



MULTI-SENSORY REPRESENTATION HOW SOUND AND MOVING IMAGES ENHANCE USER EXPERIENCES AND EMOTION IN INTERIOR DESIGN

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Abstract

Interior design struggles with representing the users experience and aligning it to an emotional connection in a proposed space. Traditional methods fall short of delivering this connection between person, space and experience. Floor plans, elevations, perspectives, color and material boards separate the design's information and fracture the experiential image needed to identify and critique a user journey within a proposed environment. Movie trailers are ideal examples of short, emotionally engaging representations of a full-length movie. The animation, moving text, and short clips of a film organized around a musical score provide a rich emotional experience for the audience. I have adopted the movie industry's practices and applied them in interior design representation early in the design process. Using animation software, my students and I transfer traditional static presentations into digital video/presentations. This paper describes this method of representation, outlines the process of its making and reviews the feedback from interested constituents.

Introduction

The traditional complex language of interior designers and architects consists of abstract drawings identified as floor plans, sections, elevations and perspective drawings. These relatively small 2-dimensional devices do their best to explain huge 3-dimensional environments. This disconnects between the actual built environment and our representational tool sets create huge concerns for the client and the designer during a project. I have always been concerned with this disconnect and for years have been searching other professions visual languages to find clues that might help us expand our current language potential.

One area of concern is the inability for designers to represent the emotional connection to an environment that a user might experience. At the beginning of a project it is crucial for the designer to be able to express user experiences to a client as well as to other involved stakeholders. Some architects and designers use word association and image collages, or what is commonly known as "mood boards or concept boards." This provides the client with imagery and text that might help begin to discuss the emotive conditions and decision making necessary for a successful project to develop. David Whitebread in his book, "The Design Manual," defines the concept or mood board as:

Graphic presentation boards that collect images from magazines, catalogues or websites (...) Mood boards can conjure a feeling that helps capture the experience of your project-so they can be idea generators in themselves. They can help create an atmosphere for your design or the experience of it based on a fantasy place or rather a real place. They are used extensively in product, film and interior design (Whitbread 2009)

These stationary methods do open the conversation pipelines and have been known to help in some cases with the messy "touchy feely" part of the ideation stage of the design process. The impact, however, often falls short of its potential. My alternative approach better engages the client and designer with the emotional framework necessary to understand emotionally what is to come.

Inspiration

A number of years ago I sat in a movie theater, watching the movie trailers to upcoming shows and found myself tearing up one minute, scared with shivers the next and then empowered along with the hero. This emotional roller coaster existed within a three to five minute timeline. "Short and sweet" as the saying goes. I wondered what if a designer could make a client cry. Everyone knows clients have made us cry. The point is that, wrapped up in that two to three minute trailer were all the components necessary to stir up a collective emotion that was generally agreed upon by the entire diverse audience. The following quarter I began engaging my interior design students in the role of amateur movie (trailer) making.

Problem Statement

My original goal was to encourage and instruct interior designers to make short 1-3 minute films that replaced the static front-end information traditionally used in interior design presentations. These video experiments unlocked the key that allows us to concern ourselves with experience and affect that we associate with an environment. Furthermore they were intended to help educators find the tool that would better allow us to dissect the emotional connections and critique emotional content with our students during the design process. This has been a hard yet important topic to discuss and explain to our young design students. I felt the key was the movie trailer. Many interesting things have come from this exercise over the past 5 years and I will touch on these in this paper.

Methods and Procedures

Background

Prior to introducing the methods and procedures of creating and critiquing this new multi-sensory way of representing the conceptual ideas of a project, let's first identify our traditional methods, their original abilities and intentions.

According to the book *Professional Practice for Interior Designers*

by Christine M. Piotrowski there are 5 phases of an interior design project. The phases closely mirror project phases in architecture and are: (1) programming, (2) schematic design, (3) design development, (4) preparation of contract documents and (5) contract administration. It is predominately phases 1&2 where our movie trailer experiments are most effective. During the programming (or information gathering) stage it is imperative to understand the demographics, cooperate branding, users and existing conditions of the environment. Once all this research is gathered it is traditionally the designer's role to visually present its findings to the client. The schematic phase is when preliminary design decisions are established. These include concepts for proposed layouts, materials and physical relationships. It is in this phase that the designer identifies his or her inspiration for the project and establishes the characteristics and framework in which future decisions are made.

Our constructed environments are often stoic in nature. Solid examples of architecture and materials assembled in a way to surround us, although the architecture itself rarely moves our relationship with it is in constant motion. The famous 20th century Psychologist, James J. Gibson, coined the term "Optical Flow." This term characterizes "the streaming motion of objects through a visual field. (...) Optical flow acts as a cue to structure, or physical layout of the environment, independent of other cues such as perspective." (De Jong 1994) The understanding of our environment is not made up of one view, but of multiple views taken over time, a cognitive collage of sorts. Interior and architectural representations of our built environments have existed as static documents and this goes against our perception of the environments they are trying to represent. Our ability to narrate our spatial ideas visually and effectively is dependent on movement.



Movement within animation is something that simultaneously exists on many levels and speaks in many ways. Movement conveys story, character, and theme. It creates tension through the development of expectation and its release, through the arousal of curiosity and its resolution. Movement creates the structure for the passage of time. (Laybourne, 1998)

In addition to the power of movement within the perception of place and story, the synthesis of multiple-sensory detection is paramount for us to engage emotionally with our environment and henceforth with our representation of that environment, real or proposed.

There are certain fundamental factors attached to the moving compared with static images, no matter how they are made – the capacity of moving pictures to engage the public on several levels (sometimes physically, sometimes emotionally, sometimes intellectually) and their ability to convey a range of effects which other media would find much more difficult to achieve. The synthesis of pictures, movement, sound and effects are means of communicating with audiences expressing a deep feeling. (Halas, 1990)

The advent of sound in fact is probably the most important component to engaging the audience emotionally. The connection of the soundtrack and the images, when done effectively, can have the biggest impact on the projects ability to engage the audience emotionally with the material.

There is no longer a need to question the effectiveness of aural and visual effects. It has been scientifically tested by a leading commercial agency on behalf of television companies. The finding was that if an audience retains an aural message to the extent of 20%, it retains a visual one to the extent of 30%. But when the two are successfully combined, this rises to 70%. The effectiveness of seeing and hearing has consequently been confirmed. Its utilization is practical in all fields of communication, from advertising to teaching, science and entertainment, but especially in animation, which, as a rule, is a medium for experiments in vision, sound and music. (Halas 1990)

The research confirms those connections we have with the stories being told in the movie theaters, that a multi-sensory approach to “story telling” should create a better story than our traditional static approach. Telling a story, after all, is what we are trying to do. Our stories contain scenes and sets, (our environments), characters (users), a plot (the movement and interaction of our characters in our scene) and the feelings along the way, those that are perceived and those prescribed.

Tools

In order to create our first videos we needed to expand our knowledge of software, terminology, inspiration and overall methods of working. Our software of choice is *Adobe After Effects*. There are some more recent programs including upgraded *Photoshop* that offer animation choices along with sound embedment and editing capabilities. However, these easier ones often limited our ability to control the effects and edit the quality of the sound along the length of the video, which I felt was crucial to the outcome. Of course, having graduate students from our animation program as a resource for information, often leads to selecting the luxury car model over the economy car. Our interior design students, over the last couple of years, have been able to tackle some of the complexities in this *Adobe* product easier than those before. The language barrier was apparent as soon as we began working with the software that is geared toward animators. New terms like; “frames per second” (fps), “keypoint,” “overlap,” “tweening,” “panning,” “zooming” and “transitions” along with many more were foreign to us at first. Our interior students overcame these barriers with the help of online tutorials and support from our graduates in the animation department.

One of the next hurdles to overcome in this process was to think how we were going to tell our story before we knew the design. This was one of the most amazing paradigm shifts to occur when working this way. We had always created the design or collected the images before we narrated the “story” to the client. When you begin to make a video early (at the beginning) of a project you don’t discuss the space as a series of design decisions, instead you talk about what a user’s journey should feel like or what a certain message should be to begin validating the decision making later. These pre-visualizations and the narrative that develops around the pre-visualization becomes the innovative part of working in this capacity. One of the first tasks to test your narrative is to create an animatic. These are a series of stills/sketches or very short animations that describe the highpoint of the story line and identify some of the key transitions and/or image movements.

Figure 1: Rough Storyboard



Note. From A. Duzga, (2012, Oct 10), Pigment Studios: Rough story board, [web blog post] Retrieved from <http://pigmentstudios.blogspot.com/2012/10/rough-storyboard.html>



Methods

Our traditional inspiration for interiors typically comes from art, technology, and science and, of course, other published historical or current interiors. When we were making these short movies those inspirations were often unable to help us construct a framework for the narrative. We began seeking out other media examples for inspiration. These included short and long animated movies, television advertisements, films of all kinds and lengths, music videos and movie trailers. Some of our favorite examples included; *Sliding Doors*, where two separate, but related stories unfold side by side in what can be described as parallel universe ping-pong match. The trailer to *Stranger Than Fiction*, where video images are overlaid with informational text that help narrate the story behind the story. *La Jete*, the Famous art film by Chris Marker that describes the future and past, using black and white photographs, that transition over a narration which culminates in the middle of the film with a 10 second live action moment. In essence, visualizing the moment when the dream world enters the real world. We looked at these and many more for content, plot, emotional impact, visual effect, transitional moments, graphic layering and much more. The conversations in the studio changed from a static critique to a dynamic one. Plot, narrative and story became the common goal. Emotional journey became the descriptive path toward that goal. We began to describe a build up toward a future event rather than the quality of a current environment. Another non-traditional activity in our studio experience was "sound track" day. Once the work on the videos were past the animatic stage and the students were filling in the visual components of the narrative, including transitions and movements, it was time to assign a sound track to the project. Transition timing and emphasis can coordinate with this emotional additive component. Our iPods and a speaker system were all we needed to sample hundreds of songs and sound tracks collectively. The students would first show their draft videos and then propose soundtracks they felt aligned best with the emotional direction of the story. When 18 young students working in two person teams begin discussing music, the dynamics of the studio drastically changes. Normally quiet students become animated and openly passionate. I cannot think of one person who is not emotionally passionate about some genre of music. Many are passionate about many genres. Music moves us, psychologically and often physically as well. As mentioned above this is a key ingredient that unlocks the emotional component to this line of working. The videos become alive at the moment the music is imported into the work.

Results

The following is a brief description of four of the projects The Ohio State University interior design students created.

The first attempt at working this way was awkward, as most first attempts are. The students worked alone and the "new" software was a struggle at times. In addition, the original goals were simply trying to animate existing mood boards rather than see what video making could potentially develop. The project brief asked the students to design a small-scale environment with a clearly defined human interaction as its key purpose. A few examples included; a smoking shelter outside an office building, a two person design firm focusing on socially conscious solutions, a consultation space for a prison psychiatrist and a proposal for a new and improved catholic confessional to attract younger members into the catholic faith. Figure 2 below shows a sequence animatic from the catholic confessional video. The traditional still images and associated text were replaced with a series of images fading in and out along with the associated text panning across the bottom of the scene. The music "Like a Virgin" by Madonna (instrumental version) created an interesting and contemporary twist to the often iconic images of faith and religion.

Figure 2: *Movie image sequence*
Dissolve transition at each image



Word "User" pans right as images fade in and out
Note: Screen shots from student video (2008)

The following year I had the students create videos to be submitted to the annual national student competition for the retail design institute. The project theme was to upgrade the existing C-store experience consisting of gasoline station and mini-market, so that it would attract a changing population of consumers. We submitted a 3-minute video for each solution instead of the prescribed traditional requirements for the competition including floor plans, reflected ceiling and lighting plans, fixture details and a business brief. Our submissions, despite breaking all the rules, were praised by the jurors as the future of design representation and one of the projects was awarded with an honorable mention.

The first example (figure 3) describes a new experience by combining 3 known experiences commonly found in separate retail archetypes and imagines them all existing under one roof; "Cafe Convenience". This video adopts the "sliding doors" scenario by combining these different experiences as an overlapping narrative that passes in and out of the new store type across a typical day. The music works to emotionally connect the viewer with this multi user experience.

Figure 3: *Movie image sequence*
Scene 1; cars from all three scenarios in frame



Scenario 3 car revealed as 1 & 2 pan left off screen- car 3 pans to the right
Note: Screen shots from student video (2010)

The second example from this group is the project that was awarded with an honorable mention and was explained as a "juror favorite." This video described a journey from pump to produce of a new environmentally conscious approach to alternative fuel and locally grown healthy produce and product choices. These conditions do not currently exist in the current offerings of the C-store. The animated video and



graphic information was inspired by the trailer "Stranger than Fiction" where the visual story was enhanced by carefully overlaying facts (text blocks) explaining the benefits and details of the visual narrative. In addition, the music score provided a lighthearted accompaniment that keeps the viewers engaged and smiling throughout the video. Creating the happy experience one is supposed to have while visiting this futuristic place,

Figure 4: *Movie image sequence*

Car moves in from left edge and parks at pump



scene 1 dissolves to graphic of car and pump- text drops down and swings in place

Note: Screen shots from student video (2010)

The final project was part of *Talent for Tiles* an international student competition project, sponsored by Cooperativa Ceramica D'Imola. This video was primarily used to emotionally connect a viewer with the demographic conditions to the problem statement of their project. The team through research found that many of the United States most impoverished citizens exists within a couple of miles of the wealthiest citizens. The video was an attempt to inform the viewers of this fact and to engage them in the proposal to change these troubling conditions. The soundtrack had interviews and dialogue woven into the music. This was a powerful emotional addition to the moving images and imbedded video clips. The demographic statistics in the beginning of the video are placed between the video clips and moving images. Emotionally speaking, this is one of the most powerful videos our students have produced. It is a clear example of how this multi-sensory approach can engage and move a viewer in ways that surpass our traditional methods.

Figure 5: *Movie image sequence*

Scene 1; video clip of homeless man turning his head towards the camera [text of audio]



video clip fades to graphic describing demographic statistic and locations

Note: Screen shots from student video (2012)

Conclusion

This process is just one more step that technology has afforded us to take in our ever evolving educational and professional pursuit to represent our emotional connection to our environments. Interiors have always been intertwined with our emotional memories of events. Our sequential perception of movement within the boundaries of place and time has been a necessary component needed to understand how environment and emotion intertwine. Finally, as designers we have tools that can begin to tell us the story of our intentions, our creative process and most of all emotionally engage others and ourselves along the way.

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