Designing Spontaneity:

physical spaces within workplaces enabling random stimulation for innovation
Table of Contents

Research Question ........................................... 4

Sub Questions .................................................. 8

Justification ..................................................... 10

Limitations ....................................................... 14

Literature Review ............................................. 18

Research Plan ................................................ 64

THESIS COMMITTEE:  Lee VanderKool, Pamela Napier, Christopher Vize
GRADUATE DESIGN RESEARCHER:  Samantha Jatka

HERRON SCHOOL OF ART & DESIGN:  Fall 2011
How might a generative toolkit be used to enhance random stimulation between coworkers during serendipitous encounters enabled through the design of the physical space within a workplace?

See page 7 for research question definitions in figure 3.
How might a generative toolkit be used to enhance random stimulation between coworkers during serendipitous encounters enabled through the design of the physical space within a workplace?

See Figure 1 for definitions.
1. In what ways can a physical space within a workplace enable serendipitous encounters between coworkers?

2. What conditions must a serendipitous encounter include in order for a generative toolkit to be implemented?

3. How might generative toolkits enable coworkers to be stimulated by random inputs?

4. What information must a designer know in order to select appropriate generative toolkits for unique workplaces?
Highly valued efficiency in the workplace. He believed designing a workplace that would allow people the quickest most uninterrupted path from point A to point B was of utmost importance—anything less than this was seen as lacking goals and a clear sense of direction (Kostos qtd. in Becker 180). The high value Le Corbusier placed on efficiency in the workplace is shared by many of today’s contemporary architects and this is a problem.

Many architects see no use in designing for effective human interaction and instead design for the most efficient use of space. Business executives share this common rationale with architects (Turner & Myerson 75). It is understandable why they struggle to see the qualitative value in things like serendipitous encounters between coworkers, over the quantitative value in low building costs that are associated with efficient planning. It sounds counterproductive, but planning a workplace that intentionally increases meandering and interaction between coworkers can be more effective for the organization than simply an efficient space plan (Becker 180). The problem with placing value solely on efficiency in workplace space planning is that it stifles the creativity that is enhanced by human interactions.

E-mail, texting, social media and the mobile devices that receive these things only compound this problem. These communication platforms channel all information to an explicitly targeted individual or group, which diminishes the opportunity to be mentally stimulated by random inputs completely unrelated to the work at hand. If a person does encounter coworkers whom she does not know she no longer strikes up a conversation with them; they simply turn to their hand held mobile devices to communicate with the intimate group of people they already know (Stilgoe 221). This phenomenon can be seen in break rooms and other common areas of workplaces today.

These issues that limit creativity in the workplace ultimately affect an organization’s ability to be innovative. This should be a great concern for a society that relies on innovative new ideas to keep organizations successful and the economy strong. It is known that in order to be innovative, creative ideas must be hatched. Creativity is directly related to connecting one idea with another idea to synthesize a new idea (Kolko 38). When interdisciplinary groups of coworkers are able to collaborate and bring multiple diverse ideas together, stronger creative solutions to problems are found by virtue of understanding more aspects of complex situations (Thackara 22).
Workplaces can be designed with these important human interactions in mind by understanding the social and cultural human factors of individual organizations. Understanding human factors by means of design research can lead to spaces within workplaces that are designed intentionally for serendipitous encounters.

Beyond simply enabling serendipitous encounters between coworkers, generative toolkits can be developed to enhance these encounters and capture some of their richness. Using generative toolkits is a formal way for people to be mentally stimulated by random ideas not associated with their work. These generative toolkits — such as Post-it expression walls where people can leave ideas behind for others to see on Post-it notes — will allow coworkers to laterally think about problems under consideration.

Thinking about problems under consideration using lateral thinking allows one to generate multiple alternatives by not simply thinking in a typical vertical manner — see figure 2. With lateral thinking little to no judgment is applied to ideas as they begin to flow allowing the mind to freely generate numerous alternatives. “Lateral thinking is closely related to creativity. But whereas creativity is too often only the description of a result lateral thinking is the description of a process. One can only admire a result but one can learn to use a process” (de Bono 11). By intentionally using generative tools that foster random stimulation — a lateral thinking technique — organizations can increase creativity and ultimately become more innovative.

Going beyond efficiency and designing a workplace that leads to important human interactions is a vital goal (Becker 180). A greater focus must be placed on the intentions behind the design of the physical space within which people work instead of just the level of its efficiency. It is known that common spaces within workplaces where coworkers can gather to discuss random ideas are a breeding ground for innovation. Workplaces can and should be intentionally designed to enable and enhance these interactions.

Lateral thinking is closely related to creativity. But whereas creativity is too often only the description of a result lateral thinking is the description of a process.
— it also includes all the social, cultural, and behavioral elements of human interaction, the way people work together and get things done” (Jenkins 17). A workplace is a human ecosystem. Therefore a workplace’s physical space needs to be designed with social and cultural human factors in mind. This research project will look at the design of physical space within a workplace and how it can become more effective for people and organizations.

Specifically, this research will focus on the design characteristics a physical space requires to enable random stimulation between coworkers. Random stimulation is a lateral thinking technique that focuses on developing alternatives to problems under consideration by capitalizing on external inputs — see figure 3. Most lateral thinking techniques focus on internal inputs or develop alternatives from within the problem under consideration. Random stimulation is somewhat unique as it uses external inputs to create analogies, finds new entry points, or develops new equilibriums of concepts for problems under consideration — see figure 4 on page 16.

Serendipitous encounters are directly related to random stimulation, as they are a means for people to be passively exposed to random stimuli. Consequently, planned meetings will not be looked at because planned meetings negate the notion of being stimulated by random inputs. To further enhance serendipitous encounters, generative toolkits will be used as a method to formally generate random stimulation for problems under consideration.

“Serendipitous encounters occur when people meet each other by chance in a way fundamental to human happiness” (Stilgoe 221). Design research methods will be used to inform the creation of physical spaces that will enable these welcomed chance encounters. Design research methods will also be used to inform the development of the generative toolkits: “The name ‘generative tool’ refers to the creation of a shared design language that designers/researchers and the stakeholders use to communicate visually and directly with each other. The design language is generative in the sense that with it, people can express an infinite number of ideas (e.g., dreams, insights, opportunities, etc.) through a limited set of stimulus items” (Sanders 6).

The design researcher will select one organization as the context for this research project. It is important to focus on one context because each workplace will be unique requiring its own specific research to inform where serendipitous encounters are feasible.
Encounters occur and what generative toolkits are most appropriate.

Ethnographic research, along with cultural probes, will be used to collect information within the context. These design research methods will be used to gather information beginning with a broad view of the context and moving towards a granular level. An analysis and synthesis of the collected information will form a complex understanding of the context and will develop insights into the design of the physical space.

There is a need for collective creativity to design the appropriate physical space for random stimulation. It is known that the key to a successful environment where people feel comfortable interacting is based on the amount of happiness the environment offers the people (Stilgoe 221). This happiness can be harnessed by understanding the coworkers’ unique set of human factors. The human factors that are uncovered will become criteria for the design of the physical space (Robinson 70). Co-creation is suitable for this project because it allows for a shared level of expertise and decision-making between the design researcher and the stakeholders directly associated with the challenge (Sanders and Stappers 5). Together, the design researcher and the coworkers can design a physical space that will enable random stimulation.

Figure 4
Visualization showing three effects of positive random stimulation. The effects consist of creating analogies, finding new entry points, or developing new equilibriums of concepts for problems under consideration.

NEW EQUILIBRIUMS
Initial state of concepts within problem under consideration

NEW ENTRY POINTS
Initial entry point into problems under consideration

ANALOGIES
Problem under consideration
Random simulation used to make analogy with problem under consideration

There is a need for collective creativity to design the appropriate physical space for random stimulation.

- Initial state of concepts within problem under consideration
- Initial entry point into problems under consideration
- Problem under consideration
- Random simulation used to make analogy with problem under consideration
- Complete re-ordering of concepts for new equilibrium
- Random Simulation providing new entry point into problem under consideration
- Small adjustment for new equilibrium
- Complete re-ordering of concepts for new equilibrium
- Random Simulation providing new entry point into problem under consideration

Limitations

There is a need for collective creativity to design the appropriate physical space for random stimulation. It is known that the key to a successful environment where people feel comfortable interacting is based on the amount of happiness the environment offers the people (Stilgoe 221). This happiness can be harnessed by understanding the coworkers’ unique set of human factors. The human factors that are uncovered will become criteria for the design of the physical space (Robinson 70). Co-creation is suitable for this project because it allows for a shared level of expertise and decision-making between the design researcher and the stakeholders directly associated with the challenge (Sanders and Stappers 5). Together, the design researcher and the coworkers can design a physical space that will enable random stimulation.
Figure 5
Matrix showing relationship of key ideas associated with this research project. Thicker lines indicate a higher degree of importance to the research.

Simplified Systems Map

On the following pages a simplified systems map is included with each resource review indicating the relationship between the resource and the systems map. The area of the systems map the resource resides in is highlighted.
The authors of this article believe that, “the social environment can influence both the level and the frequency of creative behavior” (Amabile, Conti, Coon, Lazenby & Herron 1155). The article takes a close look at the correlation between creativity and its effect on innovation. The authors create a framework or inventory method they call KEYS Scales to “Assess the Climate for Creativity” within an organization (Amabile, Conti, Coon, Lazenby & Herron 1155).

This article places a strong focus on the social and cultural environment required for creativity in the workplace. Assessing the work environment for creativity is an important article that provides a link between Robinson and Sanders’ ideas on people centered environments that are understood in terms of social and cultural human factors.

Literature Review


Basadur’s book - *The power of Innovation: how to make innovation a way of life* – reveals an eight-step process called simplex. The process is designed to take collaborative groups from the problem finding to the implementation phase of a project. Different quadrants of the process require different working styles, such as the ability to generate versus the ability to optimize. Basadur believes that every individual has a natural working preference, which makes him or her better at one or two of the working styles over others. Thus a collaborative group comprised of individuals representing multiple working styles is ideal to use the processes productively.

Basadur describes how important the process is for collaborative group work. He believes a collaborative group’s process is equally as important as the group’s content. An important aspect of the process is process skills. Process skills are things that allow the group to actually function together in an efficient manner. Two specific process skills that Basadur labels are divergent and convergent thinking skills. It is important in the simplex process to separate divergent from convergent thinking in order to be able to see all the factors of complex problems.

These divergent and convergent thinking skills are very similar to de Bono’s later versus vertical thinking techniques. A person being exposed to, or formally generating random stimulation is using a form of divergent thinking to fine new ideas for problems under consideration. Having an open mind and being willing to be exposed to random stimulation can be considered a process skill when done intentionally. In any project the process plus the content plus the process skills are what yield quality results (Basadur 43).
In Franklin Becker’s book *Offices at work: uncommon workspace strategies that add value and improve performance*, he describes how the physical workplace directly affects things like productivity and emotion of employees. Becker believes that every office has a unique “organizational ecology” and that no two places should be designed alike as he says – “One size doesn’t fit all” (Becker xx).

In chapter 11 – “the value of uncommon sense” Becker outlines ten good rules to follow when designing physical office space for effective use. One of the rules is exploiting uncertainty. This rule involves designing offices for effectiveness rather than efficiency. He describes the notion of “functional inconvenience” in a workplace and how intentionally making people meander around offices can be less efficient but much more effective in terms of cross pollinating ideas from coworker to coworker. Becker states “deliberately planning for apparent inefficiency in the layout and design of circulation routes within an office promotes business effectiveness by increasing opportunities for serendipitous and social contact and opportunistic learning” (Becker 180).

Becker’s ideas on functional inconvenience can be used as a way to plan a physical space to promote de Bono’s idea of exposure to random stimulation. These ideas are similar to Johnson’s and Jenkins’ that the physical space of an office can facilitate innovation. The ideas are also in line with Kemp and Baker’s regarding the importance of building a community atmosphere within an office.

In this book de Bono describes the differences between vertical and lateral thinking. Vertical thinking – the traditional thinking style mainly used in education – involves the sequential development of an idea. Lateral thinking, on the other hand, is a generative process used to develop many alternatives. In lateral thinking, some of the ideas generated will naturally be bad or incorrect – a concept that is not allowed in vertical thinking. “Lateral thinking is not a substitute for vertical thinking. Both are required. They are complementary” (de Bono 12). De Bono also explains that lateral thinking is a concrete process that can be used to find insights that ultimately feed into creativity. Therefore, lateral thinking is a process that can be used to achieve creative results. Throughout the book de Bono goes further into detail describing lateral thinking methods. One of which is Random Stimulation.

Most lateral thinking techniques use internal inputs – or find ideas from within the problem under consideration. Random stimulation is unique because it involves using external inputs – or factors unrelated to the problem, to find alternative ideas for problems under consideration. Random stimulation can be used as a way to create analogies, find alternative entry points, or develop new equilibriums of concepts for problems under consideration. Two ways to generate random stimulations are through exposure and formal generation. Exposure is more of a state of mind involving the willingness to allow random external inputs. De Bono describes four types of exposure which include: acceptance and even welcoming random inputs, exposure to the ideas of others, exposure to ideas from completely different fields and physical exposure to random stimulation. When formally generating random stimulation “what one actually does is to set up a formal process to produce chance events” (de Bono 195).

The use of random stimulation as a lateral thinking method to provoke creative insights aligns directly with this research project. Creating specific physical spaces for interdisciplinary groups to be randomly exposed to diverse ideas supports Johnson’s theories on creating spaces to break innovation. This method of lateral thinking coupled with vertical thinking also goes hand in hand with design thinking, using divergent and convergent thinking skills to come up with innovative ideas.

Tim Brown’s book, *Change by design: how design thinking transforms organizations and inspires innovation*, is largely about how and why design thinking is so important in today’s world. Brown talks about the importance of design thinking not only in standard design problems but more importantly in large scale complex problems. The book talks about how important it is to see problems through multiple lenses. Brown states, “Nobody wants to run a business based on feelings, intuition, and inspiration, but an overreliance on the rational and the analytical can be just as dangerous” (Brown 4).

In the chapter titled “Getting under your skin,” Brown talks about some of the physical environmental aspects of design thinking. He talks about the importance of face-to-face meetings and how some technology sources intended to aid in innovation actually deter it. The design of a physical space that allows people to share ideas and not just have them stored in power point decks is important. “Good ideas rarely come on schedule and may wither and die in the interludes between weekly meetings” – says Brown (Brown 31). Therefore the physical space should allow for serendipitous interactions.

The ideas on serendipity and physically pushing people to interact for the sake of innovation is similar to Becker’s ideas of “functional inconvenience.” This idea is also similar to that of Johnson and Jenkins in creating physical environments that will foster innovative ideas.


“Space for Teamwork: An office redesign at JP Software” is essentially a case study describing how one small office used participatory design research techniques to ideate on how to design the physical space of the offices. They worked with a designer who mainly spent time helping the group understand the fuzzy front end of their design problem.

The group ultimately Co-Created a space that would fit their needs. The designer facilitated and helped them articulate their unique set of human factors. The methods used in this case study will be very similar to those used in this research project to understand the characteristics the physical space will need to have to enable serendipitous encounters between coworkers.
The book - *Designerly Ways of Knowing* is actually a compilation of papers and talks given by Cross throughout a span of many years. Cross explains his theories on where design fits into the academic world proposing that it is perhaps a third discipline not fitting entirely into science or humanities. He also talks about nature versus nurture and what individuals innate versus learned abilities are when it comes to design. Lastly he focuses on creative cognition and different creative strategies that exist.

The portion of the book that discusses the creative leap is of great relevance to the concept of random stimulation. The creative leap can involve procedures Cross describes as combination, mutation, analogy, emergence, or designing from first principles. Using random stimulation can be a way to enter some of these creative leap procedures.

The idea of having a procedure to allow for the creative leap is similar to de Bono’s concept of lateral thinking being a concrete process to cultivate creativity. As de Bono states “Lateral thinking is closely related to creativity. But whereas creativity is too often only the description of a result lateral thinking is the description of a process” (de Bono 11). Thus creative leap procedures can also be a description of a process.

Even more specifically one of the positive affects of random stimulation is the creation of analogies – one of Cross’ creative leap procedures.
In this paper, Fulton Suri describes the value of understanding the experiences people have in the world and using that information to inform design. It is not enough to design a product and know it will function, a designer now needs to know what experience that product will affect in the life of a person for whom it is designed for, or with.

Fulton Suri defines four methods to use when gathering data to understand people’s experiences. These four methods are: learning from data, whether secondary sources or our own analyses, looking at people in context, asking people to participate, and trying things ourselves. These methods exemplify ways in which research can be conducted for this co-creation project to learn what the appropriate physical space is to promote random stimulation.

Fulton Suri’s ideas about understanding people’s experiences are similar to Robinson’s levels of human factors analysis. They both believe design needs to be something that is well understood by people and not simply usable. These research methods and objectives should ensure that the appropriate criteria are used to design the environment for this research project.
In Julian Jenkins’ article - *Creating the Right Environment for Design* - he begins by comparing the dying opportunities for human connections in today’s cities with that of many organizations’ environments. Culture and community are the most important factors for a successful organization. Unfortunately, many organizations’ environment - both physically and socially - is not conducive to stimulating a healthy culture or community for the employees.

Jenkins outlines seven factors for how design leaders can reshape an organization’s ecosystem to create a better environment for the people who work there. One of the seven factors is focusing on human interactions and social processes. With this Jenkins stresses the importance of environments allowing people within organizations to be able to have formal and more importantly informal interactions with each other. “Knowledge, insight, and new ideas tend to come from humans interacting in both formal and informal settings. The formal processes and documents should play a subservient, supporting role, not dominate” (Jenkins 20).

This notion of human interactions stimulating innovation is in line with many of the things that Johnson, Stilgoe, and de Bono describe. The ways in which a specific environment needs to be created to stimulate these interactions is a major portion of what is being researched with this project.
In the introduction of Steven Johnson's book - *Where good ideas come from* – he states “Our thought shapes the spaces we inhabit, and our spaces return the favor” (Johnson 17). Johnson's book is a summation of several case studies illustrating how and where hunches come from that lead to innovative ideas. The common theme between the case studies is the enormous affect an individual's environment has on the ability for innovative thoughts to transpire.

One case study in particular describes the birth of modern day GPS – Global Positioning System. The story takes its roots in the fall of 1957 in the cafeteria at the John's Hopkins University Applied Physics Laboratory in Laurel, Maryland. It is here where William Guier and George Weiffenbach – two physicists with different specialties – began a discussion about the recent launch of the soviet satellite Sputnik. They strung together their personal hobbies along with their formal training in applied physics and figured out how to track Sputnik's exact whereabouts in outer space. Their hunches lead to the discovery that a satellite can track the exact locations of objects on earth. This capability several years later became modern day GPS. The point of the story is a chance off topic discussion regarding non “work” related things lead to one of the most amazing technologies of the 20th century. Had this cafeteria not brought these two physicists together to discuss random ideas GPS may not exist today.

This concept of environments breeding innovation relates directly to de Bono's concept of random stimulation through exposure. De Bono and Johnson also both describe the importance of cross-disciplinary interaction of people to foster innovation. Jenkins, Stilgoe, Becker, and Kemp and Baker also all have similar ideas relating to an environment facilitating idea generation.


The art of innovation: lessons in creativity from IDEO makes the point that it is possible to learn to be innovative and creative and it is not simply an innate quality that some people or businesses do or do not have. This book aims to “demystify” the creative process and show its readers simple things that can be done to enhance creativity.

One chapter in this book outlines the value of prototyping. Kelley gives many great examples of the importance of having a can-do attitude and being able to think creativity when prototyping ideas. Being innovative in a rapid prototyping sense will be important for this research project as we test out new physical spaces and generative tools.
In their book, *Building Community in Buildings*, Kemp and Baker construct a case around the theory that “buildings without people don’t matter” (Kemp, and Baker viii). They strive to answer the question of, “What kinds of buildings most inspire creativity and productivity and protect safety and health for the people who work in them?” (Kemp, and Baker viii). Kemp and Baker believe that making a building’s environment adaptable or responsive to the anticipated needs of the people that occupy them is the key to a productive building community. They also believe that buildings should actively enhance a sense of shared community and culture within them and not restrict interactions that would nurture community and culture.

The idea of designing environments to promote interaction will raise more opportunities for random interactions between interdisciplinary groups of people. This opportunity connects directly with de Bono theory of exposure to random stimulation fostering creativity. These special environments also connect with Johnson’s and Jenkin’s theory on environments shaping peoples abilities to have innovative ideas.
In Kolko’s book - *Exposing the Magic of Design: a practitioner’s guide to the methods and theory of synthesis*, he describes what synthesis is, why it is important, and how to use it. The importance of synthesis, specifically for the use of coming up with innovative ideas is the portion of this book that is most valuable to the research being conducted for this project.

The value of synthesis in driving innovation is the title of his fourth chapter, which is of significant importance to understanding how to catalyze innovation. Kolko describes the challenges in creating an appropriate culture for people to be able to synthesise ideas. As he describes synthesis, “simply put, synthesis is a spark. It is the ability for the human mind to grasp multiple, often incongruent and even competing ideas, and to manipulate them at once, and in parallel into something amazing” (Kolko 41). The culture that people expose themselves to has to allow for the spark that is generated by multiple ideas.

Kolko’s ideas on creating a culture for synthesis or innovation to occur are in line with Jenkins and Johnson’s ideas on the environment facilitating the ability for people to be creative. If the environment does not motivate or stimulate people in the correct way innovation can be harder to come by.

In Martin’s book there are several stories that describe the role of innovation in successful businesses. He calls this innovative path the “knowledge funnel.” Martin investigates the knowledge funnel to understand the process successful businesses used to get to their current state.

Martin discusses the importance of design thinking for the purpose of innovation over that of analytical thinking or intuitive thinking alone. He describes how valuable qualitative data can be and why intuition and emotion are factors that can and should be used when analyzing data.

The idea of the importance of using analytical and intuitive thinking to be innovative in business is similar to de Bono’s concept of using vertical thinking along with lateral thinking to develop other ideas to problems under consideration. It is also similar to Basadur’s process skills of divergent and convergent thinking. All of these experts agree that to be innovative two types of thinking styles are required. It is important with all of these thinking styles to intentionally know which type of thinking is currently being used and why.


In Robinson’s article - *What to Do with a Human Factor* - he describes the difference between what he calls traditional human factors and "new" human factors. Traditional human factors to Robinson are things like physical and cognitive factors that designers research to make artifacts easier to use. New human factors are concerned with more than simply usability; they are instead focused on understanding. As Robinson states – “the key focus for human factors work is not the things themselves, but the way in which people use artifacts to create meaning in their lives, to give form to their experience” (Robinson 71). New human factors research focuses on individual, social and cultural levels of analysis.

Robinson also explains, it is important to know what to do with the analysis from researching human factors. “The end toward which human factors research in design should be conducted is the provision of what we might call “experiential tools” and materials to change people’s frameworks. When people begin to think differently with new products, we’ll know they have been successful” (Robinson 70).

Accessing information through design research methods that are geared towards gathering new human factors data from stakeholders will be an important aspect of this project. It is important that we understand what people’s current frameworks are on interdisciplinary collaboration to enable them to build their own new frameworks to leverage new ways of collaboration and catalyze innovation. This concept is very similar to Fulton Suri’s ideas on understanding people’s experiences through the use of specific design research methods.
In *Serendipity: fortune and the prepared mind*, a different author writes each chapter of the book from the viewpoint of their discipline. Each author describes how serendipity has enabled discoveries within their disciplines. Several examples of innovations are attributed to serendipity ranging from the discovery of penicillin to the creation of the Post-it note.

In this book, Mark de Rond and Iain Morley argue that the word serendipity holds much more meaning than that of simply chance or luck. The authors state, “To redefine serendipity as a consequence of recombining observations into unusual but meaningful associations suggests it is a close relative of creativity” (de Rond & Morley 3). This successfully completes the connection between serendipity and exposure to random stimulation – a lateral thinking technique that leads to creativity. Richard Leakey, one of the contributing authors in this book, describes how serendipity is “the combination of preparedness and readiness to seize unreported opportunity” (Leakey qtd. in de Rond & Morley 4). This is somewhat similar to de Bono’s concept that exposure to random stimulation begins with keeping an open mind.

In *Serendipity: fortune and the prepared mind*, a different author writes each chapter of the book from the viewpoint of their discipline. Each author describes how serendipity has enabled discoveries within their disciplines. Several examples of innovations are attributed to serendipity ranging from the discovery of penicillin to the creation of the Post-it note.

In this book, Mark de Rond and Iain Morley argue that the word serendipity holds much more meaning than that of simply chance or luck. The authors state, “To redefine serendipity as a consequence of recombining observations into unusual but meaningful associations suggests it is a close relative of creativity” (de Rond & Morley 3). This successfully completes the connection between serendipity and exposure to random stimulation – a lateral thinking technique that leads to creativity. Richard Leakey, one of the contributing authors in this book, describes how serendipity is “the combination of preparedness and readiness to seize unreported opportunity” (Leakey qtd. in de Rond & Morley 4). This is somewhat similar to de Bono’s concept that exposure to random stimulation begins with keeping an open mind.

In this article Sanders is promoting a discussion on design research. She discusses the importance of design research in today’s world that is shifting from one that designs for products to one that designs for services. Sanders explains that the “the action in the fuzzy front end [of problems] is all about new ways to understand and to empathize with the needs and dreams of people” (Sanders 5).

One of the ways Sanders describes getting people involved in participatory design is through the use of generative tools. Sanders states “The name ‘generative tools’ refers to the creation of a shared design language that designers/researchers and the stakeholders use to communicate visually and directly with each other” (Sanders 6). People within the context are involved with the creation of generative toolkits and with using generative toolkits as a design research method.

Generative toolkits are a method that will be used in this research as a way to formally generate random stimulation – one of de Bono’s lateral thinking techniques. The formation of the generative toolkits will rely on understanding what Rick Robinson describes as new human factors.
In this article Sanders defines how ethnography can be used to empower the end user or the people for whom a design is being developed. Ethnography, Sanders states—when describing a research project at Microsoft—“enables the researchers to understand and integrate into the software development process the perspectives of end-users whose geographic, socio-economic, and cultural contexts may be very different from those of the software developers” (Sanders 2).

Ethnography can be the bridge that moves design from a product usability focus to a focus on people and their understanding. This is the same concept described in Rick Robinson’s article—What to do with a human factor.

Ethnography will be a key research method in this research project. It will be important to use ethnographic research to observe and understand the context to inform what characteristics are involved in a serendipitous encounter. Ethnography will also be used to inform the creation of the generative toolkit that will be used to formally generate random stimulation.

In this article the concept of designers or design researchers working with non-design trained people is discussed. Sanders and Stappers define four different ways designers are working with people – people centered design, participatory design, co-creation, and co-design. Each distinct type of design changes the roles of the designer gradually from expert to facilitator and the role of the people from passive participants to expert decision makers.

The article looks at how these design practices have evolved throughout their somewhat short history. It also discusses how the focus and roles of design are changing from products to purpose and expert to facilitator. The article describes how designers are going to have to create tools at a meta level to assist people with varying degrees of creative ability to facilitate the design process.

This article is important to understanding how co-creation could be used to design an environment with interdisciplinary groups of people. It lays out some of the reasons why co-creation for a project like this is so important. As the authors are quoted saying “In our experience as researchers and practitioners, we have seen that co-creation practiced at the early front end of the design development process can have an impact with positive, long range consequences” (Sanders and Stappers 5). These long-range positive consequences are what this project requires to be successful and be transferable for the use of others. The ways in which a designer will be required to interact with people for a co-creation project will include Fulton Suri’s methods and Robinson’s human factors analysis.


Landscape and images is a book that encourages people to intentionally opening their eyes, ears and any other senses they want to use to take a look around at just what exactly is happening within the spaces that surround them. John Stilgoe is a Professor of Visual and Environmental Studies at Harvard University and whole heartily believes in investigating our world's surroundings to find the everyday nuances that most everyone glosses over in their ever increasingly busy lifestyles. Stilgoe mostly studies outdoor spaces and his favorite research method is taking a long walk to nowhere in particular.

One of the chapters in Landscape and images is entitled “Rendezvous by Design.” In this chapter Stilgoe lays out his theory on the unintended consequences of the loss of serendipitous encounters due to the overuse of automobiles and cellphones. People in today’s world have to pre-schedule any and all meetings they have, and thus those meetings always have an intended purpose and are always with existing acquaintances. Before the advent of the automobile and more recently the cell phones people had more opportunities to have serendipitous encounters with not only acquaintances but also strangers. The loss of these serendipitous encounters especially within urban settings damages the very fabric that was woven together by urban city dwellers of the past. As Stilgoe says so eloquently:

“Cars did more than just block walk and interrupt. They dimmed the startling, utterly modern excitement of the sidewalk, the stall building lobby, and the department store cafes, an excitement grounded in meeting friends, acquaintances, and above all, strangers in new sorts of space designed for people who knew themselves as modern” (Stilgoe 221-222).

This loss of the serendipitous or random encounters with acquaintances and strangers is the reason why designing opportunities that promoting random stimulation amongst diverse groups of people is so important today. If random stimulation is not considered as a criteria for designs of the future people will slip further and further away from each other and thus the innovative ideas that come from random encounters of people will slowly die. Stilgoe’s ideas about random encounters being important align with de Bono’s methods for random stimulation. These random encounters also require specific environments for them to occur – environments similar to those Jenkins and Johnson describe as fruitful for Innovation.
In the introduction of John Thackara’s book *Winners! How today’s successful companies innovate by design* – he discusses the importance of collaborative groups of interdisciplinary people gathering to enhance their opportunities to discover innovative ideas. Thackara discusses the reasons why organizations need to continuously be innovative in order to remain a healthy business and not become a commodity in the market. Thackara explains, “The only thing a company has that cannot be bought or copied is the knowledge and creativity of its people” (Thackara 40). Thus organizations need to figure out how to cultivate and capitalize on equity that the collective creativity of the people of their organization can produce.

Thackara emphasizes why innovation is so important and that the key to being innovative is through cross-disciplinary or interdisciplinary collaboration. These concepts align with de Bono’s lateral thinking strategies along with Stilgoe’s ideas about people having random encounters to stimulate innovative ideas.
In their book – *New Workspace, New Culture: Office design as a catalyst for change* – Turner and Myerson argue the need for physical office space to reinvent itself to reflect the changing working style of the modern day organization. They believe this is incredibly important for organizations because “the designed office environment can in a general way raise or depress morale, and can in some more specific ways have a major impact on how well the organization functions” (Turner, and Myerson 1). Beyond simply stressing that physical office environments are important, Turner and Myerson bring up the importance of the ability for people in organizations to feel as though they belong to a living and breathing community within their physical space. The physical space should reflect the values and attributes of the community and not the other way around. They discuss the value of designing spaces that allow for cross-disciplinary interactions between many types of people within an organization.

A specific chapter within this book entitled “welcome to the club” describes a new concept in office design where a space is designed for people to interact within the workplace in an environment that feels like a social club. Obviously many different types of social clubs exist in the world from stuffy country clubs to swanky nightclubs and everything in between. The club spaces designed for workplaces are to reflect the culture of the organization and the people that will mix within the club that every organization’s club will be unique. Most importantly, “The club is informal and anti-hierarchical because it is not based on precedent or territory; and it is a great environment for cross-fertilization of ideas because you’ll meet people there other than those you originally intended to meet” (Turner, and Myerson 116).

The idea of designing a physical space like “the club” in a workplace to promote or catalyze random interdisciplinary collaboration is in line with Kemp and Bakar’s ideas about designing buildings that foster interactions within the buildings community. The physical environments described in both these books would be beneficial in executing de Bono’s lateral thinking process of random stimulation. Johnson’s theory on environments shaping innovation is a high level concept of the club or community space within buildings.
NINE WEEKS OF RESEARCH

1. In what ways can a physical space within a workplace enable serendipitous encounters between coworkers?

2. How might generative toolkits enable coworkers to be stimulated by random inputs?

3. What conditions must a serendipitous encounter include in order for a generative toolkit to be implemented?

4. What information must a designer know in order to select appropriate generative toolkits for unique workplaces?

5. Should be able to answer sub questions 3 and 4 some time during prototyping.

6. In what ways can a physical space within a workplace enable serendipitous encounters between coworkers?

7. How might generative toolkits enable coworkers to be stimulated by random inputs?

8. Develop ideas to test 3 prototypes in the field.

9. Retest most successful prototype or a combination of the most successful parts of all three prototypes.

Research plan showing what steps will be taken during nine-week research project. Dashed lines indicate contingencies. Research will begin with collection and move through analysis, synthesis and prototyping. The research results will be written up in a final thesis paper, which will be considered the implementation phase of this project.
Designing Spontaneity:

physical spaces within workplaces enabling random stimulation for innovation