

Interdisciplinaridade para engajamento social: estudo experimental em arte e design

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Resumo

Num mundo em contínuas transformações e com uma população acima dos sete bilhões, igualdade social e sustentabilidade ambiental requer inovações e soluções inclusivas. Hoje, práticas interdisciplinares no campo da arte e do design têm capacidade de sensibilização social e engajamento em questões relacionadas com a saúde. Arte e design combinam métodos artísticos tradicionais com tecnologia e sistemas interativos com vistas a comunicar pesquisas científicas cujos objetivos sejam a resolução de problemas. Processos interdisciplinares de criação abrem portas a uma variedade de esforços colaborativos na busca de soluções proativas para questões ambientais e sociais.

Palavras-chave:

Consciência social, arte e design,
pesquisa interdisciplinar

Interdisciplinary for social engagement: art and design experimental study

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Abstract

In this ever-changing world with a population of over seven billion, social equality, and environmental sustainability needs new innovative and inclusive solutions. Today, the interdisciplinary practice of art and design has the ability to raise social awareness and engagement in health-related issues. Art and design experiments with combining the traditional art methods with technology and interactive systems to communicate scientific research with problem solving goals. Creative interdisciplinary opens many doors to a variety of collaborative efforts in seeking proactive solutions to environmental and social issues.

Keywords:

Social awareness, art and design,
interdisciplinary research

Interdisciplinaridad para compromiso social: estudio experimental en arte y diseño

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Resumen

En un mundo que cambia todo el tiempo y con una población de más de 7 billones, igualdad social y la sostenibilidad ambiental requieren innovación y soluciones incluyentes. Hoy en día, las prácticas interdisciplinarias en el campo del arte y del diseño tienen la capacidad de llamar la atención sobre problemas sociales y compromiso con temas relacionados a la salud. Arte y diseño combinan métodos artísticos tradicionales con tecnología y sistemas interactivos, para comunicar investigaciones científicas cuyos objetivos sean la solución de problemas. Procesos interdisciplinarios de creación abren puertas a una variedad de esfuerzos colaborativos en la búsqueda de soluciones proactivas a problemas ambientales y sociales.

Palabras clave:

Conciencia social, arte y diseño,
investigación interdisciplinaria

In this ever-changing world with over seven billion and growing in population, social equality, and environmental sustainability need new innovative and inclusive solutions. As complex issues continue to emerge, disciplines can no longer function in silos but need to collaborate to gain a holistic perspective on social and environmental relations. Examining the blurred lines between art and design can provide a means to finding proactive solutions to health and well-being. The state of blurriness exists in the experimental and technological practices of art and design. Dianne Harris, professor of Landscape Architecture, at the University of Illinois stated in her assessment of the art landscape theory, "... [there is still much] to learn about the ideological underpinnings of specific sites, and about the precise ways those meanings are conveyed, perceived, interpreted, understood and incorporated into the workings of cultural and social systems" (HARRIS 2008, 189). Artists and art educators instruct students to begin their research with a phenomenological experience or the "felt need" for a subject and then explore more quantitative data for support. Some artists, designers and scientists use their data as an aesthetic pleasing form merging with statistics and data revealing intersection of information, social structures and the day to day life¹. Creative interdisciplinary research is an effective process in seeking proactive social solutions to environmental and social damage.

Interdisciplinary creative research expands the boundaries of conventional knowledge. Traditional art discipline explores expressive forms of visual communication within contemporary and historical art forms through the felt (subjective) experience of the artist. Whereas, design's discipline investigates and grapples with aesthetics versus cost, meeting the needs of the end user, concise communication and a multitude of other dimensions of

the discipline. Primarily, design negotiates among conflicting requirements to create a sustainable end product. Within the working definition of interdisciplinary research and its core premises which are being used by the National Academy of Science, the National Academy of Engineering and the Institute of Medicine (2005) outlines a form of integration:

Interdisciplinary research (IDR) is a mode of research by teams or individuals that *integrates* information, data, techniques, tools, perspectives, concepts, and/or theories *from two or more disciplines or bodies of specialized knowledge* to advance fundamental understanding or to solve problems whose solutions are beyond the scope of a single discipline or area of research practice (39, italics added; REPKO 2008, 11).

One of the major pitfalls of the art practice is the subjectivity level and the insular perspective of the research. Interdisciplinary research with art and design, including the history of art and design with social sciences, natural sciences and applied professional, has the ability to support the subjective perspective with actual quantitative data for a more holistic research. It is important to be able to visualize and humanize how the scientific data and concepts interact with our physical world before implementing possible solutions. The challenge to art and design is to negotiate the language and visual vocabulary with closer and more frequent collaborative exchanges among different fields to produce concise communication to a broader number of end users.

Art and design are separate disciplines that produce different forms of communications, serve different purposes and have their own audiences. The fields of art and design began to overlap in the early 20th century; for example, the consideration of stage design as art and the holistic modernist home designs of Frank Lloyd Wright as a work of art within nature. Modernist abstraction has become an expansive field in its functionality and manifestations of aesthetics in painting, sculpture, architecture, engineering, graphics, industries, and fashion design. This is true for the 20th century industry-driven model, where design reflects functionality and communication, while art pursues pure abstract form to represent a powerful way of perceiving and changing the world through a universal visual language; art has become more than “art for art’s sake” (ARNASON 1998, 217). However, the broad distinction between aesthetics-oriented art and the utilitarian form of design continues to dominate the

modern age model placing restrictions on the ability of either discipline to address emerging issues. Interdisciplinary study cannot be understood “without first examining the existing disciplines, since interdisciplinary approaches are always an engagement with them” (MORAN 2010, 2). It is pushing beyond the comfort zones of discipline that valuable critique takes place for sound research. Art and design researchers and professionals need to go beyond the comfort zone of their disciplines and embrace new ways of thinking that will help to create groundbreaking solutions.

Despite the positive benefits of interdisciplinary practices, the disciplinary boundaries within institutions and industry remain rigidly defined. Boundaries can cause repeated or continues reiteration of the biases assumed by the discipline and similar artistic skill set to keep the status quo. Current art practice, theory and academic research can be considered ‘ideological’ or ‘apocalyptic subjective’, where any skill leveled practitioner can participate (PETERSEN 2010, 38). Our world media is addicted to ‘real threats’ stories so contemporary artist generally chase the ‘headlines’, whereas, artistic academic researchers are working towards contributing visual expression to life altering research. Similarly in design, there is often a lack of interaction and collaboration between disciplines regardless of whether the discipline is design-related — interior, graphic, fashion, industrial, communication, media design — or another field such as fine arts, natural and social science, health studies, and so forth. “Even though design within the broad definition ... can embrace engineering, architecture, and computer sciences, as well as product design, interior design, communication design, these communities of practitioners are sharply divided” (MARGOLIN 2010, 74). This assertive environment creates isolation and can work against fostering creative and innovative thinking needed for tackling complex issues. When disciplines communicate to understand each perspective, boundaries can be bent to discover new materials and techniques for more comprehensive solutions.

Being open to new perspectives overcomes outdated biases and challenges the status quo; altering the common perspective of the discipline creates a collaboration of new thinking patterns and new possible solutions to old social problems. The authors advocates against the notion that either discipline needs to remain independent in order to maintain hierarchy and structure within society by considering specific cases of collaborative art and interdisciplinary design. Art and design each have unique strength. The “*Intersecting Spaces*” collaborative exhibition and

the “*Understanding Bipolar Disorder*” interdisciplinary case studies demonstrate similarities and differences between the disciplines within the context of interdisciplinary research.

Fine Arts Perspective

The aim of Hope’s current research is to question social and environmental structures in the health of Alberta’s citizens and inquires how preventative measures can bring harmony to our bodies and the environment. The visual language within her body of work encompasses a textual and phenomenological interpretation of the landscapes, architecture, engineering, ecology, and environmental projects. Both her research and artistic work draws connections between our external environment, the landscape, causes of cancer and the effects the experience has on an individual. Psychologists recognize the human consciousness as located in the body placed in our environment, perception begins at the end of a sequence of events and impressions (MERLEAU-PONTY 2005,7). “As a methodology, design reflects functionality and aesthetics, while art pursues pure abstract form to represent a powerful way of perceiving and changing the world through a universal visual language” (ARNASON 1998, 217). Personal experience and perspective plots the space of subjectivity in relation to the objectivity of science, while the sociological perspective helps relate human behaviour to microbial behavior within the environment. This body of visual research questions humanity’s future — through examining social structures and policies, environmental microbial relations and the landscape in relation to human health and how they affect individuals and culture. To inquire into sustainable social solutions to public health related problems is to bring social awareness, communication and social impact to Canada’s larger environmental crisis.

Currently, Hope’s paintings draw Canada’s environmental stories into shifting terrains and abstract atmospheres while vibrant colours and silky textures stitches hope into the less palpable part of humanity’s interaction with the environment. Woodcut print images effectively express the role of technology which plays with the reproduction images of human cells and ecological crustaceans layered into interpretations of collected indigenous vernacular story-telling and their relationship to the landscape. The human and environmental interaction is seized upon through our senses. She draws parallels between *Thomas S. Deisboeck and Lain D. Couzin’s*, “*Collective Behavior in Cancer*

Cell Populations” and Robert J. Brym’s, “*Sociology: As a Life or Death Issue*” that identify common social characteristics within humans and cells when they socially organize their environment (190-192). Awareness of corporate involvement is heightened with the acrylic rod supporting the suspended paintings with fishing line throughout the inner space of the gallery; the line of sight becomes complicated and imperative to the bodily experience. Whereas, the fishing line is the tangible object that stitches the intuitive to the visible. The parallel lines of clear acrylic rods are reminiscent of the industrial oil pipelines that cut across Alberta. By weaving together textures, glossy abstract forms that depict landscape elements with supporting materials of linen and clear acrylic rods, it creates an atmosphere of visual conversations about human and environment relations.

The mock exhibition atmosphere of “*Intersecting Spaces*” created in Hope’s art studio inspired an engineering student to inquire into her research; Andrew Chamberlain, a University of Alberta electrical engineering student who has a passion for computer animation, became part of the project over a year ago. The project exchange between Hope and Andrew propelled the conversation into a number of collaborative ideas for the *Intersecting Spaces* exhibition:

There is a floating dome made up of cross-fibre-glass tent rods covered in sheer flowing fabric (chiffon, linen, wool: white to cream colour) hovering in a small dark room, a stop animation film of human cells sinking into a panoramic northern landscape and emerging as a cancer cells as it floats back up into the atmosphere is projected from above. The cell and land interaction filters out beyond the membrane fabric, which connects us to our environment and our bodies (WELLS, November, 2014).

The collaborative art piece between Hope and Andrew is a floating animated video art installation that offers an ethereal experience, where time becomes still; the internal and external is turned inside out. The film, dome object and the suspended paintings generate an interaction between objects and space creating an “indeterminate vision, a vision of something or other”, an essence of human presence (MERLEAU-PONTY 2005,6). The animated film portrays a surreal landscape of Northern Alberta that oscillates between healthy and decaying reflecting human health as the cell morphs into a cancerous state, while it interacts with the damaged environment. The grey covered landscape draws in the viewer into a private context, a perception with

Figure 1
 Hope Wells and Andrew Chamberlain, *Northern Forest Animation*, digital image, 2015. Used with artists' consent.

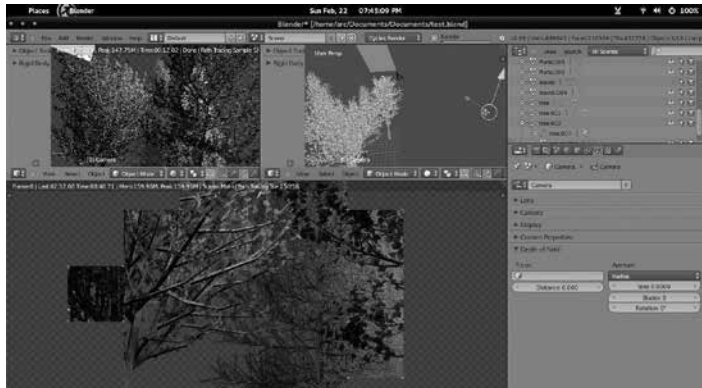
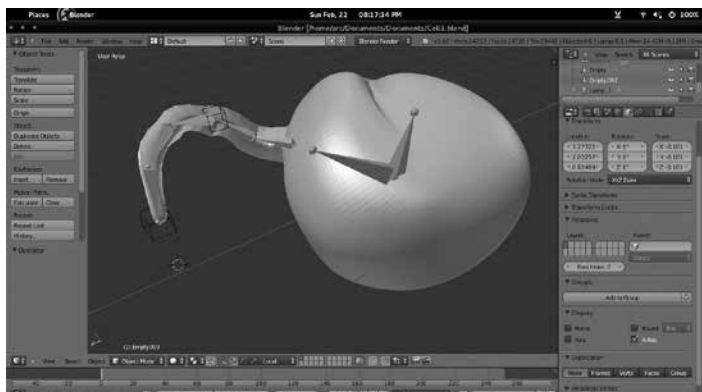


Figure 2
 Hope Wells and Andrew Chamberlain *Animation Process of Creating Cancerous Cell*, digital image 2015. Used with the consent of the artists.



many unclear sights (MERLEAU-PONTY 2005, 7). The landscape and the cell interaction become a unique relation for the viewer. A textual and phenomenological interpretation of landscapes captures all the bodily senses: living, breathing, touching, tasting while feeling the experiences of places and cultural landscapes.

Andrew's main role in the interpretation of northern landscapes is to take hand drawn designs and recreate them into a digitally animated environment and cell, adding technical skill, and engineering knowledge to bring the film into the physical world. The perceptual phenomenon in the video installation is built and created using the Blender and Bio-Blender program. Blender is an open source animation program made from the collaborative efforts of hundreds of active volunteers from around the world; by studios and individual artists, professionals and hobbyists, scientists, students, VFX experts, animators, game artists, modders, and designers (ROOSENDAAL 2005, blender.org). As Ton Roosendaal states in Blenders Mission Statement:

We work for people who consider themselves artist — and who work on creating 3D individually or in small teams together. The definition for “artist” can be wide — to include [fine artists], engineers, product designers, architects or scientists. But each of them can be considered to have a serious interest in working with 3D software to create something related to that interest (ROOSENDAAL 2005, Mission Page).

The goal of the developer is to blur the lines between consumer and producer, which makes animation design open to the general community and allows them to help shape the development of resources through horror analysis, technical support or programming aids. One of Blenders derivatives ‘BioBlender’ is designed to be used for the modeling of chemical and molecular compounds for both research and educational visual information. One of the most prominent examples of the effective use of animation to convey scientific research is the film “The Challenges of HIV Research” by Monica Zoppè, who is a researcher for the Scientific Visualization Unit for the National Research Council in Pisa, Italy. Hope and Andrew chose to use Blender because it is an open-source software that allows for a more artistic open approach, transparency and collaboration. Working with the animation, a minimalist sound score adds another layer of philosophical and emotional depth to the surreal atmosphere of the film.

Minimal ambience music score will be designed to provide an ethereal experience to *Intersecting Spaces* animation film. Again using, “The Challenges of HIV Research” as a prime example to the effective use of film and sound art to create an emotionally moving presentation of scientific research; Monica Zoppè had Massimo Magrini design a minimalism sound art piece to accompany and compliment her film. The idea of sound art participating in creating a bodily experience within the film project was inspired by two Edmonton-based sound artists Gary James Joynes and Scott Smallwood in their performance titled “*Lamentations*” (May 4, 2014). Both were playing their high frequency oscillating sound art in a small dark exhibition space. With earplugs in Hope’s ears and eyes closed, she became aware of the vibrations that began to generate throughout all organs. At one point, a frequency was hit where the cyst located in her knee, which began to twinge and vibrate causing the knee to shake. The sound waves make a physical effect and connection from the atmospheric space to the viewer’s body linking the two to contemporary scientific thought, yet through human experiences. In a dimly

lit space the interaction can be enhanced, the bodily space can be separate from the external space while simultaneously encircling its members. The colour palette of the artwork is bright and expressive of devastation, trauma and loss yet in a hopeful and comforting way. The connection between the treatment of the environment and the effect to our bodies are mirrored with equal kindness.

As Hope constructs these spaces, she refers to sociologist Robert J. Byrm's ongoing research, where he analyzes the state of the land and wildlife in relation to cancer rates. The mistreatment of the land transfers to the wildlife starting with the micro crustaceans within the algae; the toxins seep into the aquatic life. Humans are the background of aggression or a vague power against nature with a gesture and aim that stands out. The changes in our cells are the unfortunate result from human aggression that nature has to accept and function with. Brym challenges us and medical science to find, "truly effective [cancer] treatment, [which] must also involve investigating the social causes of disease and designing health and environmental policies that minimizes disease risk" (BRYM 2012, 98). Hope feels challenged to collaborate with the art and design world with engineering knowledge to find sustainable solutions, and then package the information to inspire and communicate the possibilities to the public. Communication with the end user needs to be clear and concise with providing an emotional connection for the viewer. The exhibition and statement sets the stage for a social engagement between environment and viewer.

Figure 3
Hope Wells Athabasca Acrylic,
Glass Beads, Wool, Silk On
Linen 26 in x 24 in 2013
Used with consent of the artist



Intersecting spaces, Hope Wells:

Hope puts her energy into expanding her thesis exhibition that documented the phenomenological experiences of memories and present events within the Canadian "portrait landscapes". Her expansion is to perceive, and interpret traditional knowledge story collections into research that makes connections between our external environment and the effects the experience has on a person. The space or relation between the traditional knowledge and the collected scientific evidence paints a very different picture than just the facts. The stories generally begin with the locals of the Athabasca Basin in the province of Alberta relying on the animals for food, and the river for water. As they consume the immediate resources cancer rises to a 31% contraction rate between the years 1995 to 2006, which are rarely seen in low populated communities (BRYM 2012, 98). Even though these

facts are devastating, the phenomenon of perception goes beyond the field of vision; it does not necessarily relate to the aesthetic attributes of the physical world. The “felt need” is the perception that there are abstract forces influencing the environment and human health related issues. Abstract forms fluctuate in relation to the natural material of the ground and to each other. Both indigenous and scientific maps influence the shapes of the white wool in relation to the flow of blue acrylic paint with silk lines of connections forming a melding of figure and environment.



Figure 4
Hope Wells Untitled Woodcut,
Acrylic, Wool, Silk On Linen 18.5
in x 19.5 in, 2015
Used with consent of the artist

The indigenous stories have an air of ‘real threats’ of intense coloured animated toxins that poison the micro-environment creating an acidic environment for the pickerel. The surreal altered northern landscape triggers both the pickerel and human cells into anxiety, multiplying uncontrollably. The woodcut cells layer and pile on top of one another forming lumps and humps in the helpless body of the pickerel. The invading tumor knows the immunity system is going to try to stop it so the imprinted cystic mass begins to make its environment even more acidic the stromal cells become fearful, which enslaves them to become the defensive force. Stromal cells are the decoy for the immune system keeping it away from

the tumor so it may grow and spread to create other cancerous social communities. (DEISBOECK AND COUZIN 2009, 194). The fish is no longer the keeper of its body; it has become the home to the disease. In a desperate search for food and health the pickerel spots a worm just floating in space, it takes the bait trapped with hook in mouth and eye, it sores to the surface. Air hits its gills with a driving force causing it to gasp for oxygen; it no longer feels the cool soft water flowing through its scales. With a thud its body hits the rough wood of the boat and soon the fishermen's body won't be his own, as the story goes.

Humanity manipulates the earth; the environment affects the human body. The design and engineering of the dome is the background to a spatiality of situations. The suspended paintings and the animated film dome considers the body movement of the viewer. "[The body] movement is not limited to submitting passively to space and time, it actively assumes them, it takes them up in their basic significance which is obscured in the commonplaceness of established situations" (MERLEAU-PONTY 2005, 117). The phenomenal portrait body within the landscape and the body of others are elements in the subject and the world, rushing forward they attempt to grasp and perceive the objects. The sensed traditional knowledge highlights humanity's less desirable traits that are linked to climate change that forever poisons the aquatic and animal life up north. Currently, the human body and environment are not harmonizing creating an unhealthy relationship. It is with combined efforts of art and design along with the participation of the viewer can we begin a healing journey to finding solutions to our health and environmental situations. Knowledge alone will not be able to begin to correct the damage on the environment (SPIRN 44). Creating an integrated methodology between all disciplines is the key to having a holistic perspective. It will take the combined efforts of sociologists, ecologists, artists, designers, medical sciences and the community to plant preventative measures to reduce 'disease risks' within our living-spaces.

Design Perspective

Design is inherently interdisciplinary because designers constantly engage in various fields. However, participating in numerous fields does not necessarily mean that designers are utilizing in-depth knowledge to address complex issues. Designers are simply borrowing and integrating from other disciplines without producing unique long-term solutions. As Bierut(2007, 14) describes,



BIPOLAR SYMPOSIUM

Brought to you by Mental Awareness & Health Initiative (MAHI) January 31, 2013 at 5:30pm / Telus Building Room 134 / FREE PIZZA

*Figure 5
Lyubava FartushenkoMAHI
final design poster by Mathew
Letersky, 2013 Used image with
artist's consent.*

“In a single day, a designer can talk about real estate with one client, cancer cures with another, and forklift trucks with a third.” Designers can be physically separated from the subject that in depth research and connections are hard to achieve. The harsh reality is that many designers have little or no understanding of the complexity of social, political, economic, and environmental issues; however, interdisciplinary method has the capability to address this issue.

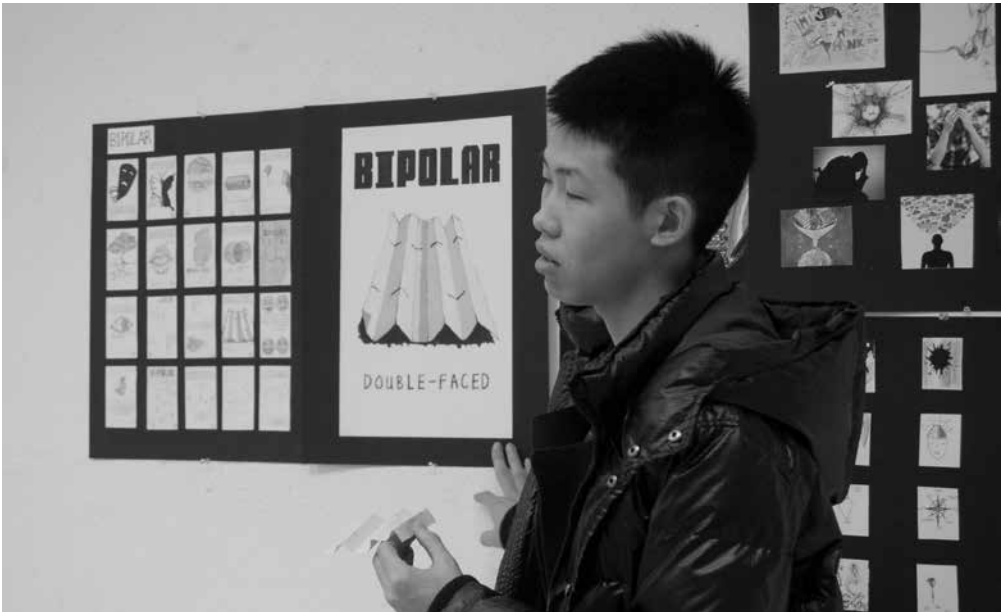


Figure 6
Lyubava Fartushenko Student
presenting his poster and
moodboards, 2013 Used image
with artist's consent.

Modern design practice generally favours multidisciplinary method as means of addressing specific project criteria. Multidisciplinary method, by definition, does not “integrate” or produce new knowledge, but rather learns from various disciplines without breaking any boundaries. Non-deliberate approach of Designer to other disciplines is problematic because the designers do not fully engage with the complex issues. As the design discipline continues to grow, multidisciplinary method cannot satisfy growing complexity of our modern world. Based on empirical and theoretical evidence, the implementation of design into other disciplines produces creative and innovative results. Design gradually becomes a place of intersection, in which “insights, methods, and ideas from different disciplines can take root and flourish.” (NIEDERHELMAN 2001, 87). “We need much more emphasis on design — for everyone” (DE BONO 2009, 71). Edward De Bono further emphasizes the philosophy of the design thinking process:



Figure 7
Lyubava Fartushenko MAHI
final design poster by Maryn
Sommerfeldt, 2013 Used image
with artist's consent.

Design thinking is very different from traditional judgment thinking. For judgment thinking, the desired output is truth or apparent truth. For design thinking, the output is value. For logical thinking, certainty is essential. For design thinking, possibility is essential. Logical thinking likes to work with facts.



Design thinking has to work with perception. The three most important things in design thinking are: perception, possibility, and practicality (the three Ps) (DE BONO 2000, 222).

Figure 8
Lyubava Fartushenko
Students presenting their final
work to MAHI, 2013
Used image with artist's consent.

Lyubava's case study focused on collaboration between Mental Awareness Health Initiative (MAHI) and a group of undergraduate design students at the University of Alberta of Edmonton, Canada that looked at the mental health issue, *Understanding Bipolar Disorder*. This collaboration offered a valuable learning experience for novice designers by empowering them with new knowledge beyond design aesthetics, communications, and mere functionality. It provided students with an interdisciplinary experience on how to develop solutions to a "real world" problem within the academic learning environment.

Lyubava's students and collaborators had preliminary brainstormed exercise to identify most crucial and relevant issues within mental well-being. Since designers had little or no exposure to the subject, the MAHI provided their disciplinary expertise, particularly on little-known Bipolar disorder. The MAHI was asked to deliver an in-depth presentation on mental health issues so the designing students could grasp and understand all the issues and complex concepts that are involved in the mental illness:

Bipolar disorder is a frequently occurring illness, which, without appropriate treatment, can have a devastating impact on the life of the person suffering from it. The World Health Organization estimates that bipolar disorder is the sixth leading cause of years lived with disability, and yet the disease remains largely under-researched (MCDONALD et al. 2005). Bipolar disorder is characterized by manic periods of extreme high mood lasting at least a week. Manic periods often mean reduced sleep, shortened attention span and sometimes dangerous behavior; however, symptoms vary from person to person (BIPOLAR SYMPOSIUM 2013).

The conversation between MAHI and designers was on-going to better represent the issue and to steer away from a standard quickly-designed outcome. Then, the students were further directed towards independent research and exploration of visualizing techniques, which involved experimenting with various fine arts techniques and technology that were beyond standard design software and the students' usual skill set. As a result, the designing students came up with a mental awareness campaign, which consisted of a series of posters, where they involved traditional fine art techniques and technology of drawing, painting, sketching and even photography prior to the process of digitization.

The fundamental goal of the project was to raise community awareness to help improve the quality of life for those afflicted with mental diseases, conditions, and disorders; the entire process for the result of a valuable collaboration between MAHI and design students. According to the members of MAHI, the anticipated number of attendees for "Understanding Bipolar Disorder" symposium increased from 50 to 200 people, signifying the design success of the promotion. However, the main success of the entire process was the interdisciplinary engagement between mental health experts and designers to seek innovative solutions.

Underplayed Role of Technology:

The perspective that the role of technology is underplayed can be addressed by examining art venues, social media and within health institutions. Predominantly, within large and popular art venues, such as Museum of Modern Art in New York, Tate Modern in London or the Art Gallery of Canada In Ottawa (AGO) only feature big-name artists, who primarily work within pop culture. For example, the current exhibition

titled “Art Spiegelmen’s Retrospective” running from December 20,2014 to March 15,2015 at the AGO is:

A tireless innovator who is unafraid to tackle difficult subject matter, Pulitzer Prize-winning artist Art Spiegelman has drawn inspiration from a wide range of sources in his work including politics, the Holocaust, Cubism and hard-boiled detective fiction. *Maus*, a two-volume graphic novel that recounts his parents’ life in Nazi-occupied Poland and later at Auschwitz, was the first and only work of its genre to win the Pulitzer Prize, in 1992. *Art Spiegelman’s CO-MIX: A Retrospective* will display original manuscripts of *Maus*, rarely seen due to their fragility.

Incredulously, innovative work that focuses on current social health related issues are highlighted in smaller art venues and science observatory centers. For example, in 2010, the Glen Bow Gallery in Calgary hosted a traveling exhibition called “Perceptions of Promise”, which examined biotechnology, society and art through the collaborative work between internationally recognized artists and biomedical scholars/scientists. Whereas world-famous “Body Worlds” exhibition has to date been viewed in large museums, science and technology centers and shopping centers by more than 38 million people, in cities around the world (Body Worlds 2015). This exhibition teaches anatomy through expressive visual figures that have been preserved with an innovative process “Plastination” preserving the body with the use of reactive polymers. Other organizations like, Art and Science Collaborations Inc. have been operating as an art-sci community since 1988 out of New York. Their mission is to raise public awareness of artists and scientist using technology as a means of artistic expression and communication of scientific research. Interdisciplinary work based on or using innovative technology has been exhibited on the international stage since the first World’s fair in 1851. The role of technology and science within art and research has been growing in popularity in the last twenty five years, although it still has not reached the height of its integration within educational institutions and the broader art industry.

Concluding Remarks

Both artists and designers tend to use analogous tools and methods while approaching similar issues. Artists provide uninhibited form, colour, space, texture, lines, while designers embrace moodboards, digital software, photography, and typography

practices — these are examples of available art and design-related tools. Both case studies involved interdisciplinary collaborations, co-creation and co-designing, and community outreach, while tackling health issues. Collaborating across discipline boundaries is often seen as a condition for creative problem-solving; it is rare for one individual to come up with original ideas that have great value without interacting with other people (SAHLBERG 2010, 343). However, research collaborations between artists and designers to understand modern issues to address existing and emerging problems related to health, climate change, globalization, sustainability, and many others remain uncommon. Through interaction, each discipline must negotiate differences in approach and methods. Traditionally, Fine art is used to express a personal and emotional response, whereas design focuses on practical function, however, many contemporary artists and designers are more open to explore beyond their own disciplines. As a result, fine art and design can collaborate with disciplines such as medical science, engineering, sociology, anthropology, music and others to explore and gain holistic knowledge for practical solutions in health and beyond.

NOTES

1. See website for an example of the scientist and Prof Dr. Eshel Ben-Jacob using microbial art to further his research on interrelation between microbes and their environment.. http://tamar.tau.ac.il/~eshel/papers/levine_2004.pdf

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