Architectural Research and Representation: Expressing Sense of Place Through Storyboarding and Animatics

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ABSTRACT

A consistent challenge within the design fields is the identification of appropriate research methodologies. The issue of representation has few precedents in other fields; it is unique to design and can be used as a research tool. In this paper, we will discuss the use of representation as a research tool to investigate and express a sense of place in the early stages of urban context analysis.

Human experience always occurs in a place and our memory of any experience is always place-specific. Emotional response is intrinsic to place experience and place memory. The *emotive place* captured in life stories is what contains the meaning of place that needs to be responded to by architecture. Life stories evidence significant urban paths, collective rituals, views, the relevance of no-longer existing buildings and qualities of a place in general. In the case study presented in this paper emotive space evident from life stories analysis, typically expressed in a written form was represented in storyboards (sketches used in film planning) and animatics (a moving storyboard).

The graphic notation of the storyboard encouraged the sequential exploration of architectural space. It also identified significant elements and points of view that articulated space and events. The storyboard representation had certain limitations when expressing physical space qualities since, as in any sketch, it expressed space schematically with very little definition on light, textures and materials. The animatics was more effective when expressing the emotive space as it included audio and time. The use of storyboards and animatics can be thought of as a simple design exercise that is part of the design process or it could be considered research about the remembrance of place.

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INTRODUCTION

One of the key challenges is that research in architecture focuses more on efficiency and reliability of building design than on the social, cultural and psychological factors contributing to the sense of place (Ragheb 2009). We propose that this has been, in part, because of the challenge in identifying appropriate research methodologies and underestimating the role of representation as a key component that overlaps research and design. We argue in this paper that exploring non-traditional means of representation, such as storyboards and animatics, has value in the development of research to facilitate design (research "for" design), and research to investigate design (research "into" design). The described case-study illustrates the theoretical framework involved in developing representation as a research tool for/into design

REPRESENTATION

Representation is central to architects as they use it to establish dialogues during the design process. Sometimes these dialogues are intimate wanderings through one's thoughts and at other times they are a way of communicating design features to team members and clients. During this dialog, choosing one type of representation significantly influences the outcome of the project, since the choice inevitably enhances one design solution over alternative options (De la Puerta 1997). However diverse and versatile such representations might be, they inevitably rely on architectural educational and professional practices, which are well-rooted in the Cartesian paradigm. It presents physical elements in space, independent from one another, in an exterior world

that can be observed and represented objectively. In this type of space, there is no contemplation of how the multisensory perception or the individual's significance influences the understanding of place. On the contrary, vision becomes a way to acquire objective knowledge, predominant over the other senses. Historically, the architectural discipline reached this stage during the Renaissance. The perspective method with its monocular vision and mathematical structure of depth became the way of representing and knowing about space (Pérez-Gómez and Pelletier 1997). Traced to Plato's concept of space, a third element placed in the chiasm of being and becoming, space has been systematically reduced to its representation. We have to wonder how we can aspire to retrieve the status of presence to architecture (Pérez-Gómez 1994).

In 2005, Nanda and Solovyova argued for the need of a systematic language to depict the experiential knowledge in architectural representation. There is an established graphic language to represent design elements, but no conventions for expressing "sequences of concurrent actions, feelings, and thoughts associated with given behaviour patterns and given users, and the real-time sequential description of multisensory physical environments as experienced in movement" (Thiel 1997, 4). In other words, traditional architectural representation can describe the material nature of designed space but not the sequential experience of quality of place. Or putting it in Waterworth's words (1997), architectural representation describes form rather than content. This lack of notations for experiential knowledge challenges the architect's ability to account for meaningful collective experience of people inhabiting the place during the design process.

In this paper we explore a novel approach to representing a sense of place through storyboarding and animatics. The case study described further in the paper, firstly involved the ethnographic inquiry into the site for a project (traditional to the social sciences) and secondly the translation of the meaning and quality of place as experienced and remembered by the locals via storyboard and animatics. Storyboard and animatics provided a translation of the sense of place to architects and designers by using the the account of life stories of residents of the site and converting them into a visual representation. The key differentiator of between traditional representation and the approach proposed in the case study is the efficacy in capturing the emotive place, or communicating emotional experience, which is tied closely to the remembrance of place.

EMOTION AND THE REMEMBRANCE OF PLACE[2]

Juhani Pallasmaa (1996) accurately noticed that a functional building is not yet architecture. To become architecture, the functional building needs to have both 'atmosphere' (Zumthor 2006) and meaning. Actual experiencing and remembering of the experience are essential for construction of meaning in general (Langer 1980; Gendlin 1962). The meaning of a place is a "qualitative totality of complex nature" (Norberg-Schultz 1980). Naturally, the meaning and understanding of *place* is essential for architectural design (Downing 2000; Lawson 1997). Frances Downing (2000, 83) stated this more emphatically when she wrote, "Design is an act of understanding and pragmatic use of past experience to identify, peruse, and imagine possible futures." Any human experience always occurs in a place and our memory of any experience is always place-specific. Emotional response is intrinsic to place experience and place memory.

Emotions play an important role in perception, understanding of place, and the construction of memory. Tuan (1977, 9) said, "the given cannot be known in itself. What can be known is a reality that is a construct of experience, a creation of feeling and thought." Philosopher Robert Solomon restated the same idea more simply (2007, 1): "We live our lived through emotions, and it is our emotions that give our lives meaning." It is almost impossible to recall a single instance of living that does not involve an emotion. Emotions are central to the meaning of experience because they are expressions of how we understand that experience. People need explanations of important events in their life. Positive explanations help us sustain our belief systems in an orderly manner, and reinforce a coherent sense of personal identity, as well as feelings of personal efficacy. Acceptable explanations satisfy personal and social criteria, even though such explanations may change with time. We have emotional relationships with other beings, things and places. Social relationships are influenced by objects and spatial environments "just as the meanings of objects or environments and people's interaction with them are constituted through social processes and always exist in specific sociocultural contexts" (Luptop 1998, 137).

Rachel McCann (2005) wisely noticed that "place is an empty container for experience." The 'stabilizing persistence' of places housing experience contributes powerfully to their intrinsic memorability. "We might even say that memory is naturally place-oriented or at least place-supported. Moreover, it is itself a place wherein the past can revive and survive." (Casey 1987, 187) Perception of place gathered from senses and accumulated personal experience are an important part of the emotions inspired by a place. The power of place is most fully manifested at the moment when place and body fuse and lose their identities (Casey 1987). When this happens, the expressiveness of place can no longer be contained by simple parameters; the emotional becomes the moving force and the place achieves significance and memorability.

Humans are social beings and we have shared cognition (Resnick 1991). Architects share these conceptions and knowledge of the world, meanings and beliefs. However, some of the major design failures like Le Corbusier's Pruitt-Igoe or buildings rated on The Architecture Hate page (http://www.bbvh.nl/hate/) happen because the architect misunderstands or ignores the values of the culture and the place. Such negative examples of architecture make very clear the importance of the architect connecting to the emotive and meaningful existing place in which architecture is to happen. One way of establishing shared meaning is through understanding values of the culture and space and associating those values with architect's own experience. Casey (1987) calls this *familiarity* and "body memory establishes familiarity that is requisite to the full realization of place memory" (193). In architecture, familiarity allows the embodied understanding of place to be projected into other places by an imaginary inhabitation of them.

One of the key challenges in architecture today is the lack of tools through which an experiential understanding of place can be achieved, communicated and translated into design. We argue here that this understanding and its subsequent communication, is a research directive that feeds both concept and design. In the case of architecture the search for knowledge is anchored both in the external world of brick and mortar and in the internal world of experience and memory. A designer's experiences and values influence the solution to an architectural problem, and thus, different individual provide different solutions to the same problem. This, we argue, is the familiarity that Casey mentions: a highly personalized account of emotive place that we are tapping into as designers during the creative process. We further contend that familiarity with place is a research directive that involves a deep understanding of place from multiple perspectives (user and designer) and adequate, new means of representation would help create more meaningful designs. In this paper we present a case study that describes how design students achieved an "empathetic" familiarity with the site by fusing their own experience with that testified by the locals. The case study also reports the results of using experimental means of representing the emotive place through storyboards and animatics.

STORYBOARDS AND ANIMATICS

Films share with traditional Cartesian representations a monocular vision and the verisimilitude that accompanies the projective method. As an audience, we engage with film easily: have you ever felt, after watching a good movie that you have been to another time and place? You have been seated in the movie theater, quiet and in the dark. However, it feels as if you have been to the place the movie sought to take you, enduring the hero's misfortunes, and rejoicing in his victories. Such a movie feature is relevant to the architect since it provides representations of place which expresses place through the experiencing of the *other*. A case could be made that this *other* is nonetheless mediated by the film director´s interpretation. Similarly, architects also creatively interpret the needs of the other, the prospective user, into their designs. Therefore, film offers a representation that could become helpful to architectural designers in expressing the meaning of emotive places.

Films have been linked to architectural research from several perspectives. The most common practice is introducing film into architectural education for film analysis. There are several studies that center on the graphic codes and formal guidelines for design (Brady 1997; Bridges 1993; Diprose and Hotten 1999; Flanagan 2001; Mark 1997; Rafi 1998; Sabater and Gassull 1992; Temkin 2003) from which the instructor could base the film analysis. Faculty could also lead a discussion based on approaches about architecture as set design (Ramírez 1993; Vila 1997), or resort to pragmatic studio applications aimed at developing architectural projects (Cairns 2007; Knox 2007). Other approaches lead to establishing rules of form generation through relating space and events in film (Tschumi 1996). During film analysis, instructors could also

resort to texts that elaborate upon the emotional experiencing of place portrayed in the movies (Ábalos 2000; Brott 2008; Murphy 2006; Pallasmaa 2008). However, most of these endeavours use films to represent and produce architectural forms from spaces expressed in the films rather than explore the idea of existing emotive place.

Even though we engage in film narrative without any effort, once we look at the film's planning of the scene, we realize how a film's representational codes are distinct from real life perceptions. Such codes involve not only culturally perceived indications (like high-contrast lighting for mystery and murder) but also narrative strategies and, most importantly for us designers, a way of organizing the visual sequence. In film, audience identification, and playing of character's gazes (expressed in the shot/reverse shot montage) are supported by nontrivial codes of manipulation of the image sequences. Understanding the distinction between real life perceptions and the filmic representation of place is fundamental when speculating on the potential of such representations in architecture. Furthermore, film manufacturing and production is highly specialized and time consuming. Architecture requires tools that would allow a designer to experiment with visual narration in a fairly quick production.

Storyboards are drawings produced for planning film scenes in order to establish preliminary views of the narrative sequence. Being fast linear sketches, storyboards are similar to croqui in art and architecture. Storyboard is a sequential mock of a scene permitting to plan for views, framing size, angle, movement and dialogs of the characters. Animatics or animated storyboard produces a qualitative change in perception. Time and movement, which was perceived imaginatively in the storyboard, is now explicit. Animatics, although sketchy, simulates rhythm, montage sequences and transition of the film.

What can storyboard and animatics offer architectural design? They incorporate the concept of scene: a place signified by the emotive perspective of the narrator; the place where design occurs. From this starting point the designer can rethink place from the user's subjectivity (Aroztegui, Garcia and Lopez 2009), and thus provide an alternative representation that can capture the expression of familiarity of emotive place.

Films allow the designer to acknowledge the other (users' social representations and their experiencing of space) which leads to the potential of incorporating the other into the architect's creation. Thus, working with film in architecture could (1) strengthen the importance of the target subject of the architect's work, and (2) allow for the expressing of emotion, a dimension understated in traditional architectural representations. In other words, by focusing on film, architects can focus on the other (the human beings they envision will experience the building or design) should be the center of our profession. Architectural practice should not only involve the knowledge and content belonging to the profession, but also the ways of acknowledging the individual subjectivity of the other, the person and context we address as professionals in order to produce relevant architecture.

Tapping into this subjectivity of the other is a key research directive for design. Just as the sciences strive for pure objectivity, design should strive for multiple subjectivity. The case study below will articulate how a representational tool, storyboarding and animatics, can facilitate an understanding of this multiple subjectivity. This would then become a tool for both research and design, without the formal delineation of the two.

CASE STUDY

The case study involved a two-week exercise led by Carmen Aroztegui in a studio of second year architecture students from *Universidad del Bio Bio*, Chile[3]. The case study explored tools of representation, storyboard and animatics, to investigate and express the sense of place in the early stages of urban context analysis. It used the ethnographic method of collecting life stories of local people that were later represented in storyboard and animatics to transition to the design[4]. The students' assignment was to design a space in Lota, a former mining town in Chile that has been in depression for the past 13 years due to closing of the mine. Lota has strong community identity that evolved over 150 years of mining. In the exercise students had to define the site, the user and the design program. This definition had to emerge from analysis of the place and its needs.

In a traditional approach, designers analyze visible features of the city: buildings and space proportions and human interaction with the place. Sketches typically represent subjectively understood place and events. This traditional approach excludes local people's meaningful construction of place.

Students approached the project by first interviewing Lota's locals. They conducted open-ended interviews prompting for significant events in Lotinos' lives and places where these events happened. Interviews did not collect factual information and focussed on the subjective meanings of events and places. Interviewing became a way of reaching out to other people's feelings and values, a way of understanding Lota as an emotive place.

The emotive place evident from life stories of Lotinos could be typically expressed in a written form of a 'thick description' (Lincoln and Guba 1985), a method common to social sciences. However, the students needed means of representation in which concepts and information could be expressed into images and three-dimensional models.

After the interviews, students brought their experiences back to the class. They were confused and overwhelmed by the generosity of the Lotinos and their willingness to share their stories. From each interview they drew several versions of storyboards. At the end of two weeks, the students presented their animated stories. Their animatics resulted in a wide variety of narrative strategies. Some preferred an intimate but yet documentary-style voice that presented the facts and historic imagery of Lota. Others preferred fictional narratives relying on classic storytelling with an emphasis on the story (Fig. 1). Yet other groups approached the fiction by emphasizing the perceptual impact of the narrated spaces (Fig. 2).

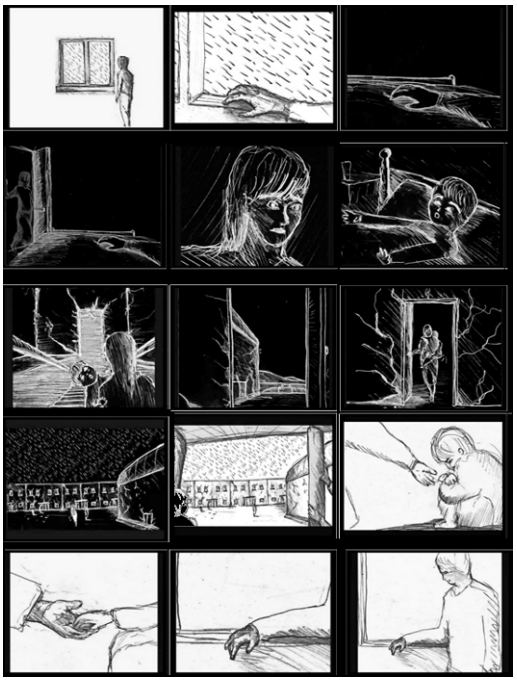

Figure 1: Screen capture of animatics "Terremoto" [Earthquake].

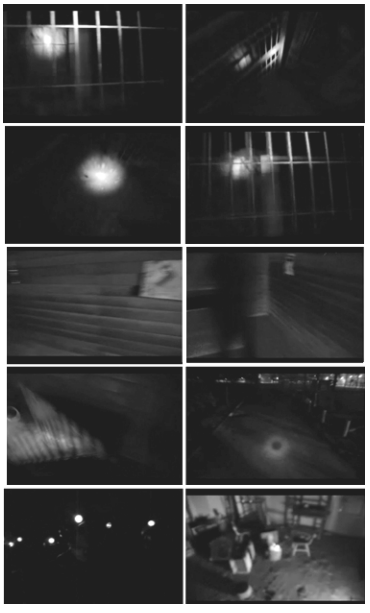

Figure 2: Screen capture of animatics "Abrigo negro" [Dark Shelter].

The approach to programming through ethnographic interviews exposed the traditional approach as pragmatic and need-based. Interviews deeply moved students and let them connect to the place. Not constrained by building functional requirements, the students could set free their designs from measurable and objective preoccupations. Their animatics brought to life fictional voices into imagined places. Events and characters' lives constituted the place.

The storyboard indicated a conceptual shift from usual architectural sketching. In sketching the interpretation of place is largely observational and is interpreted from the subjective perspective of the observer. However, in the case of storyboards it was based on the analysis of life stories. The drawings incorporated the explanation of others' meaning and atmosphere of place. The sequence of drawings recorded significant moments in place and scripted the fictional modes of dwellings. The notation of the moving frame also allowed incorporation of what was outside the frame challenging the totalizing vision of the traditional sketch. However, the storyboards emphasized the narrated event more than the feeling about the place. Since storyboard is schematic, space qualities were communicated in a very limited way, with little light and material definition. Another limitation seen in the studio experience was that students did not utilize the full potential of the storyboard: they did not incorporate the concept of the out-of-the-frame-space. In other words, students did not grasp the expressive potential of designing place accounting for movement (of the camera or the characters) and audio typically implied in the storyboard notation.

The storyboard did encourage the sequential exploration of architectural space through recognition of elements and viewpoints of the place and the events but the animatics was more effective in expressing emotive place and its important features. Inclusion of audio, time and images with color and light variation allowed for an in-depth exploration of the atmosphere of the place and relating to qualities of place and spatial sensations. It is important to note that inclusion of time in animatics did not necessarily entail creation of a continuous special path but revealed how the place is configured through film montage. The students realized the difference between the real time experiencing of place, which implies a continuous visualization and the filmic codes of representation in the montage produced by a fragmentary superposition of visuals. The animatics resulted in persuasive account of lived places. Animatics offered exploration of augmented reality experiences since it expressed both place and time with multiple layers of information richly depicting qualities of place and its significant elements. Understanding and trying to convey the subjective dimension of place in the animatics made the designer connected to the place with his/ her own memorable experiences that were unavoidably evoked by the record of other's life stories. This connection made the place familiar, in an empathetic manner; fusing the person of the design student's self with the other. Students interpreted what they learned about Lota through their own past experiences, memories of place and significant events of their lives, and this construal became a fertile ground for translating the experience into new designs full of meaning.

Below is one example of connection to the place through one student's own memorable experience that inspired the design. The student, Aberto attended the emotional aspect through programming. His group interviewed a Lotino who remembered the daily arrival of his father, home from the mine, through a corridor in his home. This Lotino was a hair stylist and regretted not becoming a miner as his father. He remembered his childhood, when his father would return exhausted from work and how he paid little attention to his children. The boy was eager to welcome his father since it was the only moment of attention he received. The corridor, otherwise understood as an architectural type articulating public versus domestic space, was signified by the memory of this event. The interview incorporated a traditional architectural feature of Lota, the corridors of the popular housing pavilions. The animatics told the story in a flashback expressed in black and white linear drawings and showing in red the main character remembering his childhood (Fig. 3).

After the animatics, Alberto went back to Lota to identify a specific location to develop his project (Fig. 4). He sketched several places and decided to work at the end of one corridor's pavilion. Alberto reformulated Lota´s corridor, its morphology and emotive content, in the context of a daycare. Alberto's design of the daycare was not a place of abandonment but of family reunion, a place of mingling of parents and children (Fig. 5).

Figure 3: Screen capture of animatics "*Hijo de minero" [Son of a Miner].*

Figure 4: Alberto's sketch of the site.

Figure 5: Photo composite of Alberto's project.

his design elaborated upon the remembered emotional content of a traditional architectural feature of Lota, the corridor's pavilions. However, the studio overall experience was over a short time frame, and left much of the potential of exploration of place in storyboards and animatics untapped. One feature that remained unexplored was the fact that some students were uneasy by the uncertainty of the subjective exploration. Although all the students reached the design phase, some students had difficulties dealing with not knowing where this exploration was leading. The analytical process of architecture design gives the *impression* that creativity is a linear flow. Embracing subjectivity upfront was disturbing and students with strong analytical skills did not see much value in the exploration. The experience, however, did not seek a method to replace factual information that typically describes an architectural project rather it looked at ways for the designer to add another qualitative layer intended to capture meaning of the emotive place of others and potentially a conscious process of transforming that sense of place into the 'atmosphere' (Zumthor 2006) of new design.

CLOSING

Representation, when reduced to expressing the visual appearances of space, takes away from place's experiential dimensions. Often designers (and design students) find themselves placed in the crossroads between representing form and eliciting presence. Our paper suggests a tool that can be used by students and professionals alike to articulate this crossroad and make it a launching point for design. The verbal-visual combination exploration of people in place. In the case study, we explored the potential opportunities and shortcomings of representation borrowed from film. We argued that film allowed the expression of emotion in place. Furthermore we suggested that the emotive place was one that accounted not only for the designers' remembrance, but the subjectivity of the "other", the user, who remembers the same place filtered through his or her emotions. The experience aimed at articulating the representation of what students experienced when they were empathetic to users.

Though methods borrowed from other disciplines (social sciences and film) presented certain problems described above, the combination of ethnographic study with storyboarding and animatics definitely allowed students to submerge in the place (design site). They not only understood the values and emotive place of the locals but

also established a connection to the place through their own emotions and memories, familiarity. Conversations with users of the place allowed grasping the true meaning and sense of the place essential for creating architecture. Storyboarding and animatics provide means of prioritizing the collected data and emphasizing the important in a format comprehensive to designers. These representations are useful for translation of meaningful experiences into a building form. Unlike the traditional approach of recording the understanding of place through sketches (necessarily from a specific point of view) storyboard and animatics allow the designer to analyze and experience place through multiple perspectives: that of the other (the user) and fuse it with their own personal narrative. This multiple subjectivity is arguably more objective than a purely personal recording of what a designer "sees". At the same time, it is more experiential and emotive, since it contains not just a recording of the physical environment but of the life stories contained in it.

More investigation of the method is necessary. It would be beneficial to repeat this case study with experienced architects and designers to assess its effectiveness as a tool for design practice vis-à-vis a tool for design education. Previous empirical studies confirm that architects intentionally or unintentionally rely on their own memorable experiences when designing (Downing 1989, 2000; Israel 2003; Solovyova 2010). The need for notations of place quality, and participants "environmental personality" in the experiential environment has been explicitly expressed (Thiel 1997). Currently in architecture there does not exist any strategies for the assessment of qualitative and phenomenological qualities of place, or means for the cognisant transition from comprehension of the sense of place to a newly designed experience. Ethnographic study has been validated as an interpretive naturalistic approach to a subject matter embracing meaning in context (Groat and Wang, 2002). The fast paced world design is often focused exclusively on the functional needs and precedents are analyzed for formal elements to describe the design. Inherited from reductionist understanding of functionalism, modern architecture dismissed subjectivity and enthroned 'objective' scientific methods into our discipline. Architecture became a pre-ordered commission indifferent to the cultural values and emotions of its users. Borrowing from qualitative research to inform the design can help establish a balance.

Ethnographic study captures the meaning and the sense of place but does not offer the means of representation that can allow a designer portray the findings in a format effective for design. Until architecture develops its own research and representation methods borrowing from film seems like a sensible option. It is vital however to adapt borrowed methodologies to the unique context of design. Storyboarding and animatics, within an overall ethnographic approach, allows a means to capture and communicate multiple perspectives in the experience of place. This can be a vital tool for designers. Furthermore, it allows a method of 'digesting' qualitative information common to other social sciences and presenting it in a manner comfortable to designers.

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END NOTES:

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2. This section is based on the Doctoral dissertation of Irina Solovyova (Texas A&M University, 2010)

3. The studio was led by Prof. María Isabel López and Prof. Rodrigo Lagos.

4. A detailed description of the case study can be found in “Storyboarding and Animatics in Architectural Education” by Aroztegui, Garcia and Lopez, 2009.