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All Work & No Play

A Capstone Project Submitted in Partial Fulfillment of the Requirements of the Renée Crown University Honors Program at Syracuse University

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Honors Capstone Project in Industrial & Interaction Design

Capstone Project Advisor: Denise Heckman, Associate Professor

Capstone Project Reader: Jonathan Mills, Assistant Professor

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This project follows the format of an undergraduate thesis typical to the Syracuse University Industrial and Interaction Design program. It was conducted over two semesters, one focusing on research, and the other on the execution of an idea from the data gained during this research.

The project in its entirety has been entitled “All Work & No Play” in order to illustrate the current state that exists in many offices and professional settings: that play and toys are both looked down upon and discouraged. In order to address this situation, the project birthed a solution called Puck.

Puck is a desk unit that can be installed in any business or office space, creating an open plan that allows employees to share space and work more collaboratively, rather than existing in the isolation that is common to cubicle farms and small offices with tall partition walls. Puck creates various changes in the expected interactions with a desk, including novel ways of opening drawers, storing things, and organizing one’s possessions. Much of this is accomplished through a system of interchangeable circles located at the back top of the desk, which provide options for customization and play to the workers who may use the desk.

All Work & No Play was researched using various techniques, all of which were designed to give the designer a better understanding of both the people and environment that he would be designing for. These included studying primary and secondary sources, interviewing myriad office workers, and prototyping various mockups of what a desk could look like. These research methods gave insight to the needs and wants of consumers, both those who would be interacting directly with the desk and those who would be indirectly affected by or benefit from its presence, which were then used to create requirements that a final design had to fulfill.

This project is significant primarily for its unique approach to creating office furniture; rather than look at this task simply as a challenge of efficiency and physical comfort, the needs of a human that might be termed ergonomics, the project included the necessary but often forgotten area of mental or even spiritual comfort, addressing a need felt by many in the working environment.

All Work & No Play, as well as its offspring, Puck, are also significant in their enabling of office workers, as the focus of the project was to create a better workplace for them. Through Puck’s spontaneous changeability and easy customization, power is put more firmly in the hands of office workers to create their own space and affect the environment around them.

Finally, this compilation is significant in that it represents the assembly of various sources of information confirming, in multiple aspects, the idea that play is an appropriate and even necessary part of adulthood, and crafts a response to this deep-seated need.
ALL WORK & NO PLAY

a Renee Crown Honors College Capstone Project
fulfilling the requirements for the undergraduate thesis
in Industrial and Interaction Design
by Zachary Port
I have noticed more and more within myself a reticence to grow up. Paying bills, keeping up with classes, other responsibilities; these I could manage, and at many times even enjoyed; but losing innocence, and losing the wonder and imagination that were inherent to my childhood seemed almost inevitable in the face of fully becoming an adult.

Thus I began the fight to reconcile the world of being an adult with that of a child.

This battle has raged for quite some time, and though I have learned many things about growing up (including that it isn’t as devoid of wonder as I may have imagined), it still resonates deeply within me. As such, it has come up tangentially in my projects, my writing, and my conversations with some frequency. However, when faced with the vast, open plain that is the fifth and thesis year of Syracuse University’s IID program, addressing this divide didn’t actually occur to me until I was drowning in other ideas. I had dismissed it as a personal issue, one that couldn’t really fit into the same world as design. And then I remembered something about Google.

By now, Google’s integration of play into their workplace is all-too-commonly known, their unique method of work lauded and occasionally emulated by multiple media and businesses. It has in some ways become a cliché, an unattainable imagining for smaller businesses that is dismissed as unprofessional or too large-scale for their own purposes.

But from when I first heard about it I was enchanted.

An entire office building transformed into a giant playground where the goal is not simply playing and running and being with friends, but rather doing (similar) things while doing real work - this sounds like something from the works of Roald Dahl. And yet despite this fictitious connotation, Google remains, as ever, one of the most successful and prolific companies in the world.

And so I realized that I wasn’t the only one fighting to remember and keep parts of their childhood alive. And as a result, at the confluence of two very distinct stages of life, I began my thesis research.
ACKNOWLEDGEMENTS

It is important to note the contributions of individuals without whom this project would not be possible. I am incredibly grateful to my Capstone Reader, Jonathan Mills, and Advisor, Denise Heckman, both of whom were professors teaching the classes that this thesis fulfilled and offered excellent insight throughout the process. External advisors of note were Ben Watson from Herman Miller, Jude Lewis of the Sculpture Department in VPA, and Patty Johnson from the Design Department in VPA. All offered timely and helpful advice that was instrumental in helping me to find a path when I was confused or not sure what to do next. Gratitude is not a strong enough word for my thoughts and emotions for the significant and shaping roles each of these individuals played in both this project and my time at Syracuse.

Additionally, I would like to thank the Renee Crown Honors College for making this possible, but also for providing funding through a Crown Wise Grant for many elements of this project, including research prototypes and a physical model of the final design, which can be seen at the Warehouse in the I&D Thesis Exhibition from April 25 to 26, 2015.
Jack Dursley, age 29, of medium build and average height, is one of the many office workers who occupies a cubicle in the sprawling headquarters of Apogee Systems, Incorporated, a multinational business of gargantuan proportions. Jack’s eight foot by eight foot office box is plastered with images and posters that make it his own—a Chicago White Sox pennant, a picture of him, his wife, and his dog. Post-its with quick messages scrawled across them from his colleagues. His desk is cluttered with papers and old coffee cups, a testimony to both his organizational prowess (or lack thereof) and his desperate need for caffeine.

At this very moment, Jack is not in his cubicle. Nor can he be found in a meeting, or riding the elevators, or in the cafeteria, as he ate his lunch of an egg salad sandwich with chips and an apple two hours ago. Neither is he in the bathroom or at the copy machines.
Jack is at the water cooler – and has been for the past half an hour with four of his coworkers. The water cooler, the oh-so-elegant contemporary version of the Impressionists’ French cafes, is a central hub for relief from boredom and affirmation of procrastination. Jack and his coworkers are currently applying their intellects to the task of keeping a crumpled piece of paper in the air using only their hands, keeping half an eye open in case anyone from management walks by.

Jack is very bored with his work.

More than likely, this has something to do with the type of work Jack has been assigned. But just as likely, Jack’s environment has contributed a significant amount to this failure.

The furniture that surrounds us, that was at some point designed and shaped by some of us, shapes our attitudes and outlook right back. The environment you work in is just as important and as powerful as what you do, and while the fictional Apogee Systems has as yet to pick up on this, many businesses have come to realize it and make changes accordingly. Google is renowned for its playful offices, companies now use Legos to build teamwork and creativity in their workforces, and Lego itself just added a brand new slide to their research and innovation center in Denmark. Companies are embracing the ideas that work need not be confined to a cubicle and that play is, in fact, a valuable part of adulthood as well as childhood.

My research here aims to push this realization forward by taking the innovative steps that companies have instituted in this area and reinvesting them on a smaller scale: in the very office furniture that professionals use every day. By changing the furniture itself, the attitude of integrated play and work becomes a significantly more attainable goal for a much broader spectrum of workers. For many companies, a complete overhaul of their workspace is out of their budget, but for a lot of these companies, a new desk for an employee is a realistic advance.

Simply put, I’m designing toys for adults that are disguised as the things they use every day.
GENERATING UNDERSTANDING

Understanding the environment around you is essential to design. As industrial designers, we employ a variety of techniques to understand the users in the areas we’re designing within. These include stakeholder maps, interviewing and observing the users of our products, and creating storyboards and personas from the compiled data.

From these techniques, I gained a better understanding of the people I was designing for, their space and the way they use it, and the tools that exist in this space.
The majority of my stakeholders are clustered within a specific business setting, whether they are within the office or peripherally attached (such as clients or investors). The users are primarily office workers and secondarily their managers, as they will be in the same space and interact with the same furniture.

Other stakeholders of note include interior designers and contract furniture manufacturers, both of whom would have influence in manufacturing and distribution of furniture.

This exercise helped me to see the whole picture of the people that my design would be encountered by or influence, even in indirect ways.
3.1 work vs. play
The Western world tends to have a very clear, sometimes harmful distinction between what is work and what is play.

3.2 interaction
Interactions are an essential part of work, both for accomplishing tasks and taking breaks from these tasks. People make an office workable.

3.3 boredom
Boredom and disengagement are significant contributors to employee dissatisfaction. Up to 70% of workers experience some level.

3.4 spontaneity
Desks are frequently used as impromptu meeting places, but lack the flexibility for proper seating or sharing space.

3.5 assembly
Most contract desks require assembly from a professional. I want people to be able to assemble and maintain their own desks.

3.6 professionalism
Professionalism has long been the standard of the workplace, but this is changing, and furniture could reflect that with a bit more irreverence.

3.7 integration
Play, an essential part of every person’s life, is often discarded at work, but should be fully integrated in this new approach.

HUMAN FACTORS

Every human interaction, whether between that human and an object, an environment, nature, or another human, can be broken down into 5 basic human factors. These are cultural, physical, cognitive, emotional, and social cues that subtly affect the way we live and act. By examining these interactions and factors in close detail, many important contextual clues can be gathered.

I studied general employees’ work schedules and spaces and the attitudes that are pervasive within those. The five human factors to the left look in particular at person to person and person to object relationships.

Taking a magnifying glass to the person-to-object relationships, I chose to look at desks, as employees spend most of their day behind them and they become, in many ways, an expression of a person’s identity.

After starting with what this relationship currently looks like, I moved on to what I wanted a new solution to change in that system. The results can be seen on the left, but the main ideas that I gleaned from this research were that the attitude of professionalism often did not allow for playfulness in workplaces, and that spontaneity in the way things are used was an important but often missing piece of office environments.
TIME/TASK BREAKDOWN

An exercise to understand what actually happens in a typical workday. From averages provided by Harris Poll for AtTask, it became obvious that almost all of a normal work day is spent behind a computer. This was supported by findings from workers in various positions, all of whom said most of their time was spent at a computer or in meetings.

The graphic on the previous page is a compilation of some of the interviews I did, as well as the national average as presented by Harris Poll. This reveals the vast amount of time that people spend behind a desk (particularly looking at a computer), showing its ideal positioning for affecting attitude and productivity.
In order to better design for workers and their needs (and the needs of their managers and clients) I created three personas based on data gathered from real workers and managers, as well as national averages. Personas are collections of data points gathered from actual users compiled into a fictional personality in order to keep designers on track with their designs. I used these personas throughout my context and creation processes, asking whether or not my designs and ideas were addressing users' actual needs and desires.

The personas can be seen on the following pages.
Gabriel Parker
Office Manager, Axiom Systems

Axiom Systems is a multinational company that specializes in providing custodial and sanitizing services to hospitals and other medical facilities. Gabe runs the Savannah office, and is in charge of a group of 10 office workers, each of whom have distinct roles and oversee multiple technicians.

Gabe started at Axiom 10 years ago in one of these overseer roles, and worked his way to office manager over the course of 3 years. Since then, he has instituted some small changes in his office layout, trying to make the office a more exciting place to work. He wants his employees to feel comfortable in their space.

Gabe’s employees enjoy his management style, which is decisive but decently remote, allowing each worker some autonomy. Since some days involve site visits at hospitals or other practices, his employees have a fair amount of flexibility in where they work from, be it home or on the go, as long as their tasks get done.

Meetings at Gabe’s office, however, are mandatory, and this is sometimes a sore spot in office attitude. The meetings can drag on, despite Gabe’s best intentions, both due to pressure from Gabe’s boss to discuss policy and Gabe’s admitted loquaciousness. These happen in large groups and one-on-one between Gabe and his workers.

Gabe is proud of where he has worked his way to and hopes to continue to ascend corporately, whether with Axiom or at another company. In order to do this, he prioritizes the efficiency of his office, but does try to make sure that his employees are happy in the process, knowing their satisfaction contributes to their efficiency.
Mid-Level Engineer, Klein Motor Co.

Klein Motor Company is a manufacturer of gas- and electric-powered power tools and lawnmowers. Their products can be found in hardware stores across America, and are of a comparable quality to Porter Cable or Ryobi. Their engineering department, located in New Jersey, is responsible for the design and manufacturing specification of the motors for their products, and the specifications of the housings for these products, the design of which are provided by their small in-house design team.

Krista, an electrical engineer, has worked for Klein for 2 years. After college, she was briefly employed at a small engineering consultancy that mostly did work on housing and corporate spaces. When Klein offered her a job, she quickly accepted, hoping to get into more exciting work.

Krista is one of two electrical engineers on the “Batteries & Charging” team, which also includes a mechanical engineer and a supervisor. They meet multiple times during the week to update each other on progress on simultaneous projects and brainstorm. Their assignments come through their supervisor, but are created by his managers.

The Jersey office of Klein is mainly comprised of standing height cubicles, including Krista’s personal space. There is a small kitchen and eating area, but any other free space has been given over to a small prototyping shop and a conference room.

Krista enjoys her team and finds most meetings with them fun and productive. When the whole office has to meet, however, she finds herself easily bored and distracted. Additionally, the momentum that she feels when in small meetings with her team disappears quickly when she returns to her cubicle.

Daily Routine:

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Krista Peters
David Butala
Junior Accountant, Bosk & Bard LLC

Bosk & Bard is an accounting firm in New York City. Most of their staff is assigned to clients, who require various financial and analytical services. These clients will typically work with one or two accountants, but teams may be created and assigned to larger clients.

David is a junior accountant, having worked at Bosk & Bard for the past year and a half since graduating college. His boss, Carl, thinks he has great potential, and rather than placing him in a team under a senior accountant, has partnered him with a senior accountant to learn in a much more intensive role.

David and his senior partner, Kevin, handle accounts for multiple clients, and are also responsible for communications with these clients. As such, David’s daily responsibilities include a significant amount of emailing back and forth, and since he is the younger counterpart of the team, he is given most of the menial tasks like making photocopies.

Weekly meetings are one of the things that David enjoys least about Bosk & Bard. At these meetings each team reports in on all of their clients, a process that can take upwards of two hours. He (and most of the employees) feel that these meetings are a waste of time. The information is usually repeated to Carl in weekly email updates, but the redundancy is designed on some level to keep workers connected to each other.

David thinks Kevin is intelligent but also suffers from a suffocating sense of pride. He has thought of multiple ways to prank Kevin, but has (barely) restrained himself at the potentially employment-threatening repercussions.

Although he enjoys working at Bosk & Bard, he occasionally finds himself wishing it were slightly more relaxed around the office.
Storyboards are a very important tool for designers, as they allow us to follow individuals through their days or through specific interactions, exploring points where they may feel frustrated, incapable, distressed, or otherwise unhappy. This process allowed me to look at the disruption of meetings and why this happens, as well as what a boredom-prone individual might experience in their workplace (more information on boredom proneness can be found in the Supplemental Research section of this document).
I began to benchmark by looking at objects that had a similar playful function to what I wanted my desk to achieve. Some of these can be found on the left page, and include an aesthetic palate that I drew from for my final design. Many, like the “balloon lamp”, take normal interactions and change the expected operations into something new that makes the user reconsider what they’re doing.

After that, I began to examine in greater depth the attributes of highly functional workplaces and the tools within them. This included the tasks performed in an office and specifically daily at a desk, but also examining the current standards of furniture excellence. Pictured here are some of the most successful desk solutions from leading furniture manufacturers.
DEVELOPMENT PROCESS

The creation process is a fluid one, and often transitions between various techniques, whether those are sketching, prototyping, or other forms of brainstorming and form exploration. Additionally, certain stages in prototyping may reveal areas that need more research, and the context phase may be revisited as well.

During this process, I sketched many ideas, prototyped solutions and experiments, and ultimately narrowed my idea to a final design.
Construction
ease of assembly; wouldn’t have to be assembled by a professional; sturdy construction but easy to take apart and/or relocate

Repair and Maintenance
individual parts are easily replaced; consideration is given to how broken elements can be swapped out

Ability to Customize
allows individual parts to be swapped out; encourages additions of further building on system

Attitude
adds slight sense of irreverence and playfulness to office, making things less serious; facilitates employees building better relationships and better attitudes

Productivity
allows and enables in-work or meditative fidgeting; enhances normal tasks with playful steps in processes;

Storage
sets aside storage in multiple capacities to accommodate papers, accessories, writing tools; considers purses and bags

Ergonomics
uses standard height and width top for office space; flexibility in exploring whether rectangular form is still best; engages feet with bar or footrest

Boredom Mitigation
includes cause-and-effect fidgeting; rebuildable elements

Aesthetic Appeal
accented with stimulating color; projects intriguing character;

Computer Considerations
routes power through table somewhere; gives space for laptop; gives space for mounting arms for monitors

Environmental Awareness
avoids laminates or formaldehyde-laden composites; recyclable pieces; uses environmentally friendly paints

From the exploration in the Context phase, I crafted a set of requirements that addressed both workers’ and managers’ needs. These requirements can be seen on the left, and are based directly off of observations from my research. From these requirements, I wrote a brief, or a statement of intent for my design, which can be found below.

Create a desk for open plan office environments that playfully changes the interactions common to personal work spaces and daily tasks.

Consider the independent (but connected) needs of the users and their managers through a uniform body with interchangeable parts.
The gestural sketches on the left are various form exploration studies, diving into ideas as broad as a room made entirely of shifting tiles and as specific as modifying standing desks to have a unique and playful method of movement. As these ideas were developed through this process and sorted, my sketches became more refined and began to explore different versions of the same idea, reflecting the narrowing of many rough ideas down to a refined one.

This phase helped me quickly sift through a large volume of ideas at its outset, and helped me to again quickly and efficiently explore minute variations within a single overarching theme, and as such was integral in reaching my final solution.
In order to test people’s reactions to play in unexpected places, I created small wooden block toys. I then took them to coffee shops - where many people now work from - and observed how people reacted to them in groups and alone.

Without fail, every group picked up the blocks and started playing with them, often trading the blocks between people in the group. Additionally, people actually gravitated towards tables where the blocks were sitting when there were open tables around them, showing their inherent draw simply through unique forms.

After observing the groups play with the blocks, I asked them a series of questions, asking about the (perceived) purpose of the blocks, how people felt about them, and whether or not they felt like the blocks had enhanced their time. Most people accurately indicated that the blocks were just playthings and that they enjoyed manipulating them. A significant portion of the users also said that they felt the blocks were stimulating, and invited questions and thoughts.

SLIDE DRAWER

This cardboard mockup represented a feature that, in the final design, is made of wood and fabric. The wood is represented by the cardboard panels and fabric is represented with paper. The fabric loop or tab is meant to be pulled to open the slide, which can be scaled up to span an entire desk.

A stationary dowel at the left, partnered with a pair of dowels guiding the slide, serves to keep the slide in its channel.

Through these explorations, I gained a better understanding of how people interact with each other through objects and fidget, and how to manipulate a solid construction material in a novel way.
After my first phase of prototyping, I continued to refine my idea. At this point, I decided to start making half scale models. This allowed me to quickly iterate small changes in a broader idea.

I experimented with drawer placement, leg construction, overall dimensions of the desk, and other factors based on general human measurements.

Most desks are between 29" and 31" tall, and given the nature of the drawers, I decided that my desk would be at the outer extremity of this range in order to accommodate the greatest amount of people.

From this prototyping, I also realized the way I intended to arrange the drawers would result in drawers opening directly into the worker’s stomach, which would obviously be uncomfortable. By simply flipping the sides that each drawer occupied, I avoided hitting the user at all, but I would not have realized this problem without a physical prototype.
Much like the previous iterations of storyboards, this exercise was meant to better understand (and convey) how workers would interact with and benefit from my final solution.

Concepts I explored here were innovative storage solutions that made people think more about how they were interacting with the desk, providing areas on the desk for them to fidget with in order to either refocus, improve their mood, or just fidget with, and how the desk could potentially affect the mood of the worker using it.
After finalizing a concept, it is instrumental to craft a final version (final, that is, in the sense that it is presentable as a complete body of idea and research, not to be confused with being perfect or necessarily even done). This allows not only the communication of your ideas to others, but also the feedback of others, both those who are designers and those who are not (and may indeed be using your product).

My final design illustrates the concepts explored and developed through my Creation phase, while also addressing the requirements developed from the Context exploration. The following images are computer generated models of the final design, a physical version of which can be viewed at the Industrial and Interaction Design Thesis Show at the Warehouse on April 25th and 26th.
Puck is a desking solution for open plan offices, designed to create a different attitude in the workplace that embraces playfulness without distraction. Its unique approach to storage and organization allows for user customization and expression in professional and corporate settings.

Puck takes the interactions that are easy to forget and replaces their monotony with surprise. Drawers open in unique ways, storage means different things, and cable management is even made easier and more enjoyable.

Puck is designed to be ordered in office-filling quantities. In typical situations, employees would have little say over how their new furniture would perform and look. With Puck, however, workers can customize their desk through a series of interchangeable pucks (part of the reasoning for the name), some examples of which can be seen on the bottom of the left page.

Puck offers sales not only to office suppliers and contractors, but also to the office workers themselves, a market generally untapped by furniture manufacturers. Simply by going to the company’s website, workers could order themselves a desktop clock, a pencil holder, Bluetooth speakers, or even a planter.

Not everyone wants to customize or play with things in the office. Puck accommodates for this, and comes with three basic pucks (power, light, and store) to cover the bases without overdoing things.
As addressed in earlier sections, in order for the desk to meet common standards for the ergonomics, or human measurements, of office furniture, it had to be raised to the extreme end of normal heights. At 31" tall, the desk is taller than many, but will still feel natural to most workers. The work surface is 30" by 60", giving a wide and shallow enough platform that one’s arm can naturally reach to each edge.

More specifications can be seen to the left.
BENEFITS

FLAT PACK
Puck is flat packable, allowing it to be shipped efficiently and maintain cost effectiveness. This also means that companies can buy multiple Pucks and install them themselves, with minimal effort.

OPEN OFFICE
Puck is easily arranged in many different formations, and as such can be used to accommodate groups or teams of workers of any size from 2 up. While a set of pucks can be purchased that create small dividers between desks, the desks are meant to be open to each other, allowing natural conversation and interaction between workers.

PUCKS
Pucks allow office workers to interact directly with furniture manufacturers, a proposition that is fairly rare in the current market space. Workers could buy these objects, whether they would be desk clocks, Bluetooth speakers, lamps, cable managers, or even plants, directly from the manufacturer online, providing a new and renewing revenue stream for these companies, while allowing workers to customize and even build their own environments.
SUPPLEMENTAL RESEARCH

FALL SEMESTER

This section represents the first semester’s work from my Capstone project, research from primary and secondary sources on various topics that address my chosen field of study. It includes case studies of various businesses that employ similar techniques to those that I researched, and also experiments I conducted using money from a Crown Wise Scholarship I received, which were instrumental to both my understanding of play as it relates to objects and to my final design.
By introducing play into physical workspaces, offices can encourage creativity & collaboration, increase efficiency by mitigating boredom, and foster higher levels of job satisfaction within their workforce.
In this book, you can find case studies at the end of each chapter. These highlight different locations or businesses that have embraced ideas surrounding play in the workplace. Provided with each is an analysis of how they have incorporated play into their workspaces or objects, as well as some nifty image of said things. If you really wanted to, each page is handily marked where you could bookmark it (cue collective gasps from any librarians reading this). But if that’s your thing you go right ahead and do it.
Work, a verb, has many connotations. It can mean, as stated above, what you do, it can mean to strive for something, but always it has a purpose or end result. For different people, that end result is very different, ranging from giving meaning in life to simply making money.

I’ve been brought up on the idea that you should do what you love, and so perhaps that’s swayed my thought process a bit, but it seems to me that any time someone does a job just for money they end up unhappy on some level. This dissatisfaction should culminate in a new career, but too often it doesn’t, and people work through with what they have.

This train of thought lead me to my hypothesis, and to the main question that I am hoping to answer: Can furniture, through play, bring out the elements of work that are meaningful and give purpose, even if the work being done is not the most exciting?
The Prosperity Engine, according to Herman Miller. From their website, the new model of business is based on shared profits and pleasure.

WHAT IS SUCCESS?

Success can be defined in a myriad of ways. For some it’s making money, for others it’s doing what they love and care about. For others it has nothing to do with work at all, and instead focuses on their family or their pet chihuahua. No matter the definition, success is an important part of finding meaning in one’s life.

For the purposes of this investigation, I’ve treated success not as checking off a list of boxes but as finding fulfillment in work. This retains elements of the model on the left, including the ideas of profit and pleasure, but ultimately leaves those values to the user to decide.
Boredom Proneness is a personality trait that can be found in many people in today’s culture. In their article “Boredom in the lecture theatre”, Sandy Mann and Andrew Robinson examined British university students in order to understand how and why people get bored. They discuss in depth the personality trait of boredom proneness (being more inclined to be bored easily) and how it affected the students in their study - nearly 85% of students displayed medium to high levels (Mann & Robinson, 2009).

They also discuss the fact that the most defining factor of boredom was found not to be boredom proneness, or even the material being presented, but the format of what was being presented. A good format alleviated boredom; a bad one encouraged it and the resulting behaviors (Mann & Robinson, 2009).

Although this was in a university setting, the ideas put forth both of boredom proneness and the importance of format are significant and can be translated into office culture, showing parallels not only in meetings and presentations but also in daily desk work.
CONSUMERISM & ARRHYTHMIA

Arhythmia is a weird word, and not one that is tossed around very often. Professors Dennis Brissett and Robert Snow define arrhythmia as “sameness [that] blurs or destroys it [contrasting elements]” in their article “Boredom: Where the Future Isn’t.” This is the sameness that results from the speed of the Information Age, the “scripted and vicarious” plot that we, as industrialized beings, are encouraged to live (Brissett & Snow, 1993). Brissett and Snow put forward the idea that we have lost the inflections that make culture worth being a part of, and that we as a culture find ourselves bored because of this lack of interesting variety. With nothing to join ourselves to, they say, we form groups out of sameness and turn to consumerism, which then results in more boredom as we feel we have no control or expression (Brissett & Snow, 1993).

This certainly applies to the workplace, both in the sense of a managerial standpoint and from that of a worker. Workers want exciting things to do; bosses want good work from their subordinates. In order to produce this, bosses should cultivate variety in the things they do and the people they bring on.

In a practical sense, furniture can reflect this by allowing for the changing individual expression of each worker. This already happens in small ways, as workers decorate their desks with pictures of their loved ones or small trinkets, but if this can be scaled up, it produces an office that is truly diverse and unique.
Google's newly created office in New York City is a masterful example of a playful workspace. The building occupies multiple stories across multiple city blocks, and offers a somewhat mazelike network of workspaces, offices, and cafes.

Lining the halls are old arcade games, plugged in and working. It’s not uncommon to find almost-hidden rooms made for small groups to work in, discovered only by the curious.

Dogs are welcome in this space, people arrive at meetings on scooters, and employees can build their own desks using what are essentially modified TinkerToys.

Many areas of the Google headquarters have been revamped into play areas, like this hallway full of Pac-Man arcade games.

Employees have the option to build their own desk, as this person has, making sure they have room for important tools.

Games and collaborative spaces are integrated into cafes, scattered throughout the building.

With the scale and environment of the building, it’s not uncommon to find people navigating the halls with scooters or their dogs.
The workplace is one of the most shaping environments in adult life. A significant portion of our time is spent there, and, particularly in America, it comes with a host of attitudes and assumptions that may or may not be correct and beneficial. These attitudes include those of professionalism, a word that changes definition from one office to the next, and success, which varies just as much. These values, no matter how they are defined, are embodied in the spaces we create for ourselves, and shape our mindsets in return.
The Action Office

People couldn’t grasp that Action Office was waiting to be created; they just looked at it as furniture already built.

MARThA WHITAKER, interior designer under ROBERT PROpST

The Action Office was one of Herman Miller’s biggest innovations. A system of interlocking parts, Action Office could be configured to fit virtually any office space. Although nothing like it existed at the time of its release, it is now all too common. Action Office was the father of the modern cubicle. Practically every Dilbert panel ever drawn features these wonders of subjugation and individuality reduction. Despite Robert Propst’s (the mind behind Action Office) best intentions, Action Office fell into popularity with those who used it to create pens for their employees, and out of it with his users.

Despite this, the ideas behind it are strong, and are worth employing in future designs:

1. Forgiving Principle: users must be allowed to change their minds without it costing them large amounts of time or energy
2. Grace with Change: change is a given, and must be treated so; designs should adapt to this, not break under it
3. On-line Planning and Expression: users should have the ability to affect and shape their environment

(Propst, 2006)

Propst wrote a book about Action Office, calling it The Office: A Facility Based on Change detailing his thoughts on the system and its potential. Most importantly, however, he conveyed the fact that offices were meant to change, an idea essential to designing anything for an office space.
An infographic showing different states of mind according to skill and challenge level. As one advances to higher degrees of required skill, one can escape things like boredom and worry and move on to better things like relaxation, control, and even arousal, culminating in Flow.
FLOW

[Flow is] being completely involved in an activity for its own sake. The ego falls away. Time flies. Every action, movement, and thought follows inevitably from the previous one, like playing jazz. Your whole being is involved, and you’re using your skills to the utmost.

Mihaly Csikszentmihalyi
Projections on the shared and owned spaces in an office over the next 20 years, based on information from the fuseproject website fuseproject.com
Lego’s development headquarters in Billund, Denmark are a prime example of a playful workspace. The whole environment is filled with bright colors and open space, allowing free movement and imagination. Plenty of natural light fills the room; the space is broken mostly by furniture, bookshelves, or display spaces, but rarely walls (except around presentation rooms).

Coming out of one of said presentation rooms is a giant stainless steel slide, making for an easy exit. Tall plants fill the room and provide an organic counterpoint to many of the geometric forms that also inhabit the space.

Most of the space in the office is dedicated to collaboration, and the center of the office reflects this, with long tables with multiple chairs, an open plan, and plenty of display space. Working together seems to be the part of work that claims the most time, and here space is deliberately separated out for that very purpose.

In this physical design, children’s fantasy world becomes a part of everyday perception and defines a setting for creating new designs for games and play.

ROSAN BOSCH, architect of LEGO PMD

INSIGHTS

- MOVEMENT: to change the environment and navigate it
- BUILDING: It’s Lego, obviously it happens.
- GAMES: are interspersed in break, collaborative, and transitional areas
- FURNISHINGS: are built for collaboration
- COLLABORATION: is encouraged through dedicated and interesting spaces
- COLOR: is used as an accent and as a way to signal the play in each piece
Most adults experience some kind of play in their adult lives. However, it is fairly uncommon for this to take form outside of sports, playing with kids or pets, going to the gym, or being bored at work. While these expressions are certainly not bad ones, they often lack the imagination and wonder that occurs in children’s play.

Play is an essential part of growing up, but it has a place in adulthood that is often overlooked. Play can be an instrumental part of work, finding its place in the form of how we do things.

Change is inevitable in the workplace; Robert Propst designed a whole system of furniture to accommodate for that fact. Nothing teaches humans how to respond to change, or conditions them to adapt well to it, like play.
Scott Eberle, in his article “The Elements of Play”, puts forth 6 distinct elements of play: Anticipation, Surprise, Pleasure, Understanding, Strength, and Poise. He discusses how children learn these elements and then apply what they gathered in other areas of their lives. He also acknowledges the difficulty in defining play, as it is ambiguous, dynamic, and nebulous, and cautions against taking the elements he proposes too literally, saying, “we should read the elements as conveniences, as manners of speaking, and above all, as moving images more akin to concepts in aesthetics and philosophy (Eberle, 2008).”

Eberle’s elements, if separated from his topic of play, would not find themselves out of place in a work environment. Each is something that workers need to have and need to be able to respond to in turn. In this sense, however, I found one thing lacking and have (humbly) added it to his original 6 themes. This is the element of adaptability, in response to Propst’s earlier charge that the office is based on change. A worker must know this, and be able to respond in kind.
Neoteny is a biological form of age regression where older members of a species carry traits of younger ones longer into maturity. While this does occur in nature, in no other species does it happen so much as humans. The concept of the man-child, an adult who hasn’t really outgrown his childish tendencies or desires, has become commonplace.

In some ways, like above, neoteny can be a bad thing, where maturity is sacrificed for the preservation of childish pleasures. Unlike most of nature, however, we can choose which traits to accept and carry on, and some, like the playfulness or imagination of childhood, would seem to be worth doing so.
The website officeplayground.com, showing some of the “office toys” currently available to adults. Most shown here are stress relievers or kitschy knick-knacks.

Thinkgeek.com, displaying some of the prank-based toys that are sold for adults, including USB-controlled foam dart cannons. Pranking and teasing are common forms of play that occur in the office.

Gadgetsandgear.com, again showing some of the USB toys available, most of which are in some way spy related. Pretend play makes an appearance through these toys, and encourages imagination. However, many of these toys would be seen as a distraction to work.

Perpetualkid.com, a website where even the name shows the connotation that play is only for children, and that the retention of play urges is a sign of immaturity. These toys focus on taking many normal office tools like erasers and pens and adding enjoyable devices to them, such as interesting smells or animal shapes.
WHY ADULTS DON’T PLAY

Play is often seen as unserious and impractical - adults are fine with their children doing it, but for them to do so would be a waste of time. If play does happen in adults, it is often relegated to the world of neoteny, of man-children and Peter Pan syndrome. Unfortunately, much of today’s industry only accents this fact; as shown on the pages before this, most of the products that exist as toys for adults are cheap, overly bright, plastic things that serve no purpose other than to distract the user for a brief second.

As such, most adults’ negative view of grown-up play is only further supported. Unfortunately, they forget the adaptability and spontaneity that play teaches. Spy camera pens and desktop drumkits are fine, but fail to accomplish the true potential of play in the workplace.
Dr. Stuart Brown, play advocate and founder of the National Institute for Play, presents this idea and others at a TED talk in Sydney, Australia.

THE OPPOSITE OF PLAY ISN'T WORK, IT'S DEPRESSION.

BRIAN SUTTON-SMITH
This map shows the correlation between the spectrums of Play to Depression and Work to Boredom. By integrating the two, a stronger result is produced on each end of the spectrum.

SKEPTICS & ADVOCATES

Play in the lives of adults is a fairly controversial subject. There are play advocates, like Stuart Brown, the founder of the National Institute for Play, and there are play skeptics, who refute the ideas of such advocates as tainted by their nostalgia and desire for play to be of merit.

While this debate rages on, and the scientific benefit of play remains shrouded in some mystery, the fact remains that many adults do enjoy playing when they are encouraged and freed to do so. Play still has value, even if it is not a scientifically measurable one.
Play has crept back into adults’ lives in sneaky ways. Adult playgrounds, such as this one, are becoming more and more common. Little more than an outside gym, this park does nevertheless allow users to experience fresh air while exercising on machines, something very uncommon before. These are also being installed in cities near where people work, affording them the opportunity to exercise without having to leave a close radius of their workplace.

I want to try to avoid using exercise equipment in my final design because, despite its sudden popularity, I don’t feel that it really fills the gap of play in adults’ lives, but very temporarily relieves that need.
Duffy London is a furniture company out of London, owned and operated by Christopher Duffy, a product design graduate from the University of Brighton. Their work is playful, imaginative, and frequently turns convention on its head.

While Duffy celebrates the unusual and unexpected, they do not forego ergonomics, carefully considering how each piece will be used and how it can best serve its user.

I hope to create designs that will offer similar playful attitudes and encourage workers to think, rather than just accept their workdays and environments, but also provide them the necessary ergonomic comfort and support to do the work they need to. I see in Duffy a near-perfect merging of the two areas of artistic expression of playfulness and the measured and precise manifestation of ergonomics.

Duffy London is not afraid of pushing the boundaries between childhood fantasy and contemporary living: the beautiful and impossible is cleverly merged with necessity.

MADELAINE HANSON for roomsmagazine.com

Much of Duffy’s work references some element of nature or common knowledge; little is without reference.

Duffy’s furniture borders on Surrealism, taking normal furnishings and adding strange twists.

Many of their pieces mimic realistic objects but completely alter their purpose.

The unexpected is what makes Duffy’s furniture delightful. They also manage to incorporate this in a way that doesn’t turn every piece they produce into installation art.

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In order to test people’s reactions to play in a work environment, I looked at the different ways that people regularly play during their days. While these are certainly not the only ways, play generally takes form in a few broad categories:

**Movement**
- People will generally use movement as a respite to long periods of sitting. However, it has also been shown to improve concentration while working.

**Fidgeting**
- Fidgeting releases excess energy and can be an outlet for stress, frustration, or restlessness. It also helps some people concentrate.

**Building**
- Customization and personalization are important aspects of making any office space workable. Usually, this only extends as far as the decor on a desk or in an office.

**Games**
- Games typically find their place only as a break from work. They are usually seen as unprofessional and distracting from what people should be doing.

In order to test these four different elements, I felt that I needed to make actual furniture for people to use while working. With the help of the Regina Crown Honors College and a Crown/Wise scholarship of $2500, I was able to purchase materials to build these furnishings, as well as three GoPro HD cameras, which can be used to make time lapse videos.

These will be incredibly helpful and powerful tools, as I can set them up to record users in an extended period of time to see how they use the objects. The small size of a GoPro camera is also useful for the simple fact that it is easy to overlook, and will therefore be more conducive to an organic experience for those using the furnishings.

It’s important to note that I don’t expect any of these prototypes to be anything close to a final solution, but rather to learn what does (and more likely) doesn’t work with these pieces. This will not only come from the videos of people’s interactions, but also their own comments, suggestions, and critiques. This feedback will be essential in gathering and creating insights, and these will shape the final form of the office furnishings that I create.

At the end of this process, most of the pieces are of a quality that they could continue to be used, but if need be they can be broken down and the pieces used for other projects.
The Pendulum Chair is a swing. Simple and sweet, its purpose is to give a desk worker an outlet for any restlessness or nervous energy they have through swinging. I was inspired by looking at individuals who sit on inflatable exercise balls instead of chairs; this allows them a unique degree of freedom and mobility that most workers at a desk don’t have.

The swing portion of this chair is shorter than most swings so as to limit how far the worker can move; while mobility is good, if it goes too far it could result in distraction or, even worse, injury.

Swings in playgrounds are generally social gathering spaces, and are one of the few things that hold universal appeal to different age groups. Pendulum has the potential to engage both social and nostalgic emotions.

A swing also offers benefits in that the user controls the amount and variety of their movement, it can offer back support, and it engages the whole body (legs, arms, back, and core) in different ways. These physical benefits match well with the ones mentioned above, and I expect that the two will create a stronger resonance and better experience for any users.

Making the Pendulum was fairly simple: the frame is 2x4s screwed and glued into position and the chair (an Ikea PELLO chair obtained from a local thrift store) is supported by a 38" steel pipe. The bar sits at 6 feet, enough to give those seated some mobility but not so much that they go flying.

Pendulum is still in the process of being built, and requires slight adjustments before it’s ready for rigorous testing. While I have as yet to test the chair in an office setting, I have had multiple people use it in casual settings and recorded their feedback. The most feedback came not from the motion, but the ergonomics of the chair: the 2x4 that was temporarily employed as a seat was viciously denounced, the height of said seat was found to be lacking, and the braided steel cables supporting the chair were said to be too thin and scratchy. The most important insight to this is that before seat height is not yet correct, as mentioned above, and the bindings for the steel support cables need to be replaced, as these tend to slip if anyone sits down too fast. The Ikea chair is reupholstered and it’s interesting to note that its original design was intended to allow movement as well, as the cantilevered wooden support was very springy.

Testing

While I have as yet to test the chair in an office setting, I have had multiple people use it in casual settings and recorded their feedback. The most feedback came not from the motion, but the ergonomics of the chair: the 2x4 that was temporarily employed as a seat was viciously denounced, the height of said seat was found to be lacking, and the braided steel cables supporting the chair were said to be too thin and scratchy. The most important insight to this is that before seat height is not yet correct, as mentioned above, and the bindings for the steel support cables need to be replaced, as these tend to slip if anyone sits down too fast. The Ikea chair is reupholstered and it’s interesting to note that its original design was intended to allow movement as well, as the cantilevered wooden support was very springy.

Further Development

Safety and the “feel” of a piece are probably the things I’ve received the most feedback on without even really testing this chair. I’ve had cautions from one professor that when they attempted something similar the department wasn’t very fond of the idea because of the safety risks; I’ve had other professors express interest in the idea. I have tested the strength of the frame extensively, and it’s held up to everything so far. However, the greatest concerns will be whether people feel comfortable and safe.
Fidgeting is an important part of play. For some people, it burns off stress; for others, it helps them concentrate, and for still others it simply acts as a break from what they are thinking about. The unconscious use of your hands, however, is a powerful device, as shown even from archaic objects like Baoding balls, the small metal balls meant to be rotated around each other in one’s hand. These are meant to aid in meditation, exercise, dexterity, and recovery from injuries. As such, I believe fidgeting has an important role in providing similar things in an office setting.

The so-called Tetra Blocks are simple right triangular prisms bound by painter’s tape into small shapes that can flex and change form into different arrangements. Their size and weight make them ideal for fidgeting with, and I’d made a few out of paper following a video from the website penmerah.com. I realized that they would be much more effective if they were cut from wood and bound with a stronger tape. Out of curiosity, I also bound one with adhesive-backed vellum, which worked almost as well but got large creases in the printed pattern after extended use.

I gained two insights from making them that are noteworthy. The first is that right triangles and reconfigurable objects are perfect for this kind of preoccupied finger musing, and I hope that by creating different starting arrangements of triangular prisms I can make new and more complex shapes. Additionally, I found that the shapes that the toy made in transitional phases – those where it wasn’t actually in a solid state – were the most interesting to me and to other people. This fascination with changing states and hidden and complicated forms seems to be a potential complement to the perpetual change found in offices, and I believe may provide a sense of control and stress relief in those times of change.

I took the Tetra Blocks to a coffee house in Rochester, NY, and gave one to a gentleman who was working on his laptop and left multiple others out on vacant tables for people to pick up as they consumed their tasty beverages. Every person who sat down to one of the tables seemed to feel the need to touch the blocks, and indeed seemed pleasantly surprised that they changed forms.

A full account of the experimentation can be found in the Appendix, but the main insights I gathered were that the Blocks were used most in conversation, as a break to work, or as an unconscious fidget device. They were anonymous enough that people didn’t assume that the tables with the blocks were occupied, but rather headed straight for those. Additionally, they actually inspired conversation between two unique groups as they tried to figure out what the blocks were. A final point worth noting was their value to children; a pair came up to me as I was collecting them and shyly asked if they could see what they were.

The blocks I have made need to be retaped, as they are coming apart, and more could easily be fabricated. These blocks are a strong way to pique people’s interest in my thesis work, and could have good returns if sent out or left at multiple offices.
The Peggy Desk, christened both for its function and as a nod to the Mad Men character of the same name, is an experiment in building. The Action Office, as mentioned earlier in this compilation, was originally meant to be a system that office workers built themselves, transforming it according to their needs and wants, but ended up being used only as a gridded pen system that boxed in creativity. I want to test if workers would respond better to creating their own desktop spaces, specifically their desks. By giving them unique and interlockable pieces, and a baseboard with a grid of holes and corresponding pegs, I hope that they will begin to build things that best suit their needs, but also are flexible enough to adapt to tasks that might change throughout the day.

This desk is, in many ways, a direct response to the findings of Bob Propst, that the office is centered on change, and I think has the strongest chance of all four testing prototypes of having elements carry directly on into the final designs.

One important thing I learned very quickly was that cutting all the holes for the pegs by hand was a bad idea, first in that it took way too long, and second in that it was not accurate enough to allow workers to build their own desktop spaces; with the inaccuracies in the holes, pieces that had more than one peg would fit in some places but not in others, even if they were in the same orientation.

No testing for this desk has occurred yet, as it is not finished. However, it will ideally be placed in an office setting or with the other larger testing prototypes in a space where people can be observed using it.

As such, I realized that the desktop needs to be CNC routed, and am in the process of making a 3D model using Rhino for the machine to use. This will allow greater accuracy, but will also allow me to focus on making the pieces to go on top of the desk with the time that I have.

The idea of a grid-based construction method is a strong one, and can extend far beyond just desk space into creating furniture, rooms, and even systems that use the measurements of this grid to build objects out of other objects. While there is great potential in this idea, it's important to remember that this desk is built for the purpose of understanding how people react to building, and the use of this grid system is not necessarily going to be a part of the final solution.
The Wayfinder Desk is the testing prototype that currently needs the most work. As you can see from the above image, the frame is made for the desk, and the top is glued up and waiting to be transformed into its final, glorious state.

The Wayfinder is a desk that is meant to give workers a brief respite from work through gaming. I wanted to create a desk that would allow this but not offer too much distraction or become boring or cliche after it was completed once. As such, I decided that a maze should be routed into the desk, a steel ball bearing placed in and sealed there with a sheet of plexiglass, and a wand with a neodymium magnet attached to the desk. Workers could then use the wand to navigate the ball through the maze. In order to prevent the maze from becoming boring once it was solved, I considered putting in areas that looped back on themselves, so that even once the maze was solved the worker could still run the ball through these loops in a somewhat cathartic manner, rather like the repetitive motion one employs in using a zen garden.

Play Type:

- Games

Build Status:

25%

Much of the making on this piece is still to be done, and the parts that have been made stand in common with those of the Peggy Desk. I employed my knowledge of jig making to ensure that the desk stands were square and wouldn’t rock when used.

This precision paid off; many people, when showed the frames and tops, said that they thought those desks were actually in use and had been purchased by the University.

In this way, at least, the desks are beginning to be a success, as people trust them enough to believe that they are “real” or manufactured items.

Testing

Like the other larger objects, this desk would best be tested in an office setting; however, it is questionable how likely this will be. What may prove more effective and practical is finding a space within or around the Warehouse that these can reside, I can set up the GoPros to record, and people can come in and use the desks to do the work that they would normally be doing. Quinton Fletchall, an SUIID graduate and current employee of the Connective Corridor, offered his office in the past for testing, but this possibility has as yet to be confirmed with the current forms of prototypes.

Further Development

Over winter break I plan to create a 3D model that can be used to CNC rout the maze pattern into the desktop. When we return to school, I can send the file in to DesignWorks and have them cut it. From there, it’s a very simple measure to add the steel ball bearing and plexiglass and make the wand, and the desk will be ready for testing.

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Play Type:

- Games

Build Status:

25%
// MAKE IT FEEL RIGHT.

page 83
// EVEN IF
A PLAY DESIGN
IS NOT SCIENTIFICALLY SOUND,
IT CAN HAVE BENEFIT
THROUGH SOCIAL,
NOSTALGIC,
AND SENTIMENTAL CUES.
ANY DESIGN FOR THE FUTURE OF OFFICES WILL NEED TO BE COLLABORATIVE & MODULAR.
// CONSIDER THE TOOLS OF THE PEOPLE YOU’RE DESIGNING FOR.
// OFTEN TIMES
THE FORM OF
INFORMATION
MATTERS MORE
TO ITS RECEPTION
THAN ITS CONTENT.

page 27
// WORK SHOULD PROVIDE MEANING.
FURNITURE SHOULD REVEAL & FLAVOR IT.