being not serious if even in a serious way. Children in their very existence offer not only the best example of this, but also the best rebuttal to Carlisle-Duncan’s criticism. They spend a great deal of their time engrossed in play whether with dolls in a Victorian manor or scrambling through the backlots of an urban landscape. The examples are all around us.

Even when play is so commonplace, its essence connotes something special. It is a different state of being. Huizinga describes it as being removed from normal dictates, although not entirely, from ordinary waking consciousness. He observed that, our awareness of the banalities around us never disappears entirely, even when we are active on another level having its own distinct structure.

This realization of the pan-human nature of play that Huizinga describes has come to take on special meaning for me. If playfulness is as prevalent as he suggests, and I am inclined to

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9 Cf. Frampton, 1995
10 Carlisle-Duncan, 1988 asserts that Huizinga’s discourse on play is bourgeois and that its ideological overtones have gone unnoticed. She says that his arguments presuppose a leisure class in society, which has time to devote to play.
11 Huizinga’s use of the word serious must be differentiated. It means in the case of the former earnest, consequential, absent of fun. The latter means something more along the lines of intensive or absorbed.
believe it to be, I strongly suspect that it can be an enormous ally in dealing with inhibition. As in good design, the best, or certainly most efficient solution seizes on and makes use of what is most readily available in a special way.

To complete the triangulation, I observe that the condition of architecture under this rubric again shares similarities with play. Although some might contest it in the face of Information Technology's burgeoning influence on life, the built environment, I maintain, remains the most pervasive thing we have in our lives. From the denizen of the most rural county to the most jaded Manhattanite, all of us abide in a man-made landscape to a greater or lesser extent.

Even the most abysmal specimen of building is special in that, out there, in the midst of everywhere, it is indeed somewhere. While it is much bemoaned, and rightfully so in my opinion, that all cities are beginning to look alike, they are not in fact the same. Even if the Big Mac in Biloxi tastes identical to the one in Baltimore, the experience of being in each of those places is, if only subtly, distinct.

This contention grows stronger when looking at the other end of the spectrum. Architectural experiences can be not only truly unique, but move one into a another dimension similar to the way in which play transforms. There is no end to the examples I could offer to support this point. Be it a Gothic cathedral or a Navajo cliff dwelling, architecture provides us with moments which are in some way out of our own worlds.

Framed yet amorphous

Part of what makes play special is its capacity to alter the meaning of the conventional, be that a physical construct, the actions of an individual or group or any other type of communication. Both Gregory Bateson and Clifford Geertz offer some of the most vivid examples in support of this contention.

Bateson makes his point with anecdotes from ethology in describing play as a meta-language.\textsuperscript{12} Play allows young animals to engage with each other in a way, which says, "although this looks like fighting and sounds like fighting, it is not fighting; it is just play; don't hurt me." The ordinary semantic of fighting signals is superseded by a message, which mediates it in some way. In the very act of playing, one communicates a wish to be exempt from the normal rules of behavior and their consequences. A different set of rules applies. In other words, it provides a framework for exploration even while the nature or exact constitution of that framework is itself not entirely certain. It is illusory, but therefore no less useful. The rules of play are always in flux, and its objective as well.

\textsuperscript{12} 1988
To me one of the most interesting mediations to consider is that taking place between perception and expectation. In a play setting, the former threatens to destabilize the latter. The example just cited is illustrative in that both Bateson and Huizinga take pains to emphasize the fragility or at least ephemeral nature of play.

Expectations provide a sort of orthodoxy, be they shared by the group or held by an individual. They are something known and against which new experience is weighed. Perceptions, on the other hand, are very much influenced by expectations but not congruent with them.

Rules and freedom

Closely akin to framing are two concepts or necessary conditions which most would readily associate with play. Freedom: being unencumbered to do as one will, requires little explanation. The colloquial semantic of play is shot through with this idea. In play and by extension creative activity, one sees again and again that the players are free to rewrite the rules, an immense distinction from being free from rules.

As Elster\(^{13}\) notes in discussing conventions and creativity, there are generally two kinds of constraints: external and self-imposed. Regardless of their origin, they are beneficial in that they narrow the field of variables to a scope, which would otherwise be unmanageable. We know this from play as well. Play, where ‘anything goes’ is the order of the day, quickly descends into something scatological in the best case and deadly in the worst.

Play means that one is free from rigid conventions, just as a part in an apparatus in free to move, and yet undeniably that range of movement is not without limits. Like a machine built to incredibly fine tolerances vs. one with a reasonable amount of play, the former works well until it encounters the grit, grime and mishandling of the real world. The latter example is more rugged because in its play, it can accommodate these anomalies or irritations in stride. To complete the analogy one must consider that, if the apparatus is excessively loose, the machine can destroy itself or simply fall apart.

The axes

Each of the preceding descriptions of play and architecture represents a kind of axis. I do not however claim that this list is complete or exclusive. Furthermore, while the qualities, which define them, are not polar opposites per se, I feel they well represent the trade-offs one finds in any given instance of play. Similar to our sense of taste, instances of play may be considered as particular

\(^{13}\) 1992
combinations of a few simple elements. These different admixtures naturally have different characters. Correspondingly, when these components are dramatically out of balance, the result will unlikely appeal to any palate.

To consider an example, one might imagine a kind of play with an overabundance of rules or specifications. On the axis of the sensual-intellectual, it may tend towards either chess or playing in the mud. In terms of frequency and singularity, it could be played every day at recess, or run once a year in Pamplona. Its space could be as clearly delimited as a tennis court or be as free-form and intermittent as a running gag. In any case, when freedom for individual interpretation or reinterpretation of the rules is absent, the play spirit vanishes and the act becomes one of drudgery.

Where the absolute limits lie, probably varies from one individual to another. Some people would consider chess more like work than play. For others the hit-and-run of practical joking may be more annoying than amusing. It is above all else, a matter of balance.

**Liminal space**

Heidemann observes, that in all philosophical analyses of play, notably those of Kant and Schiller, the special character of “being between” is most important and in his opinion, that it forms the connection to aesthetics. This is the liminal condition, the state of ‘being between the doorposts’. In the axes just explored, I think this idea is also apparent. To extend the metaphor, these might also prove valuable as genuine portals to play.

My own inkling of the significance of play’s connection to architecture came some time ago. As an undergraduate I attended a lecture by the renowned ethologist Jane Goodall entitled “Do chimpanzees have culture?” There she showed numerous examples of chimpanzee behavior once thought to be indices of human behavior, the most highly touted of which was tool-making. To illustrate this, she related the instance of seeing a baby chimpanzee playing near an ant hill.

As a human child would do, he picked a blade of grass and began probing the earth with it. To his surprise and disgust he found the blade of grass swarming with ants upon pulling it out of the ant hole, causing him to drop it and seek the comfort of his mother. She however found his discovery an appetizing one, picking up the sprout, and greedily licking the ants from it. She proceeded to probe the ant hill herself, intent on exploiting this innovation to the fullest. It is not surprising that this practice was soon imitated by all other chimps in the group who had witnessed the efficacy of this technique for expanding their culinary horizons. The most exciting aspect of this vignette was not the fact the chimps had “invented” tools, which

14 Heidemann, p. 10
they soon further developed (they later found carefully prepared twigs to be more effective and durable). It was rather the relationship between play and work, and by extension the role of the aesthetic relative to the technical. It appeared that, contrary to folk wisdom, necessity is not the mother of invention after all, but rather its midwife.

In considering the liminal space, the exciting thing about the anecdote cited above is how it diagrams in the simplest way that quality of play. To be at play means to be in another world, without ever entirely losing consciousness of the 'real' one in which we live. Huizinga himself gives an excellent example of this:

He found his four-year-old son sitting at the front of a row of chairs, playing 'trains'. As he hugged him the boy said: 'Don't kiss the engine, Daddy, the carriages won't think it's real.'

The critical difference between these examples is the self-consciousness of the boy in his situation. He knows that he is just playing, whereas mother and baby in the previous example individually represent those two states. Play, I will venture, may be central to consciousness itself. Being 'outside one's self' is essential to establishing a critical perspective on one's own actions and their significance in the world. Speaking as an architect: it is understood that this is critical to the design process as well. From the vantage of a play state, we see ourselves in the system and the things we make as external to ourselves. It is a state into which we voluntarily put ourselves, not by changing our raw sense data, but our interpretations of them. We change the rules for evaluating the stimulation that we receive from the environment and so change our perceptions.

Flow and absorption

The 'altered consciousness' of a play state liberates energies and perspectives that the mundane world fails to call forth. Many have described this enchantment, but perhaps none better than Csikszentmihalyi in his prolific writing on creativity and the experience of flow. He too contrasts creativity with "everyday experience."

While Csikszentmihalyi speaks of enjoyment as the concept around which creativity is oriented, the connection to play is obvious. As with Huizinga's warriors or rugby players, his rock climbers and young artists are willing to endure both psychic and physical pain for the pleasure of their pursuits.

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15 Huizinga, 1938 p. 8
The connection is visible between Csikszentmihalyi’s requisites for enjoyment and the axes of play described above. More specifically, I would posit that a degree of equilibrium in the axes is necessary for the conditions Csikszentmihalyi states are required, to exist.

Playground

‘Playground’ connotes space in two ways. First it is charmed in a special way, transcendent of its physical qualities. When bunkbeds become pirate ships, it is not because they have suddenly sprouted masts and afterdecks. Any place can become a playground and in fact I suspect that back alleys and barnyards have more allure than a typical playground designed as such.

On the other hand, it is undeniable that the physical qualities of a space make it more or less interesting for play. Returning once more to the idea of the axes, it is easy to see a correlation between the concept of playground and the idea of play being framed and amorphous or in thinking about rules and freedom. I do not think this is any less true for the sensual-intellectual aspect. A library is more cerebral and less sensual than a pool hall, although one can imagine playing in both places.

Purposefulness

First, it is clear that while play and aesthetics are linked, through the creative act and through the enjoyment of art as an observer, the relationship is a complex one. Although Huizinga stridently denies that play can be in any way purposeful, there are ample contradictions to this in his own writing.

First, he states that play predates culture and that animal play contains all the elements of human play. As in my own observation, play is even interwoven with the creation of useful physical objects by animals, making it difficult to contend that this is not true for humans as well. Furthermore, Huizinga asserts that a special function of play lies in creating order. It makes possible a “temporary limited perfection” and therein lies its link to aesthetics. There is no reason that the creation of order be dismissed when it incidentally has a functional value as well.

16 1. There are clear goals every step of the way. 2. There is immediate feedback to one’s actions. 3. There is a balance between challenges and skills. 4. Action and awareness are merged. 5. Distractions are excluded from consciousness. 6. There is no worry of failure. 7. Self-consciousness disappears. 8. The sense of time becomes distorted. 9. The activity becomes autotelic. (justification for its own existence)

17 This strongly resembles Semper’s sentiments cited above.
As exemplified by the anecdote of the chimpanzees at Gombe, there is reason to believe that play is instrumental to the development of creation at the most fundamental level. On a more abstract plane, evolution is a very playful process. It is not teleological and yet it has proven itself incredibly efficient at producing the most phenomenal solutions to mundane, real world problems.

The recognition of the value of the non-scientific method in the scientific community is evidenced by work in artificial intelligence. Software is allowed to take on a life of its own, spawning code which is capable of things no programmer could achieve and furthermore astoundingly resistant to rational analysis by the people who set the project in motion. Innovation moves forward because processes are set in motion, not because the true nature of the finished product is understood.

**Conclusion**

If nothing else, I hope in the preceding discussion to have established definitive links between play and architecture, in terms of both experiential qualities, and productive modes that will prove useful. To indulge in yet one more trope for play, I am tempted to compare it to the weather. Firstly, it is much more phenomenon than substance. It is ubiquitous, powerful, unstable, and can be creative or destructive in its effects. Its internal dynamics resist perfect algorithmic description. In the best case, we can enjoy and profit from its presence in our lives. What other choice is there?
2 In Play’s Way

Must we?

There are many ways to define, and so begin to use the term inhibition. In the broadest sense, it is a species of the genus ‘constraints’. All constraints limit some thing in some way in their physical or virtual existence. They can be inclusive or exclusionary in their effect, active or passive in their deployment, and they can be used to positive or negative effect.

For the purposes of my discussion, I have constrained all permutations of the word ‘inhibit’ to suggest something that does its work at a psychological level. In any instance however, to inhibit is to act and although it is conservative. As such the implication is defensive, which of course begs the question: “Against what is to be defended?” Since I have endeavored to connect play to aesthetics and design, it is interesting to consider the proposition against statements, which say that there is no art without aggression or destruction.\(^{18}\) Does this suggest inhibition is an unavoidable part of the dialectic, which makes design possible? To begin to address this question I consider three perspectives on inhibition, beginning with a technical and then moving toward a more situated understanding.

Scientists say

Any mention of inhibition connected to the arts or creativity brings quickly to mind Freud and psychoanalytic theory. Although his ideas fell out of favor for a while, they are being reconsidered in contemporary research. Very much apart from the generally negative or debilitating function that is associated with inhibition, it is quite essential to “higher cognitive processes” despite itself being a primitive function.\(^{19}\) The take with which I begin discussing inhibition is based in cognitive science. Although it may seem far removed from the discussion at hand, there are some fundamental insights it offers, which are germane.

Although inhibitory functions are present in the simplest living organisms, they begin to take on new roles in primates as a result of developing social structures. More specifically pressures of cooperation and competition selected individuals with higher connectivity between the growing neocortex (the ‘rational’ part of the brain) and the limbic system (the emotional part) in higher primates. This has facilitated voluntary control over sexual and aggressive behavior, a boon to social harmony. In other words, inhibition makes

\(^{18}\) Kolodny, 2000

\(^{19}\) Bjorklund and Harnishfeger, 1995
coordination possible. The restraint on powerful emotions allows an individual time to consider the implications of his actions. This delay in gratification makes it possible to plot strategy, influence others and even deceive them. Power is derived from the ability to not respond.

In concert with the active formulation and reminiscent of Freud, it is held today that inhibition is not merely an obstacle, like some inert lump of material, but rather an active "suppression of previously activated cognitive contents or processes." It functions as warden over the contents of consciousness and monitors the processing of that material.

Inhibitory processes work both outward and inward, screening from external distractions as well as those in one's own mind. An example of the former would be in the case of daydreaming, where high level inhibition is necessary: a deliberate act of concentration. Low level inhibition is of the sort that, for example, filters out the unintended meanings of a polysemous word in a given context. The example Bjorklund and Harnishfeger use is that of a child who thinks of a cylindrical piece of wood and not a nocturnal flying mammal when he experiences the word "bat" in the context of a discussion on baseball. The efficiency of this kind of inhibition has been shown to grow from childhood and then diminish late in adulthood.

Inhibition's contribution to self-regulation and thereby the self-concept is one that develops over time and, as has been stated, is of considerable importance to socialization. Research has shown that, social intelligence is in fact that to which the majority of our cognition is devoted. According to Bjorklund and Harnishfeger this is the field of endeavor upon which we accomplish our most impressive intellectual problem solving. They equate social intelligence with political intelligence and thereby the complex societies, which made technological advance both necessary and possible.

Stenhouse helps explain the connection by suggesting that it is inhibition to the more primitive drives which allows attention to be directed to exploratory behavior. Through this activity, information is gathered for storage and abstraction. An inhibition to crawl or climb trees is essential to the development of sensori-motor abilities like bipedalism. All these factors together combine to increase human intelligence.

One of America's most influential philosophers, John Dewey, saw inhibition's value in the development of reflective thought. While Bjorklund and Harnishfeger point out that inhibition is not sufficient, nor likely to have evolved for that purpose, it is a necessary condition.

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20 ibid.
21 ibid.
From the couch

The work of Susan Kolodny comes very close to addressing the problem I am investigating. She has examined the inhibition of creativity in writers and poets using both clinical information and a sort of field study. Working along classic Freudian lines, she identifies several different ways in which writers are blocked.

The first type involves a conflict with the content of the work. In essence, the writer finds herself avoiding material or dealing with it unsatisfactorily because the subject matter strikes a nerve. This could take the form of a particular place, thing, relationship or person.

More severe than this are the occasions when writers or painters are in conflict with the creative process itself. A common example is the guilt or fear associated with the social withdrawal, at whatever scale, required to do creative work. The artist might fear abandonment or some other sort of retribution for having distanced himself from loved ones or peers.

Closely related to structural difficulties are cases where the author’s personal limitations are reflected in the work. In Kolodny’s experience for example, a personality tending towards the obsessive is inclined to produce dry, colorless, overly detailed writing. An improvement in the work is predicated, so to speak, upon a corresponding change in the artist's life. A clarity of purpose in life overall might be a prerequisite for articulate writing.

As creative work is filled with multiple meanings, for both author and patron, it is by nature ambiguous. It seems to require, as Kolodny writes, “a return to previous mental states,” or simply put, regression. She calls it an entry “into altered states... where the rules of time and logic don’t apply.” She likens creative work to being a Greek prophet, a conduit through which powerful forces flow. The feelings associated with that can be of blissful infant omnipotence or of being utterly out of control. As a consequence, she reports that some of her subjects avoid creative work, despite otherwise being enthralled with it.

"Dilbert", 1992

22 2000, my emphasis
The descent into a regressive state does not frighten everyone though. Kolodny tells of taking part in a “low intensity residency” with a group of successful writers for whom this came to be an essential aspect of the ten-day event. Despite symptoms of insomnia, sudden fits of laughing or crying, insecurity, disorientation, confusion and self-doubt, the participants felt weary but not threatened. This, says Kolodny,

...exemplifies the fact that flexibility towards regression... is a prerequisite for creativity. Conversely, an inability to tolerate the regression that is part of creative work, would constitute an important source of resistance or block.23

If self-control came to an author with difficulty, the prospect of shedding it can induce anxiety and evoke defensive tactics. Rhythm, Kolodny suggests, while helping give pleasure in writing (and undoubtedly in other art forms too), by being bound up in early mother-child interaction, can conjure parental presence and thereby a latent fear of regression. An advancement of this idea by Hass suggests that rhythm in art can threaten via dedifferentiation- a loss of self that incites group action.

According to Ogden (1989), there is a psychic state even more primal than that of dedifferentiation. He writes:

contiguity of surfaces (e.g. 'molded' skin surfaces, harmonic sounds, rhythmic rocking or sucking, symmetrical shapes) generate the experience of a sensory surface rather than the feeling of two surfaces coming together either in mutually differentiating opposition or in merger. There is practically no sense of inside and outside or self and other; rather what is important is the pattern, boundedness, shape, rhythm, texture, ...

If nothing else, the condition Ogden describes is suggestive of the built environment and our unconscious interaction with it, practically from conception.

My interest in play, and by extension, inhibition has much to do with children. Ogden’s theory notwithstanding, they lack experience, comparatively speaking, and are not yet as bound as we are by our discriminations about the world. Given a reasonably stable upbringning, it has been my observation that they show no fear of rebuke for ‘stupid’ questions, because they have fewer expectations of how things ‘must be’, ‘should be’ or ‘simply are’. It could have only been a child or a genius who suggested that the earth and a good many other things, revolve around the sun, and not the converse.

23 p. 43
According to Kolodny, the unconscious expectations artists develop, do however have roots in childhood. Their need for approval or fear of censure is transferred to the anticipated *readers* of their work. In addition to resistance to creative work, these largely unconscious expectations are manifest in the particulars of the work itself, its tone, slant, or content.

Creative work requires a frame similar to psychoanalysis where regression is not only tolerated, but encouraged. In this frame, anxiety over possible conflict is mitigated by gradual emergence of themes, structure, and form. Abrupt differences/changes in work bear investigation, i.e. their level of detail, style, etc. without apparent artistic purpose. They are telltale signs of difficulties with regression.

Regression, in that it takes one to a previous and ordinarily private state in his development, makes one vulnerable. There is then a fear associated with risk of exposure in becoming more childlike. One might stumble across something in the closet of which he is not particularly proud.

Almost all of the fears discussed thus far comprise the inertia, which make starting any creative endeavor difficult. A common response is the use of rituals by artists in order to begin work. The observation ties together once again the centrality of play in creativity. Huizinga makes its role, even in this instance, perfectly clear:

> Ritual is thus in the main a matter of shows, representations, dramatic performances imaginative *actualizations* of a vicarious nature.

An act of play, as it were, is needed to get the ball rolling.

Similarly, notes Kolodny, finishing is charged with emotional meaning. The fear of closure or finality, has an obvious connection to death, but also separation from familiar surroundings or the anxiety that something imperfect will be fixed for eternity.

**Living in the head**

In his book, *Serious Play*, Michael Schrage emphasizes the importance of modeling things in the most concrete way possible in order to do successful creative work. The first connection I made with this idea was a recollection of an encounter with a particularly good, but also demanding design professor.

As it happened, this professor assigned each individual in our studio the work of a noted twentieth century artist, that of a twentieth century architect, an obtuse program and an imaginary site. Having received Marcel Duchamp's Large Glass, Peter Eisenman's House X, the program of a world headquarters for UN philosophers and a

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24 my emphasis
25 1938, p.15
storefront window for a ‘site’, I was a bit intimidated. To turn things up a notch, our professor forbid any sort of intermediate drawings. Sketches were just tolerated, but mostly we were expected to spend the whole semester producing inked Mylar sheets.

After a desk crit early on in the semester with little to show, I was accused of “living in my head,” having been told that I was “full of good ideas” but that they were worthless unless clearly delineated. Only when my professor could attack my drawings and models would he be happy. There was no lack of consternation on my part: I was unsure of what I was doing, much less what it should look like.

Apart from the anxiety caused by the difficulty of the assignment, the working conditions, and thereby the inhibitory effect, the example underscores Schrage’s main point: meaningful discussion comes from interaction with a real object, not verbal representations of it. In doing so, the latitude for interpretation is reined in (an inhibitive act) but more importantly, it forces one to reveal his hand, to put his (house of) cards on the table. The difference, says one of my favorite aphorisms, is like ham and eggs. The chicken was involved, but the swine was committed.

The greatest value of the model, says Schrage, is not, contrary to popular belief, to clarify what the final product will be, but to make clear what the social relations between the members of the project team are. Schrage quotes Frederick LePlay who said:

The most important product of The Mines is The Miner.

This begins already with the recruitment of that team. It is not the right people who build the model, but the model or articulate prototype, which attracts the right people.

The model of course is not some absolute. Its value is dependent on many factors, but perhaps most significantly, which aspects of reality have been incorporated and which not. How abstract or realistic is the model? If it is too life-like, it becomes cumbersome, and if it is too abstract, important factors will escape consideration.

Inhibition enters the equation when taboos people have, prevent them from building accurate models. The unquestioned assumptions are the most dangerous ones. Schrage’s poignant example of this phenomenon comes from the military. The Navy, along with other branches of the service, has long used war games to develop strategy. In creating and playing out scenarios however, aircraft carriers were never allowed to be virtually sunk. This was true despite the fact that Navy experts on submarine warfare insisted that such a case were quite possible. Because the carrier operations comprise such a large part of the budget, are ‘the pride of the fleet’, and legitimate the power of high-level brass, they always got a free ‘pass’ in the exercises.
Conclusion

Looking over the various inputs considered on inhibition, it is fascinating to see the outline of the creative process reflected in the discussion. In simplest terms, creative activity is but a cycle of fanciful activity followed by critical thought, which evolves toward both a problem and its solution. In Kolodny’s studies for example, making ‘stuff to think about’ is predicated on regression to a state where the critical mind does not interrupt primary process thinking. Afterwards in reflective thought, that which is useful or perhaps will be farther down the road, is carefully set aside.

Paradoxically, a loss of inhibition can empower as readily as it makes vulnerable. A singer or an actress calls upon the depth of her own emotions to lend conviction to a song sung or a role played. In a manner of speaking, she exposes herself, and yet far from being chagrined or laughed off the stage, she can enrapture audiences. The way many comedians perform also fits this conceptual model.

The environment where such a performance takes place in the example just mentioned is noteworthy from a designer’s standpoint. The stage is very much an architectural element. Roughly speaking, it resembles a pulpit, ergo a position of power, but also an altar, a place of not only reverence, but also subjugation.

Negotiating inhibition, which we see to have advantages as well as disadvantages, is a matter of balance just as was with play. At some level it may be that play and inhibition overlap or at least that it is helpful to think about them in those terms.
3 What is special about designing?

Got angst?

Up to now, all this talk of inhibition and play has been rather abstract. My initial speculations or generalizations about inhibition were that it is about fear, risk, and uncertainty. While I will draw on the theories just presented, I will seek to narrow the focus. How does it appear in a real-world design situation? I posit that in the context of design, it is a fear of losing something.

Fear of losing face, losing money, or missing an opportunity to realize one's ambitions all hem people's actions. While these kinds of fears we know to be well-grounded, particularly in the design professions, I suspect that they are rooted in the more fundamental causes discussed above. In any event, they are usually considered inimical to creative solutions at some point.26

"We have nothing to fear but fear itself," said FDR. While this may hold remarkably true, it is not the way most people see things, particularly when it comes to design. One of Csikszentmihalyi's tenets of flow holds that a key to deriving enjoyment from what one is doing entails his having the feeling that he potentially has the ability to deal with the situation. The individual becomes one with the task. This certainly happens in design: becoming intensely engrossed in one's work counts among the most endearing pieces of architectural education lore.

Design, like just about every other activity however, takes place in a social context. In fact, the creativity upon which we place a premium is supposed to come forth in a highly collaborative environment. This, by definition, correlates to a source of distractions. In this regard at least architecture has much in common with other artistic disciplines, as for example film.

It is probably no coincidence that these inhibitions are greatest in architecture: the most conservative of the arts. Experimentation in painting and music is much more prized/tolerated by its patrons than in architecture. The reasons are as much financial, technical and practical, as they are social. Consider the following matrix of demands on the individual arts.

26 While I can report these concerns from personal experience, the AIA's firm survey, "On the Boards" June 2001 also reflects this. Similarly Csikszentmihalyi makes the following observation: "More serious health, family, or financial problems could occupy the mind of the person so insistently that he or she is no longer able to devote enough attention to work. Then a long period of drought may follow, a writer's block, a burnout which may even end a creative career." 1996 p.138
One might say that there is much more at stake. Constraints in the form of those just mentioned beget other constraints and ultimately that subset which is the focus of the discussion: inhibition. If nothing else, this means that while an architect may fall from grace as quickly as an artist in any other domain may, the rise to overwhelming approval is seldom as rapid.

Considering the unique combination of financial, technical, and practical concerns design professionals face while leaving aside the concomitant issue of aesthetics for a moment, their work looks very similar to other project-oriented professions. Architecture would be practically synonymous with the building industry. As pessimistic as one might be about the state of architecture today though, the combination of all these factors make design and the architectural profession something else indeed.

"Dilbert", 1992

Into the bush

Before I delve into the workshops, I consider a case perhaps more general in correspondence to work but very specific to workplace. The event in question was post-occupancy study done at Arthur Andersen. It was valuable to me for several reasons, but firstly because of its clear orientation to the design of the physical environment. All discussants began their commentaries by addressing concrete aspects of the building and then proceeding to describe the impact they thought it had had on their own work(lives) and those of their coworkers.
The second aspect of the study, which I found beneficial, was its contrast to my own personal involvement with the workshops in Sønderborg, Denmark. The narrower bandwidth of information and the distance from the first-hand experience helped me focus on the patterns, which emerged in the monologues of the staff, who participated in making the videos. This critical distance to the documentation was also sobering. As Schrage quips on the use of spreadsheets by select individuals’ after they became commonplace:

Figures don’t lie, but liars do figure.

Even in a culture where the Joint Chiefs of Staff have been known to rely on television to confirm their own intelligence reports, it would be naïve to assume, that because something is on television it must be true. Despite their best intentions, to assume that those with access to video cameras are any different than the spreadsheet manipulators would be mistaken.

New Digs

The following observations are in response to on a film done in cooperation with a broad range of employees from Arthur Andersen’s new site in Baltimore. They focus on the impact made by the design of the new office on the staff’s work habits and overall satisfaction with their new ‘home’. While clearly the operation of a ‘Big Eight’ accounting and consulting firm varies considerably from a design office, I thought it might be helpful in discussing inhibition in a professional environment generally. Further it might also offer an interesting contrast given what are considered to be two rather different types of work and one presumes, workplaces.

It was not unusual to hear the converted powerplant in downtown Baltimore called the company’s new home in that city, but I soon realized that, the idea of home in the workplace has at least one additional connotation to the corporate one. Several employees, ranging from junior staff to senior management referred to their former offices or workspaces in the previous building as the places where they had “lived” as opposed to worked. This I found an intriguing heuristic to examine how people think about their work environment.

Home after all, and in opposition to the way the building industry uses the word, is not a physical construct per se, but colloquially put, ‘where you hang your hat’. Nonetheless, the word brings to mind images of a hearth, residence, safe haven, domestic activity, private sphere, family, and so on. I would dare say it is the richest spatial concept we know given the intimate and intense interaction which takes place there. Beyond that, these utterances reminded me of the fact that my father spoke of his office in the same way nearly thirty years ago. That does not constitute proof of anything, but it does
imply that this is not a new concept and at the very least a notion which deserves further inquiry.

Given all the qualities of ‘home’ just mentioned: is the office an inhibitive environment? In what ways yes or no? If nothing else, one is reminded that, there are many loci in the work world. Work is not any more homogenous than the rest of life. As mentioned by Ryan and Oestreich:

People are not objective about their jobs; they take their work very personally. Their feelings cannot be separated from their productivity and the quality of their work. 27

If that be the case, it is reasonable to expect that this observation is extensible to the work environment too.

This is magnified in the design professions. Taking architects as an example, they may be found working in the offices of collaborating engineers, in that of the client, at the building department, on the physical building site, in an airport lounge or even while mobile. What does ‘home’ mean in contrast to those alternatives? 28

Furthermore, design, at least architecture, is about the built environment, something to which designers as such are strongly attached in a personal way by virtue of it being their profession if not vocation.

One employee at Andersen said that, when she needs “to concentrate, to get work done” she stays home, meaning in this case, her private residence. 29 For her and another employee who said that she is “always talking” it seems the office is may be too homey indeed. 30

One of the consequences of having an open office and no permanently assigned workspace most often voiced, was the impact on work in progress. In short, people saw the absence of space to leave incomplete or ‘idle’ work as spurring employees on towards closure every day and interpreted it as positive for its disciplinary effect. This was not a comment by supervisors on staff, but rather by managers reflecting on their own behavior. They expressed it as “pressure to remain organized.”

Another change in the physical environment perceived to exert this force was the dramatic reduction in storage space available for documents. Everyone, from top to bottom, was restricted to three credenza drawers. The emphasis was on only having available the documents and materials that one needs for the task at hand.

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27 1998 p. 7
28 Having worked nearly five years at Los Angeles International Airport while doing my undergraduate degrees, I was continually amazed at how rapidly and readily people made themselves at ‘home’ in that very public space.
29 Andersen Tape 2
30 This brings to mind Frank Duffy’s matrix of workspace. His ‘club’ office is clearly a reference to genteel men’s clubs, which were supposed to provide refuge from among other things, one’s own domicile.
Archival storage had been relegated to a remote location or electronic media. In the videos, it was clear that this had had an impact on the visual landscape at the very least. Overflowing desks and shelves full of binders were nowhere in sight, even though it was reportedly tax season. This artificial caesura immediately struck me as counterproductive, and speaking as a designer: it sounded nightmarish to even contemplate. To refer to Kolodny's contentions on the regressive and potentially threatening effect of rhythm may seem like a stretch here, but it is not difficult to see how the dictate of clean desks could summon unpleasant childhood memories.

Work, but especially design work, takes on a life of its own in our minds. Its physical manifestation is of genuine importance to our thinking process as shown by Schrage. The visual presence, it seems to me would be of value in sustaining the gestation period that creative problems require. On the other hand, Csikszentmihalyi has observed:

> Devoting full attention to a problem is not the best recipe for having creative thoughts. ... Because these thoughts are not at the center of attention, they are left to develop on their own. ... And of course it is just this freedom and playfulness that makes it possible for leisurely thinking to come up with original formulations and solutions.  

Seeing the facility in the videotape was an open office, I anticipated, the topic of privacy would arise often, especially regarding telephone use. This brought to mind the question of how strictly defined workspace is. Is anyone ever really 'just an employee', even while sitting at his desk? Especially in a professional environment where individuals have greater autonomy than the archetypical factory worker, private life and work life are less strictly delimited.

A woman who said that, she feared using the private offices carried the connotation of "being a bitch" rendered the most graphic statement on the semiotics of the space. It is also a vivid illustration of what Elster calls a social convention. They are:

> ...non-instrumental rules of behavior maintained by internalized emotions and by the sanctions imposed on violators.

Additionally, this remark is a poignant commentary on the real communicative power the use of space has.

Adding insult to injury perhaps, I found this lone criticism telling with regard to the architects who assembled and edited the video material. While it could well be that, this woman was the only one to voice such a criticism, I am compelled to suspicion. Even if she were alone in having expressed such a view, how many others think this way but were wary of saying something on camera? All issues of

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31 1996, p.138
empowerment, etc. aside, one must seriously ask how many people would record themselves on videotape expressing their outright disdain for the workplace the company just spent many millions in constructing? While the corporate client has documentation that it ‘did the right thing’, I would consider it a mistake to believe that the whole story is accurately represented.

Despite the caveat that one consider the spin of the employees input, I do not discount positive remarks entirely. Many felt that the space was one of, or even the most important of statements by Arthur Andersen to clients and prospective employees alike that the firm was more progressive than its stodgy reputation ordinarily suggests.

Gone East – Architecture vs. Industrial Design

While I as an architect am particularly interested in the design of the environment, I had the unique opportunity to attend two design ‘workshops’ which are actually in the field of industrial design. Although not without limitations, I have concluded there were many advantages in stepping out of my field of professional experience. By virtue of the geographical, cultural and professional distinctions between New England and southern Denmark, each workshop was itself a liminal experience for me.

Especially interesting to me was the interaction with members of the industrial design community. I say this for two reasons. First, and perhaps only really an index of the progressive approach at the University of Southern Denmark, is the willingness to have a broadly multidisciplinary representation of professionals involved in the design process from day one. Non-designers come not merely as Band-Aid toting consultants after the die has been cast, but are seen as integral to good design. More importantly, the people who ultimately give form to the objects in question, are not intimidated by what would appear to most architects as a dreaded case of design by committee.

Consonant with that easy self-confidence was my impression that industrial design views itself vis-à-vis architecture rather like a younger, more free-spirited sister. In conversation with a colleague dubbed as a ‘rising star’ by a senior associate, he described a discipline which respects the history, tradition and academic ambitions of architectural practice, but “not in excess.”
A Lump of Brass

In January 2001, I spent a week participating in a so-called Panel of Experts Design exercise at the Mads Clausen Institute [MCI] in Sønderborg, Denmark. This is a unique facility at the University of Southern Denmark, sponsored by Danfoss, the country’s largest manufacturing concern. It is a special place in that the industrial partner has pooled designers there from various product divisions who develop prototypes with the academic one, which both studies the design processes employed and helps facilitate actual design solutions.

The design object, which was under scrutiny, is a remarkably simple device, and one that I would have only ever thought of as being engineered vs. designed in the way one designs an Alessi teapot or a Philippe Starck bathtub. It is both anonymous and ubiquitous, installed by the score in residential buildings all over the Western Hemisphere and referred to simply as a temperature control valve [TCV]. Its purpose is to maintain the temperature in recirculating hot water systems. This is intended to save water and energy, and be more comfortable for residents by reducing the wait for warm water when the tap is opened. The amount and variety of discussion, and certainly the passion thereof, which this lump of brass with one moving part produced, was phenomenal.

Despite what I have said about the ‘ecumenical’ approach at MCI, it was clear from the outset that different design issues had different significances to different members of the design team. In a social context, it is easy to see that this would impede the flow of the workshop. Thinking about the first definition presented for inhibition, this is a good thing.

Although I am not suggesting that bloodshed would have been otherwise inevitable, figuratively or otherwise, collaborative work presupposes a certain level of harmony. The conflict, which would have arisen, were some kind of inhibition not present, is well illustrated by the following comments made in the following excerpt.

During the post event analysis where only people from Danfoss and MCI are present, each of four groups had been assigned to view and interpret brief video clips. Afterwards each team was asked to recapitulate what they found to be the significant findings of the workshop. Here Ira has just completed this task and Isaac is following up.

Isaac: Are any of these points which you think other caretakers\(^ {32} \) wouldn’t question?
Ira: Yeah, the Legionella\(^ {33} \) function. I think a little bit more normal caretaker would have a more flexible view on the Legionella function. I hope so. I really hope so.

\(^{32}\) Caretaker appears to be the Danish translation into English for building superintendent or maintenance man
Victor: I would just like to intervene on this discussion-
Ira: Yeah, okay.
Victor: because I think there are many "normal" caretakers. Every caretaker is "normal" and every caretaker is individual. I think the big man we met: he’s representative of a type. It is not just Per the caretaker: it is a type of caretaker. It became clear that he is not fully informed or misinformed about Legionella., but this is what we discussed in our group could be interesting... aspect for marketing. Danfoss informs about the Legionella problem. People at least who are caretakers are not well informed about the problem.
Ira: He’s not well informed about it because he thought the problem was only when the temperature was above fifty-five. That was when they were growing most.
Stephen: And the reason why he designed it is because he said “It is that I’m not able to operate my system above seventy-five degrees.” ... So let’s say, he needs some additional information.
Todd: But I think you’re right. Perhaps he represents a larger group.
Victor: I just want to argue, if you find one like him: he is not one among one thousand. If you find one like him, you will find five hundred others. So, this is why I am concerned that his knowledge is not—
Stephen: But I want to say that he was only one caretaker and let’s say “he was a very tough person”. He was not so good with his argument. It’s either black or white. Maybe it would be better if we had two other persons, two other candidates.
Victor: He is a caretaker. He is trained to take care of the system. He is not trained to debate or discuss.
Kieth: I would say the caretakers have some opinion. They would not easily try to understand others.

Hearkening back to Bjorklund and Harnishfeger, it is clear that, the impulses Stephen and Ira have squelched during the day-long workshop were obviously neither sexual nor of pure aggression. They are nonetheless impulses which both know to be in their best interest to keep to themselves in the broader circle of the panel. To have expressed their disregard for Per’s opinion in that context would have only netted disapproval from all others present for their primitive ways. This is especially true in view of the fact that they wished to present him as an uneducated buffoon. It would have been a serious gaffe.

What seems especially noteworthy about this episode is that their opinions of the man remain to themselves unquestioned. Their reaction to all of his input is, metaphorically speaking, a reflex, which requires a conscious effort on their part to suppress in dealing with

33 Legionella is the bacteria identified as the source of Legionnaire’s Disease.
him. The most ironic part is of course the accusation that he, the caretaker, will not be open to alternative viewpoints.

On the other hand, their ability to profit from what this idiosyncratic gentleman is saying is inhibited as well. Why though should they fear his input? While it is possible to speculate on a wide range of possibilities, my inclination is to think that what the two do not like is simply that Per is a ‘messy’ statistic. He does not fit into their expectations for what caretakers are supposed to say. He disrupts the order of things and is as such a breach of aesthetics even apart from issues of etiquette. The fear I might suspect they ultimately have, is that of an incipient loss of control, which disorder often precipitates or of which it is indicative.

Disorder is not entirely without its charms though. Since at least Descartes it seems, order as been associated with knowing. Central to this kind of knowledge however, is predictability. Disorder, in contrast, is a breeding ground for surprise, also a valuable agent for knowing. Being startled does not mean one must be scared. Another vignette shows, albeit very modestly, the value of upset and thereby of modeling the installation of the valve we discussed for a week.

The premise for being in the basement of a local apartment house was to see the TCV in action, or rather the interaction of a house superintendent with it. As had been hoped, the environment spawned discussion that might not have otherwise occurred. The incident, which took us unaware would have likely gone unnoticed, if our visit to the cellar had not been captured on video. As it happened, the aforementioned superintendent was comparing the brand of valves he had been using to the ones Danfoss produces. To do this he quite naturally began to remove a Danfoss valve given him from its packaging. After fumbling with the box and plastic wrapper inside, he dropped the valve on the floor. The outcome, besides the fear he had broken it, was a vigorous discussion in the analysis session about a whole range of questions, which had theretofore been neglected, not willfully, but practically speaking, as a consequence of ignorance.

As mentioned above, it was not surprising to find that there were several different design aims vying for attention or legitimization at the workshop. That is practically a given and it is one of the objectives of the workshop to resolve the competing aims. I think it is sensed by all present, but it is never overtly addressed. This points up two things: the snowball effect of inhibitions, and the issue of “the silent designer”.

The compounding effect I have already addressed. The silent designer is Schrage’s term for the role played by those involved in the design process but who never communicate their intentions directly to others. It is easy to imagine that their effect can be very significant. As Eldridge Cleaver is supposed to have said:

*If you’re not part of the solution, you’re part of the problem.*
The point is that people do communicate their disapproval but may feel that it is not safe to do so in an outright fashion. The result can range from feet dragging to sabotage.

**Black Boxes**

In March and April of 2001, I was again in Sønderborg, Denmark to participate in, and make observations of, a design workshop. This time the product in development was a set of interfaces for frequency converters.\(^4\) Instead of inviting intermediate and end users to the forum, guests consisted of several industrial designers both internal and external to Danfoss, engineers responsible for implementing design solutions, three graduate students, two anthropologists, and an architect who was in no way to be confused with a partridge.

Part of my ‘assignment’ was to arrive a few days before the session began in order to help organize the event, especially with regard to space-planning. Perhaps more than I ever anticipated, my own participation provided me with considerable material on inhibition. My notes from the second day reflect the general nature of the constraints which confronted me.

On the whole, I am frustrated; uncertain of many things. I do not see that there are many variables, which I as a designer can manipulate. I am very unclear on budget: my sense is that there is none. The rooms to be used have already been determined, and there is not much in the way of furniture to be used. The only other components are the participants themselves and the material to be presented, mostly in the form of 2D representations. Furthermore, that material is very diverse and I am uncertain how best to organize it, let alone what influence I can exert over its use. I conclude that it has not been a very productive day.

The situation I have described is one, which corresponds directly Csikszentmihalyi’s first necessary condition for the enjoyment of an activity mentioned above. It is that:

> There are clear goals every step of the way. In flow, we always know what needs to be done.

Not having that sense also precluded the presence of another of his tenets:

> There is no worry of failure.

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\(^4\) A frequency converter is a ‘black box’ for steering electric motors in a wide array of applications ranging from pumps to conveyor belts and used in a variety of places such as breweries, power plants, and airports.
While I do not claim a one-to-one correspondence, the relationship between a constraint external to myself, ironically the absence of a clear agenda, with an inhibition that it in some way provokes is evident. While I might admit to having been timid before confronting the ill-defined situation, this exacerbates it for me.

The next transcript is from a collaborative design session on the afternoon of the last day of this event. The participants are rehearsing a scenario in which they will demonstrate how their solution for different interface devices fit together in a system and how it meshes with the operations of a customer. I, Michael, am supposed to use a diagnostic tool whose function, as it turns out, is unclear.

Helga: Okay, I ask, 'Can you come over? I have three racks.'
Michael: Um, okay, after lunch. (laughs)
Helga: Okay.
Michael: Okay, I've got this tool. I don't know what I'm going to do with it. (arrives at workshop)
Helga: Hi.
Michael: Hi, how are you doing?
Helga: You see, I have the three racks there for the newspaper. So, I already put all the parameters in and the cards and I wrote a label on each card.
Michael: So, I'm supposed to test that they operate properly, or that they're programmed properly?
Mark: Probably that they're programmed properly.
Michael: Okay, (gestures as if hitting machines with a club) they all appear to be functioning. Okay so, I'm finished? (shrugs shoulders)
Kent: Yeah, but you should run the test from your tool.
Michael: So, wait, I'm supposed to be able to operate these racks with the tool? Shouldn't I be able to operate them just like they are?
(Everyone chimes in at once)
Helga: I think you have to override some things.
Louis: You should be able to simulate a few things.
Kent: You cannot start it, you cannot stop it, but a basic test of the function.
Michael: Right, but-, okay I understand, but I don't understand why you need this tool to do that.
Kent: It's because it has, because it has some pre-program that it runs step after step after step. So, you just press start and it will test everything and tell you what's wrong.
Michael: Okay—
Kent: So
Michael: and, and how do I do that-- with it? Is it now infra-red?
Kent: Yeah.
Michael: Okay. That sounds— alright. (kneels in front of machine mock-up) So, I press all these silly buttons. (makes sound effects, laughter in background) No flames, no explosions and the tool tells me that everything's okay, so I guess this one's alright. (moves to next machine) So, I run this one. I
smell smoke someplace. Hmm, one of the motors is turning far too fast. What’s the problem?

Kent: Back to somewhere.

Michael: Back to somewhere?

Kent: Yeah you just, or the governor or the motors going too fast.

Michael: Right. So, does that, there’s some kind of stop button. I can shut it off I guess?

Kent: And then someone has to repair it.

Michael: Someone has to repair it?

Kent: Yeah.

Michael: Well, then, what if it’s a complicated problem or there are several things that are wrong?

Kent: Yeah, but I don’t think that we should do it in this scenario we should play out what to do when. Then we can’t ship it out to the printer.

Michael: Well, okay you’re right, but I don’t think you can’t ignore the fact that it has to be corrected somehow.

Kent: No, you just leave it here and you don’t take it to the printer.

Michael: Okay, well all I know is that, is that this one is okay

Helga: Yes, you can make a mark that it has been tested and is okay for shipping.

Michael: So, we’ll say this one failed and this one’s okay and then what? I go home?

Helga: So then you have some labels and then-

Michael: Okay, I’ll just mark them.

Kent: Okay, I guess then Mark is coming and taking them to the printer.

Michael: Yeah, okay but, I don’t think this is going to fly if you say this one doesn’t work. I mean there’s got to be some way for me to communicate exactly what the problems were to the guy who fixes them.

Kent: Yeah.

Louis: That’s another scenario.

Kent: Yeah, that’s another scenario. You can just say that you have to communicate it to the guy.

Michael: Yeah, well I don’t know. It just seems like a big unanswered problem to me.

Mark: So, you just call me and I’ll come get them.

Michael: (calls Mark) Yeah you can come over and get rack two. It almost burned the building down.

Mark: I supposed they were ready, I’m no service man.

Michael: Oh, I’m sorry. Okay. Then come get racks one and three.

The first and most positive thing about this little skit is its improvisational nature and the humor involved. There is a structure followed, but each participant is allowed to explore the territory around his character and the consequences of his actions independently. The problems arise, if they should be called that, when some players are not prepared to deal with the twists handed

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35 This is much more apparent in the videotape.
them by their cohorts. Seen with greater circumspect however, these difficulties are very valuable.

Reflecting on Schrage's view of modeling and simulation suggests that, what needs fixing here is not necessarily the technical and procedural problems hit upon by throwing a wrench in the works. The attitudes of the other actors to the consequences say more about the possibility of finding a satisfactory solution. An evaluation of the appropriateness of their response might be gauged with the same criterion for good model building. If the simulation is too realistic or too abstract, understanding will be compromised because larger trends are obscured by inconsequential details, or because critical aspects are ignored altogether. So one could ask, “Did the other role players object because they had no desire to grapple with critical deficiencies or because Michael’s objections were more obstreperous than insightful? Was he being too playful? In many senses, it comes down to knowing what one can get away with.

The next scene is lifted from the real filming of the scenario just discussed. Being near the end of the session, it is apparent that the participants are growing restless. I, Michael, was experiencing the light delirium that follows sleep deprivation and a deadline met.

Victor: I'll say 'camera's running' and then the camera’s running. Then the action runs and no other comments
Inigo: Yeah, yeah.
Michael: Violators will be shot.
Louis: And survivors will be shot again.
(Helga and Mark converse briefly in Danish.)
Victor: (in response to them) We’re trying to make it like a film.
So, I will always say when the camera is running.
Mark: Yeah.
Helga: Okay.
(Victor explains once more in Danish.)
Helga: You’ve got that Michael?
Michael: (after a brief pause) Oh yeah, absolutely. (chuckles)
Helga: After the camera is running, wait one second and then you can play.
Victor: Camera is running.
Helga: So now these are the last things I have to do here. Actually now I’m finished. I need the three drives. I think I will phone Mark so I can get the three drives. (makes phone noise)
Mark: Yeah, hello.
Victor: Cut!
(Victor, Helga, and Mark discuss the next scene in Danish)
Victor: Camera is running.
Mark: Yeah, how can I help you?
Helga: Yes, I need the three drives. I finished the racks so far, so if you have time to come over that would be really nice.
Mark: I shall see what I can do.
Helga: Bye.
Mark: Bye-bye.
Victor: Cut!
(Victor, Helga, and Mark discuss the next scene in Danish. Giggling in background)

Victor: Camera is running
Mark: Well, let’s see what we’ve got here on storage. We have exactly three VLT’s so I will get them. They are all installed with hard keys, so I will take them with me. (goes to mock-up racks where Helga is waiting)
Helga: Hi, that was fast. (Michael chuckles in background)
Mark: That’s nice. I could do something?
Helga: Exactly the ones I need. Three identical drives. Three identical racks and three identical drives. (Meanwhile, Victor signals Michael to be quiet but he doesn’t see this.)
Mark: The cards aren’t with them, so you can just do whatever you want.
Helga: I start installing them right away. Just have to wire it up, so it shouldn’t be very much work. ... So, that is finished. So, now I think I am going to phone Kent. (makes phone noise)
Victor: Cut! (turns to Michael) Michael, what’s going on?
Michael: (laughs together with Louis) What’s going on? Why am I laughing?
Victor: It’s irritating. It’s getting irritating.
Michael: I apologize. (spoken very softly)
Louis: We’re not allowed to have any fun here. It’s work.
Victor: No, you can hear it in the microphone. We have the intention to present it somewhere.

As is clear from the beginning of this episode, one of the individuals is taking the whole thing rather more seriously than the rest. Ignoring for a moment what the cause of the cameraman’s stern bearing might be, it is apparent because he is disharmonious with those who see the thing as more light-hearted. He sees what the group is doing as far closer to a finished product than they do which means that, to an extent their aims are inconsistent with one another. Victor may not realize that the scenario the others are presenting has some serious shortcomings and they in part are ceasing to care.

Apart from the mental states of the individuals, their fatigue and the associated irritability, both the cameraman and the others are inhibited by the situation even though the latter clearly appear more playful. Both parties are frustrated.

On the same afternoon, preceding and in parallel to the sequences just discussed, I had been working on one element in the system of interfaces whose use we were narrating in the video taped by Victor. I had had it in recollection as a pleasant experience, having made what I felt was progress and having received copious praise from one of my fellow participants who specializes in such things. Looking at the video months later, I was amazed at how much time I spent in discussion preceding the ‘actual’ designing. I recalled the flow state, an index of which is a loss of the sense of time passing, but not the part leading to it.
In contrast to the psychological compression of time I experienced, the value of doing it artificially occurred to me by chance. In the course of simply fast-forwarding through tape of different design sessions in Danish, some intriguing patterns emerged to concretize what had otherwise only been a murky intuition.

Two of the participants, who were visiting from Malmö, were respectively a doctoral candidate finishing his dissertation and a new graduate student ‘in his care’. The new student was several years older than the ABD and had a background in journalism and theater but nearly none in design. His cohort however had in contrast two engineering degrees to his credit and was teaching at the university in Malmö. The patterns in the tape revealed their differences even more convincingly.

While one might have expected that the newcomer be inclined to take a back seat by virtue of relative inexperience, nothing could have been farther from the truth. The other individual, from whom one might have expected much input, looked like a lost soul. Where the newcomer was seen in long animated conversations with an experienced designer, the rhythm of the younger but more knowledgeable man was a slow but visibly uncomfortable circuit through the space.

**Conclusion**

Through the examples presented in the cases, I have sought to demonstrate instances of inhibition across a broad spectrum of sources. For the remainder of this discussion, I will talk about the origins of inhibition in terms of the workplace, organizational strictures, and borrowing from Horgen, et al, work process design, i.e. the organization of work in the physical environment.

In rough correspondence with this schema, the first case provided clear evidence of the impact the physical surrounds can have on not only people’s personal work habits, but inextricably on their interaction with others also. The second case began to reveal some of the internalized constraints, i.e. inhibitions, which affect the way people perceive one another in design situations. The third case offered examples, good and bad, of how the work’s organization helped or hindered progress towards design solutions.
4 What now?

Commencement

I hope in this cursory inquiry to have suggested, if nothing else, the complex relationship between play and inhibition in innovation. Constraints, and there under inhibition, are not categorically bad. It is commonplace in all art forms to consciously restrict one’s self in order to manage the multitude of permutations and possibilities available to him. As Elster notes:

If Woody Allen made “Manhattan” in black and white, it was not because he lacked the money or the technology for using color.36

In contrast to this, Elster suggests that even in the purest or most abstract realm of science, mathematics, things are fundamentally different. While art and science both profit from a balance of variation and selection,

[in mathematics, beauty is a good but imperfect indication that the goal - truth - is in sight. In art, beauty is the goal. ...The artist ... solves the problem in a way that has no analogue in mathematics. ... In science or technology, creativity is never enhanced by the creator's pulling punches or tying one hand behind his back.

If one could think of architecture as corporate for a moment, and analogously as having a psyche, it might be possible to consider the profession itself inhibited. Apart from the matrix of external constraints listed in chapter three, Elster’s observation suggests a fundamental internal conflict in that design, or at least architecture, seeks both truth and beauty in the way he has defined them.

36 1992, p.32
At this point though, I would like to suggest where I see some common threads running through the thought tabled thus far. These are the ideas around which I have sought to orient my first hand design experiences and from which I hope to derive some practical suggestions for designers.

As I have already discussed in chapter one, the liminal experience is central to both play and creative behavior. This is no less true for inhibition. From the cognitive behavior standpoint, this is precisely the advantage of the inhibitory mechanism. The pause, the break between impulse and action makes it possible to consider a far broader repertoire of responses to any given situation than primitive reflex can offer. Play is in a sense no different. Where inhibition decouples the unquestioned from unreflected execution, play disconnects one from the convention of everyday life and the censure of breaking with it.

This becomes valuable when one considers play and inhibition to be operating together like a gearbox. In the creative gearbox, one has input, appropriately enough, from the impulses, and output via expression in the real world. The all-important clutch is the liminal experience afforded by both play and inhibition. It interrupts impulse and action so that one can find the best combination in response to the demands placed on the whole system, the creative individual. When the right mode, or gear is selected, creativity flows.

I suggest that, exploring the common trait of liminal experiences is one of, if not the most, promising of avenues for achieving more productive design environments. I think it is clear that they must afford vulnerability similar to that which I described at the end of chapter three. Rapture requires a refugium.

Suggestions for change – Living dangerously

As with so many programs for action or reaction, it seems to me that what gets implemented are the bullet points and that the carefully crafted plans they represented go the way of a mold in lost wax casting. People grow cynical over time and come to regard all such measures with contempt. The resonance that, the comic strip "Dilbert" enjoys is a testament to that fact. The Dilbert Principle has become part of workplace parlance.

I begin with these protestations because dealing with inhibition and even playfulness seems to me a complex undertaking. This is not to say that intervention cannot be bold. I think that, in any case, it can be experimental and productive. Although I, for example, was very disappointed at not having been able to carry out my plans fully in Sønderborg, the experience showed me how much is possible.

37 As told in the Appendix. Of significance to me was that my modest experiment elicited a flutter of conversation at all and interestingly in the context
Try this at home

The first objective of putting design where one’s desk is, is to suggest to clients that the ‘water is fine’. If architects cannot chide, cajole, or coerce their clients *cum* design partners to loosen up and embrace more creative solutions, perhaps they must consider taking them by the hand.

Closer to home, I suggest this sort of willingness to experiment in the safe haven of and with the office itself would send a powerful if unspoken message to everyone working there. Not only does it say that the office is willing to try new things but also to learn from its mistakes. Not only does it communicate integrity in a way that words never could, it returns to architecture a bit of the sensuality and intimacy from which modern practice threatens to disconnect it.

While the term experimental has many connotations, one of them is that new opportunities are probed *under controlled conditions*. The advantage of this aspect should be obvious in light of the connections between inhibition and fear that I have outlined. In the end, the idea is to be meta-experimental.

In the spirit of Bateson, I propose that, doing something meta-experimental is another expression of, and means for advocating play. If a constituent of the design climate is the willingness to experiment with experiments, the message should be: "I’m proposing a solution to deal with our inhibitions (or anything else). Play along. It is safe.”

Because inhibition is a kind of constraint, and play is dependent on constraints to exist, I expect that manipulation of constraints is central to any effort at promoting innovation. This follows from Elster’s observations whether one is dealing with the arts, the sciences, or their love-child: design. Manipulation should not be construed as a set-it-and-forget-it enterprise though. That is contrary to the nature of experimentation and engenders the attitude that one presumes to fully understand the nature of problems from the outset when problem finding is actually as important as problem solving.\(^{38}\)

Experimentation in the interest of encouraging experimentation need not end with exploration of the architect’s space. Work has grown synonymous with knowledge work in that it has in many ways become more like architecture, project oriented and process driven. How many offices have fundamentally rethought how to organize their work and to integrate those ideas into their physical workspaces though? One wonders if Richard Meier ever allowed his draughtsmen to lay aside their white frocks and gloves once they began using CAD.

In any case, it seems that one of the most important underlying ideas in terms of implementing measures to ‘manage’ inhibition and

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of discussing ‘home’ that it was immediately described as having ‘Danish coziness’ by my colleagues.

\(^{38}\) Getzels & Csikszentmihalyi, 1976
play is their non-linear nature. In the same way that external constraints can compound internalized ones into a downward spiral, the process can be reversed. That is ultimately the motive behind the meta-experimental design space: to cultivate an environment with implications beyond the architectural one of investigating issues of form.

The anticipated rebuttal to these suggestions is of course that they would be cost prohibitive. As I elaborated in my notes from the second Danfoss session though, this need not absolutely be the case. Five dollars worth of construction and paper and a half-hour’s effort produced a dramatic effect. It is in some way a question of scale. A firm like NBBJ with yearly revenues of 135 million dollars is in a different position than a midsize firm of circa 50 people with between four and eight million dollars flowing through its offices per annum. Nonetheless, a few thousand dollars per year wit which to play does not strike me as unreasonable. After all, in design terms, effect is the bottom line. Architects undoubtedly, design for practical and technical considerations, but I would argue that, it is the experiential component, which is central to their ambitions as designers.

Constraints are manifold and so too should the approach to subverting them be in ways which demonstrate more imagination than dress-down-Fridays. This is where one might return to the proposition made in chapter one that, the axes of play there defined offer an entrée to the liminal world which is sought.

In concert with the idea of manipulation, the axes of play could be thought of as sliders on a ludic mixing board. As I proposed that each of these axes corresponds to an aspect of architectural space, effecting changes might be attempted via alteration of those same parameters in the design environment. But again, experimentation making the print room more amorphous or the model shop less sensual is most interesting when considered as a product of changes to the physical surrounds as well as the work process. What is to fear, but fear itself?

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39 Too often I have been warned by friends when playing with their children, "not to get the little ones wound up."

Appendices

Fieldnotes

Arthur Andersen

Open space makes work-in-progress more difficult
Difficult to find quiet space
proximity to storage
pressure to remain organized
pvt. Phone calls
office goes w/ age, responsibility, prestige
relationship between biz and pvt life
"stay home to concentrate" seeing people incites conversation
fear that using pvt space connotes being a "bitch"
responsibility for success - recognition
different workspace everyday- stimulating or intimidating? Proximity to seniors

Danfoss Case I

The Panel of Experts workshop is built around the idea that everyone involved in the design, marketing, sales, specification, installation and maintenance of the product has potentially valuable input for the refinement of a design. The durability of the method of inquiry used in the workshop was without question the most abiding and impressive aspect of the exercise I observed. Although compromised from the outset in that it is ordinarily scheduled to transpire over the course of two weeks, the consensus among participants was that it had been a very useful experience. Despite time shortages, misunderstandings about the plan of action within the project team and personnel difficulties at key points, the process was robust enough and sufficiently provocative to yield real insight to the product designers in their quest to bring a new evolution of their product to market.

I observed this change in perception not only on the basis of what the engineers themselves said about the project, but also by the evolution of their attitudes through the course of the week. For better or worse, this openness to new views was not uniform. The persistence of belief systems on the part of the people who have the most contact with the users was notable. Precisely those people entrusted with reporting customer input to the product’s designers were the ones most hardened to their commentary when it was not in alignment with their own views. While these people are not themselves designers, they form a vital link in the reiterative design loop. Why should they have these misgivings?
Especially valuable in offsetting the saturation with the design task, which we all began to feel towards week's end, were the fresh perspectives brought by two participants who only became involved on the last day of our charrettes. The insight of these outsiders served to reaffirm the philosophy of the Panel of Experts workshop by showing the value of 'naive' viewpoints in learning more about a problem in which one has become immersed.

One of the real strengths of the Panel of Experts workshop I was eager to experience was the very conscientious use of different environments to be employed for different kinds of discussion about the object in question. Although this was not fully realized, the results of the on-site exercises were convincing. Discussions were provoked, about tertiary yet important issues like the packaging of the valve, which it is hard to imagine, would have otherwise come about.

While less interesting to the people involved in the design, marketing and sales of this artifact, I was as much intrigued by the dynamics of the planning and evaluation sessions as the Panel of Experts workshop itself. At the surface, one might characterize things as being predictable, and yet I wonder how often we pay attention to the small obvious things, which occur in these settings. As an example, I consider the first meeting held in a conference room at the client's offices. Engineers, sales and marketing people and the workshop's hosts met for the first time and haphazardly found places at the table. Although these places were neither assigned nor appeared to have a particular practical significance, people became attached to 'their' places very quickly. Despite disbanding to form separate work groups and go to lunch, everyone was very conscientious about returning to 'his' chair afterwards. It would have been interesting to meet there again later in the week to see if that still held true.

At perhaps an even more mundane level, the different levels of familiarity with that environment and its furnishings were apparent too. While this is probably looked upon in a negative light, I don't think that this need be absolutely true. One of the stated ambitions of design in context is to empower users by interacting with them on their home turf. Perhaps though, the inhibitive influence it has on people who ordinarily 'call the shots' is just as valuable in fostering dialogue.

Taken in its broadest sense, the environment is suggestive in all of its physical clues. From this standpoint, I became keenly aware of the 'dress code' which seemed to exist during our week of interaction. As an example, I can say that the sales guy was as readily identifiable as he would have been elsewhere in Europe or in the US on the basis of his attire alone at least in the construction industry. He always wore a collared shirt and a tie, as if to say I'm corporate too, but usually rather loud one, because of course being corporate doesn't have to mean you're a stick in the mud. On the other hand a jacket by no means. What would the plumbers think?
...had he become a pretty boy? I can't help but imagine that that influenced his role in the group, even if imperceptibly. It would certainly go a long way towards explaining why he looked so thoroughly uncomfortable all week.

It is easy to dismiss this notion at first gloss, but thinking about it from another perspective, people most certainly notice when someone is not dressed as he 'should' be. When he doesn't meet the unquestioned expectations people have, notice is taken. What's this guy up to? Why is he acting so strange?

Danfoss Case II

Daily log

Mo 26 Mar 01

Introduction by Isaac to the VLT project.
Isaac began by explaining frequency controllers [FC’s] and their different applications in industry. Briefly, they are local control devices for electric motors, running everything from simple water pumps to assembly and production lines. There is a whole division of Danfoss related to this product line known as Danfoss Drives. The objectives of the workshop are to further development on some initial proposals, which have already been made for the FC’s man-machine interface [MMI]. These ideas are based on interviews/ field studies of a quasi-ethnographic nature. These videos or rather clips from them will be reviewed during the course of the workshop. One of Isaac's primary concerns however is that the participants in the workshop do not start over from scratch. He feels some important foundations have been laid and is a little worried that people from outside the User Centered Design Group [UCD] will try to reframe the problem, setting back the progress for a product, which is growing overdue on the market. To help prevent this, each member of the team from outside the UCD (engineers, marketing people, and programmers) will be double-teamed in each of the five groups, which are concentrating on specific components in the revised interface.

The workshop itself will run over the course of 5 days, the first three being dedicated to three different types of applications: end-users, e.g. breweries or waste treatment plants, companies who use the device as a component in their own machines, and users interested in modular capabilities.

I spent today considering ‘inhibition’ generally and made the following notes to myself:

Do familiar environments = familiar problems?, familiar approaches to problems?

What does the team want/envision?
- Are these people really a team?
- In what way yes? In what way no?
- How does one engender a common vision?

Speculations on ‘inhibitions’ of outside participants in the drives workshop
- Don’t want to waste time doing ‘other people’s work’
- Don’t understand that users see the world differently
- Understand, but don’t respect other viewpoints because they come from uneducated users
- Feel that there are no incentives to participate:
  -- See no opportunities to make own work better or easier; not productive
  -- Participation not considered pleasant in itself

Strategies for inhibition reduction fall along an axis from provocation to pacification

What objects themselves symbolize or appear to symbolize and how they are actually used or for what purpose can be quite different.
(observation on round tables vs. rectangular tables)

Tu 27 Mar 01

Today I experienced the spaces allotted to the workshop for the first time. First impression: Although the building is a simple box, the layout of spaces is confusing and disjointed. They are like leftovers jealously conceded to this project. Is it fair to say that this is representative of what management thinks of this exercise? Isaac has asked me to be responsible for developing a strategy on how best to organize the workshop in the space allowed us. Given the circumstances, this appears a daunting task. I have been focused on trying to understand the workshop’s agenda and the information which is to be conveyed, discussed and transformed into concrete design solutions. The only real structure I have to go on is the fact that there will be five groups who will meet to discuss individual components. I’m told they should only really interact with each other at the scheduled showing of video, the so-called action scenarios and presentation of work at regular intervals throughout the day.

Louis, a Ph.D. student from Malmö, and I spent an hour or so discussing the relationships of the components to one another, as it seems it will not be possible to isolate all groups. There is some question as to which rooms will really be available and how many of them. I’m left wondering what I can do beyond assigning groups to rooms. Isaac sees that Louis and I are stuck on this point, and calls our sketch “not very creative”. Left alone in DG12-09, the main meeting room, I consider Isaac’s emphasis on ‘staging’ events and think about making a space for that to happen. I discover that
making a large ‘L’ out of the four tables makes for a far more dynamic space and indeed creates a kind of stage. Later I find a floor plan of the building tacked to a bulletin board and make copies for my planning: my coup of the day.

On the whole I am frustrated, uncertain of many things. I don’t see that there are many variables, which I as a designer can manipulate. I am very unclear on budget: my sense is that there is none. The rooms to be used have already been determined, and there is not much in the way of furniture to be used. The only other components are the participants themselves and the material to be presented, mostly in the form of 2D representations. Further, that material is very diverse and I am uncertain how best to organize it, let alone what influence I can exert over its use. I conclude that it has not been a very productive day.

We 28 Mar 01

The first news to greet me after arriving at Gråsten is that I am not unwelcome, but unexpected today. Irving, responsible for organizing this design event, informs me that he thought I was meeting at MCI with Isaac. I call Isaac and learn that he is pleasantly surprised that I am in Gråsten and not “just sitting around there waiting for something to do.” He asks how things are going, and I am compelled to relay my frustration to him. Isaac declares himself satisfied, saying “it would be quite boring for me if everything were already perfect.”

Irving kindly offers recollections of his own lack of confidence when he first began at Danfoss. We discuss the project in general and then some details about the different components under development. One of the things, which have struck me, is the overlap between the functions of different components. Irving defends the presence of each to my satisfaction while conceding that by the end of the workshop, the piece I have questioned, the applications hard key, may very well disappear: after all, that’s what it’s all about.

We return to my problem and he offers an idea he has had about the physical layout of the rooms that he has used before, or wanted to use: it’s not entirely clear. He suggests that the information be presented in terms of facts and ideas (not exactly his terminology, by my translation). One wall will have what has been already established on it, and the other will show speculations that have been made. At this point I feel comfortable expressing the only other real ‘idea’ I have had besides the ‘L’ arrangement in the conference room. It seems hokey, but I’m thinking that if: i) the emphasis is placed on action in every room and ii) the typical notion of meeting is corrupted, then this will be of advantage to the workshop. To achieve these lofty goals, I suggest moving the tables in all rooms in front of the windows. The thinking is that they are there to present our props, be they mockups or actual products already being made. This will give
maximal wall space for presenting ideas and a stage for things to happen. The movement that Irving has suggested between facts and ideas will be less impeded than otherwise: no one will be trapped behind the table when the spirit moves him to gesture, or engage information hanging on the wall.

Irving responds positively, reminding me that everything we are doing is about experimentation and deserves a chance. Nonetheless, he warns me that I should return the tables to their orthogonal configuration because the engineers will be meeting today and he doesn’t want to ruffle any feathers.

Upon presenting my ideas to Isaac, he suggested that maybe I was a little “too inspired” by his statement on “staging” things. He’s worried about people hiding behind the ‘L’ table in the main room. When Turid arrives, she is perturbed, as was I, by the layout of the rooms and the proximity of those in the addition to the rest in the main building. She urges, as I had on Tuesday, though far more forcefully, that some of the open spaces around the assigned rooms be commandeered. There is considerable conversation about the political viability of such an action.

The discussion continues on how to organize things for the coming three months, with much debate about the relationships between those in the UCD relative to the different groups of engineers who will help to realize the final design of tools we will discuss in the coming workshop.

Fr 30 Mar 01

Today has not proved very fruitful. My involvement in the project revolves around helping edit video clips and being frustrated about my extremely limited role in the planning. In helping set up the rooms for next week, something interesting happened. As Louis and I were putting posters up on the wall, we came to one room where the wallpaper had an especially coarse texture. While I thought that the posters would be likely to fall down, I scavenged a few thumbtacks from a pin-up board and secured the poster with them. Louis exclaimed that I ought not to do that. “Making holes in the wall requires permission.” – for thumbtacks!

In contrast I notice that the table which was reconfigured into my modified ‘L’ form on Wednesday evening is still in place, and the resident engineers have been seen using it for meetings without complaint.

Su 01 Apr 01

Having just met Sid, we discuss the project generally and my role in it and expectations that I had had about my participation. I describe how I have felt incapable of making any contribution. I feel this has very much to do with the absence of any framework for making
proposals, i.e. no agenda of desires, no budget, no indication at all of what to anticipate in political terms. I, after all do not work for Danfoss, or know the subtleties of Danish culture, let alone the corporate culture of the company which is running this project. In short, I feel rather intimidated. Isaac's extraordinarily quiet nature gives the impression that one could easily run afoul of him and not realize it before it were too late, all for lack of warning signals. As a guest here, I am not eager to cause problems.

Sid asks me rather directly what I thought would be possible regardless of this. For the first time, I mention some of things, which had occurred to me abstractly. Color, I mentioned, was probably the most effective way to change a room for the least amount of money. I suggested a vibrant orange to counteract the gray-blue, carpets, windows, and light. Considering the light more directly, I thought it might be possible to alter the existing fluorescent lamps, since any kind of replacement, would be impracticable in every sense. Hearkening back to the staging concept, I mentioned the idea of having people sit on the floor. To support that, I thought that the tables in our 'L' formation could be fitted with plywood on one side so that people could lean against it while perhaps sitting on cushions. Isaac had been worried about people hiding behind the tables and thought that this intervention would not only prevent that, but also create a more informal atmosphere to boot. Perhaps Turid, lying luridly on a table as she had sketched and considered alternatives on Wednesday had inspired me. Finally, I considered the floor itself as an opportunity for intervention. Since the different tools being considered all dictated a particular pattern of movement, I thought this might present the chance to map those movements being considered as a prop for further discussion.

Sid was very positive about my ideas and enthusiastically offered his assistance in getting them realized. As the workshop was to effectively begin in a matter of hours, it was clear that at best these interventions could be only accomplished in stages, while the workshop was running. Actually this appealed to me, the environment changing, becoming more particular as the designs for the five components supposedly advanced as well. This would mean beginning with something on Monday at lunch and then again in the evening, carrying on in this fashion for the three days of the workshop.

I went to bed excited and energized with the thought that I might still accomplish my mission of doing something meaningful or significant in the context of the MMI workshop.

Mo 02 Apr 01

Knowing that Isaac is going to be stressed at the opening of the workshop, I am leery of pouncing on him with my ideas. He is indeed preoccupied, but I get him to agree to a chat at lunch. He has
an errand to run, so I offer to ride along in order to make use of the

time. Meanwhile I approach Irving and ask him if it will still be possible to ‘intervene’. He says in principle yes, as long as I don’t rearrange anything at that very moment. In the car with Isaac, I briefly outline my discussion with Sid from last night. I make explicit that very little if any of what I suggest can be correlated one-to-one with any specific outcome. Isaac smiles his smile occasionally at what I’m saying. Hard to tell whether he’s suppressing disapproval or communicating that he likes my ideas. He does say that he’s suspicious that the idea of sitting on the floor is too much. Otherwise, I only get to hear that in general he likes the idea of progressive changes and then the subject is changed. Isaac returns to the subject only by saying that, “... anything I could do to support or improve the action scenarios would be great.”

I’m unsure about what this all means. If there weren’t the pressure to act so quickly, I would be satisfied. After the day’s sessions are completed, I again approach him and he suggests only that I talk to Sid. Back at MCI I see Isaac again and ask directly if he wants me to proceed with any of the things I’ve mentioned. He mumbles something, which sounds very weakly like ‘yes’, but then leaves the building without saying anything. I’m puzzled. He comes back in about five minutes and again suggests I talk to Sid, who happens to be in a meeting at that moment. He assures me Sid will be finished in half an hour. I am becoming irritated. Why isn’t it possible to get a straight answer? If there were any interest at all, wouldn’t one signal that with follow-up questions like, What will it cost? When will you do it? How will you do it? I’m not asking for anything more than a bit of orientation, I reason with myself.

Thoroughly frustrated, I consult Victor, the design anthropologist and meanwhile a trusted confidant. He suggests plunging ahead and contacting Irving in order to gain access to the building. After the extraordinary efforts required to accomplish even this, I learn that the building is alarmed and that there is no chance to enter and work. He tells me that we could stay on Tuesday evening if we would like. In short, it’s been one hell of a trying day, and I’ve not even begun to reflect on the actual design event taking place.

Victor, Helga who is an industrial designer from the UCD, and I have been assigned to develop the service tool, one of the five components being considered. I find it amusing that I as the complete outsider, I am the one who finds himself in the position of keeping them on the straight and narrow. Nonetheless, I am enjoying the work. Note to self: don’t forget what you’re really here for.

We are somewhat overwhelmed by the task, given our depth of knowledge and the ambiguous relationship of this component to the other tools and their tasks. Part of the problem seems to be that we are only shown a few of what we know to be several video clips representing many different situations in which the components we are designing will be used. The tendency is to try to anticipate what
demands will be made on our tool before we actually have sufficient information to react. This leads to slightly anxious speculation about what we should be doing. I encourage my teammates to focus on the problem at hand. The first round is not so productive as we are ill-prepared to answer the question ‘What can your tool offer the user in this situation?’ At best we learn that our tool alone can offer some sort of remote control function. Whether or not this is useful is not clear.

The afternoon goes much better and we begin to see interesting opportunities for our tool to interact with another component, the hard-key, and how to exploit its unique potential as a translator between other components and older models of drives. Helga hatches the idea of the hard-key becoming an identity card, which seems to offer an interesting perspective on things at the very least.

Tu 03 Apr 01

Sid and I have decided the night before that we will try to initiate something during the lunch hour. The most dramatic and readily accomplished solution appears to be an assault on the fluorescent lighting. We dash off to find some materials and find that the group has a very unhealthy habit of wolfing down its food. Are they really that anxious to continue working? It becomes clear that we will have to continue in the evening even to realize one little intervention. This however proves frustrating too. What I thought would be simple constructions are taking a lot more time than expected and we are thrown out at 6pm. Not much sympathy for creative genius here. We learn that there will be someone at 7:30am in the building. Great!

We 04 Apr 01

Having barely caught the 6:37 bus and connected to one, which only brought us within 3 km of the office, we stumble in, and get to work despite a grumpy engineer who’s sour about us cutting foam and “stinking up the office for whole day.” Sid is certain that he simply disapproves of our folly. Eventually I succumb to the realization that my oh-so elegant design is not going to be ready by 8:30 and resort to covering the two larger pendants with yellow paper. Sid manages to complete one of the pyramids I had suggested for the smaller fixtures. Overall, I myself am impressed by the dramatic difference wrought by less than five dollars worth of construction paper. Unfortunately the room is much dimmer, but the light much warmer. I’m very disappointed that I can’t understand all of the spontaneous comments made by the team members as they enter, although one phrase I recognize immediately, danske hugge, roughly Danish coziness. How appropriate is this to our final day of charettes? I half-heartedly rationalize this to Mark G., Irving’s boss, by saying that I’m simulating low light conditions that one would have to expect in
applications of the different components. He acknowledges that I mean this in jest. I can only offer that it's an experiment, and dirt cheap at that. He proclaims it good, if only for that reason. I'm not sure in retrospect. I've rearranged our modified 'L' to add another notch of provocation. At the very least people notice the new surroundings and apparently find it good, except for the complaint about not being able to use the video camera in such relatively low light. (this proves unwarranted)

To counteract the nonspecific speculation, which has been going on in the design sessions, we are given very particular situations in which our components must function. These are then played out, filmed, and reviewed by the two groups into which we've been consolidated. It doesn't seem like we've moved forward with the design although Mark T. another industrial designer is extremely complimentary of my screen mock-ups for the PC software tool, actually the component he has worked on for the two previous days.

Probably the best experience of the day is the making of the videos. None of us can resist the temptation of being a bit silly during the practice round. In fact, during the 'actual' filming I am scolded for failing to contain my giggles. Victor scowls, “We might want to show this to someone.” So much the better I think to myself. This is pretty dry stuff. Why shouldn't we enjoy it and let others do the same. If we've shown anything useful, I think it's more likely to be remembered in the context of a little humor. As it turns out the videos are rather dull in the end, but they do record some glaring deficiencies in our schemes.
**Videologue**

**Arthur Andersen**

Tape 1: Compilation of employee commentary/video of new offices
40 min.
Tape 2: Compilation of employee commentary/video of new offices-cont.
40 min.
Tape 3: Interview with managing director at Arthur Andersen, Baltimore
30 min.

**Danfoss I**

Tape 1: Preparation for workshop/Workshop
Tape 2: Post workshop analysis

**Danfoss II**

Tape 1: Workshop planning week 1
Tape 2: Workshop Day 1-design am/group am/design pm/group pm
Tape 3: Workshop Day 2-design am/group am/design pm/group pm
Tape 4: Workshop Day 3-design am/group am/design pm/group pm
Tape 5: Post event discussion/analysis
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The liminal experience of play is a state of being removed, although not entirely, from ordinary waking consciousness. Huizinga contended that, we always remain conscious of the so-called real world, even when we are absorbed in another where different rules and priorities govern our behavior. The built environment finds itself in a similar role relative to ordinary waking consciousness in the way its presence inhabits the edge of our consciousness. We move through buildings and cities, which surround us everyday, attenuating now and again to particular aspects but seldom remain engrossed in the details. The notable exceptions are architects and children, who routinely take pleasure in the details which others commonly miss.

As artfully as play eludes definition, it is immediately recognizable as real says, Huizinga, in comparison to other conceptual entities like justice.

It is not usual to think of play as being problematic and yet, Csikszentmihalyi has observed creative individuals all the way from painters and sculptors to surgeons and rock climbers enthralled with just that. The challenge, be it recreational or vocational, is pursued principally because it is enjoyable. In each case, the objective is newly envisioned and the problem sought afresh.

The topic of models is particularly interesting in the study of perception. That we construct for ourselves models of how the world works is surely no mistake in the grand scheme of things. If everything were always new again, it would be difficult to develop an advanced understanding of just about anything. In evolutionary terms, our survival has depended on it. It would not be much good to ponder what else a predator ‘might be’ if escaping as quickly as possible was called for in order to be philosophical again some other day.

- The role of perception
  - Ambiguity
  - Modality
  - Context
- Counter-intuitive observations on inhibition and the empowerment of vulnerability

The broad scope of inhibition

The freedom to be creative is not necessarily freedom from rules. Rules are often conducive to excellent design, as explored in the

41 Csikszentmihalyi, 1975, 1976