# WHY HYPOTHETICAL? GROUNDING "THE GUESS" IN EXPERIMENTATION

MARY ANNE BEECHER, PH.D.

UNIVERSITY OF MANITOBA

BEECHER@AD.UMANITOBA.CA

## ABSTRACT

This exploratory paper discusses the advantages and disadvantages of the use of design experimentation to augment students' approaches to speculative projects within the context of professional interior design education. By analysing student-based research as integrated into final comprehensive graduate-level design projects at a major North American university, the potential for experimentation to inform design process is articulated. Although the results of such acts are not always easily assessed within the constraints of real-life criteria, it is optimum for generating innovations in design process and hybrid theoretical frameworks that ultimately challenge the profession to define its boundaries in new ways.

## INTRODUCTION

Accredited interior design programs in North American frequently utilize comprehensive speculative final projects as vehicles for students to demonstrate their ability to integrate their knowledge of design theory with the conventions of design practice. The processes used in the production of the ultimate conjectural projects vary to the extent that research and experimentation is integrated, however. Undergraduate projects are often described as including "research," yet whether or not original investigations or experiments are actually included in students' processes is not treated evenly across institutions, as evidenced by published course descriptions. Using such sources, it has also been determined that students in graduate-level accredited interior design programs are more likely to be expected to conduct more formalized research as part of their approach to design problem-solving, but the expectation is often simply a more rigorous demonstration of the application of evidence-based solutions to speculative design problems.

The purpose of this paper is to analyze the final projects produced by students in one North American masters-level interior design program in order to better understand the type of research being done within the scope of a comprehensive final project and the nature of its general contribution to projects that are hypothetical. This term is used to distinguish investigations that are rooted in conjecture from those that result in tangible or built solutions. This paper is therefore a consideration of the opportunities and limitations of the comprehensive hypothetical or speculative design project as a vehicle for design experimentation and as a site of student-generated design research. While it focuses on interior design education as the defined arena in which to situate the insights offered, it presents an analysis of project-based exploration that is relevant to studies conducted in other places and in other design disciplines.

## LITERATURE AND THEORY

Interest in this topic is grounded in recent considerations of the role of formal research and the design "thesis" in architectural/design education and recent analyses of the scope and execution of the conjectural "capstone" project in North American interior design programs. Salomon argues that North American architectural schools are promoting the replacement of speculative independent studio projects with "faculty-led research studios" in order to apply learning to larger and more publically-relevant topics through modes of study such as design-build projects in order to avoid emerging tendencies for design thesis projects to stray from what might reasonably be considered architectural pursuits that relate to the professional practice of architecture (Salomon 2011). This trend does not seem to be shared in interior design, however, where the emphasis remains on independent comprehensive projects. This may be due to the focus placed on programming in the interior design process (i.e. determining what is needed and whether there is a desirable "fit" between site and project). Interior design educators seem to prefer to provide students with the flexibility to define their own

design problem and to propose solutions from a wide range of options as evidence of their programming skill. Konkel's analysis of students' reflective comments in process books used to document final projects also suggests that students find satisfaction in having the ability to define and meet goals in which they are personally invested (Konkel 2008). Dunn, Ritchie, and Tebbutt reinforce this view by determining that final independent projects allow students to best demonstrate their ability to "synthesize and incorporate" what they have learned in previous educational exercises (Dunn, Ritchie, Tebbutt 2008).

In what ways, then, can the hypothetical project serve as a vehicle for students to heighten their exposure to and experience with research methods and tactics? Jeremy Till's observation that part of academia's role is to help make connections between research conducted within both academic and practice-based settings grounds his assertion that the scope of design-based research might best be understood as impacting three specific areas of investigation: processes (theory, representation, etc.), products (buildings and the systems, materials, construction techniques, etc. associated with them), and performance (social occupation, environmental performance, and the like) (Till 2005). Given that the speculative designs proposed are never physically realised in situ or at full scale, any consideration of their merit and innovation can only be discussed in terms that near the conjectural (i.e. a guess), making their research-based contribution most likely in the realm of exploring the nature and role of process in design.

## DATA AND METHODS

This exploration is based on a review of literature on the subject of the role of comprehensive/capstone projects/design theses in North American interior design curricula and a detailed content analysis of twenty-eight hypothetical final projects produced in one North American graduate-level interior design program between 2007-2012. By sorting projects that incorporate original research by design students from those that are largely resolved using evidence-based strategies, it is possible to propose a framework for understanding what is lost and what is gained when research practices are integrated with hypothetical design projects.

## EVALUATION OF DATA/RESULTS

Of the twenty-eight "practicum projects" completed by first-professional Masters of Interior Design students in the North American program studied, only 30% specifically incorporated original research into the design processes used by the students. Conventional research tactics such as survey, time diary, photo analysis and interview were employed in 10% of the projects to better inform student designers about the specialized cultural or technical requirements of their fictional clientele. More often, material investigations conducted using fabrication or modelling techniques

and movement or object studies formed the impetus for student research that emerged as sources for their conceptual approaches to the planning of spaces or the design of interior features or details.

## DISCUSSION

The term "hypothetical" makes reference to the inference of a guess (often grounded by theory or fact) to frame one's approach to solving a problem. In design education, guesses are inevitably employed by both student and teacher in the consideration of the success of design solutions. Students' hypothetical projects usually respond to conditions that are often presented as real, addressing problems that engage a range of social, economic and cultural conditions; interacting with physical environments that often include an actual building that serves as the proposed hypothetical project site; adopting typological best-practices or invoking environmental, behavioural, and cultural theory; formulating a detailed design programme that acknowledges real-world goals, attributes and constraints; and proposing a spatial solution that includes the documentation of lighting, materiality, furnishing, custom elements, etc. in order to propose a "complete," if fictional, new environment. Yet even the most experienced student unavoidably exceeds her or his knowledge-base when developing a solution for a comprehensive design project, given that most students do not have experiences that allow them to know with certainty the implications of the physical alterations they recommend for the buildings that serve as the sites of their speculative design interventions.

Because the sites and the circumstances that frame each project are unique, instructors who oversee comprehensive student work also base their evaluations of conjectural work on a series of well-grounded guesses; that is, in many instances, the proposed work may or may not meet all structural, functional, legal or other requirements of interior design as it is literally practiced, but it is still often assessed based on some form of pre-established evaluative criteria that approximates reality.

This "stretch" from the realm of what is known to that of conjectural activity is necessary on the part of both students and professors, however, if they are to meet an expectation of being *experimental* in their work. By definition, experiments allow us to test what we know and lead us to discoveries of what we do not yet know (Merriam-Webster's Collegiate Dictionary 1996, 409). Yet without the laboratory setting, a preoccupation with causality, or strictly applied protocols, it is difficult to adapt the language or the mind-set of experimental research to applications such as design solutions that address open-ended questions in only one of what is a seemingly endless set of possible results. The notion of experimental research in relation to the design process is perhaps more effectively tied to the idea of the experiment as "making an attempt at something new or different" or an effort to be original (Collins English

Dictionary - Complete & Unabridged 10th Edition 2009).

The debate about whether or not it is possible to produce originality in design will be left for another discussion. We can assume, however, that attempting to go beyond typical, normal or expected approaches to solving problems is a reasonable expectation for academic activity. Herein resides the inherent advantage of hypotheticality: because all conditions of reality do not have to be applied to a given solution, new possibilities that may or may not be entirely possible are able to be considered. Analysis of student work that has integrated research in the form of creative experimentation linked to theory and tested within rigorous design processes suggests that speculative solutions have the potential to yield ideas that are new or unusual within the context of the problem to be solved.

For instance, for one soeculative project for a new media gallery, "Student A" chose to focus her investigation of haptic experience by creating the "H-Glove," a tight-fitting zip-closure rubber glove with portions of the fingertips, fingers and palm removed. Worn as a second skin, the glove shifted the student's attention from a visual focus to the haptic experiences she encountered "in a new digital universe governed by technology and the dependence on the hand-held device" (Johnson, 2011, 157). By limiting one's ability to feel surfaces to focused targets on the hand, this student discovered techniques for heightening the sensory awareness of occupants that were grounded in her own experience that she then applied to her designed conjectural spaces.



Figure 1: "H-Glove." Kelli Johnson, University of Manitoba, 2011.

In another example, "Student B," whose project explored the nature of "pop-up retail" spaces, investigated the notion of "traces" left by objects that no longer remain in environments by casting small containers in plaster to reveal the spaces they occupy when present.

In a second experiment, this student created a pop-up performance by installing tiny battery-operated light units on various external surfaces in a densely populated neighbourhood. She then tracked their removal or repositioning by pedestrians over time as a means of verifying theories about people's attraction to unexpected elements in the environment. Discoveries made through these two experiences informed this

student's understanding of how to use scale and material in her speculative "guerrilla" retail environments.



Figure 2: Documentation of object traces in plaster. Andrea Sosa Fontaine, University of Manitoba, 2010.

As a third example, "Student C" designed a hypothetical dance education and performance centre by starting with 1:1 scale experiments with delicately patterned laser-cut felt layers and battery-powered LED lights to generate a concept model of a custom lighted carpet that blinks to represent specific dance steps as a means of encouraging particular types of movements through the hypothetical facility's corridors. This student brought her exploration of theories of experiential learning to both her creative experimentation with tangible materials and the conceptual foundation of her speculative designed interiors.
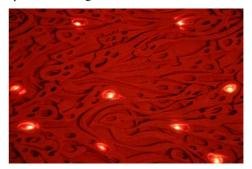


Figure 3: Simulated "carpet" with embedded lighting. Elisa Naesgaard, University of Manitoba, 2011.

In a second series of experiments, this same student also used videography to document movements found in the teachings of historically significant choreographers as lines in space when a fellow student held lights and performed the movements that were studied frame by frame and translated into forms and patterns to be used throughout the interior.

Students A, B, and C all employed qualitative experimental tactics to expand and/or demonstrate their understanding of theories that informed their approaches to their speculative projects. By acting *and* reflecting, tangible experiences helped them draw connections between the known and the suppositional. Without the

limitation of having a real client or similar real-life constraints, each student enjoyed the freedom of following the paths revealed through experimentation to design spaces and surfaces that supported conditions necessary to facilitate experiences for their hypothetical occupants that are grounded in their own research-based discoveries.

CONCLUSION

So what is lost and what is gained through the proposal of speculative solutions to interior design problems as modes of demonstrating students' competency and creativity? One of the deficiencies of this approach is the loss of the ability to evaluate solutions using real-life criteria such as economic constraints. The amount and type of alterations proposed to existing buildings within students' typical comprehensive projects would be profoundly compromised by the application of cost-related limitations. Similarly, the imposition of structural limitations threaten the feasibility of much of what students propose, given that they are not equipped to evaluate the impact of structural alterations to complex architectural sites. Therefore, the removal of "real" limits on what can (or should) be done within the parameters of a comprehensive project creates difficulty for evaluators who wish to measure a student's understanding of such practical concerns.

Likewise, students' ability to build essential problem-solving skills by working within more stringent constraints is also lessened by the use of conjectural propositions. With a broadened range of possible solutions that are not tethered to real limits, developing professionals do not have to seek out the compromises that are so much a part of professional design experiences in order to resolve design ideas that align more clearly with conventional or known approaches.

If we, as educators and researchers, are willing to forego the application of criteria that are strongly rooted in reality, however, there is much to be reaped from the application of experimentation to hypothetical scenarios. The more obvious benefit is that without the imposition of real constraints such as economic limitations, the freedom to explore the potential of relationships evoked by discoveries made when connecting theory to practice exists. And although the designs proposed are not always realistic, many evoke ways of thinking about problems that could be useful models for future applications. This shifting of emphasis from product to process aligns with Till's recommendation to focus design-based research on creating a better understanding of the processes we use, and it offers instructors more tangible grounds for evaluating students' performances. We may sometimes be guessing about the physical or functional success of what is proposed, but we have clear and documentable insights into the ways in which a student arrived at a particular solution.

A more subtle but no less valuable advantage to the use of hypothetical projects is their propensity to result in hybrid conditions that are more difficult to cultivate outside of academia. The hybridity of the ideas that result from design-based research suggests that making interdisciplinary connections is one of the keys to the success of this approach. For instance, students who apply the research tools of other disciplines such as material culture studies or performance studies are presented with opportunities to explore and document objects or movements in ways that yield a new physical and/or graphic understanding of their subject, problem, or source of inspiration. For Student A, the act of wearing the H glove imprints new understandings of haptic experiences as a component of human perception while Student B created the potential for heightened awareness of the ways in which material culture intertwines with human culture by giving tangible form to the spaces and traces that objects impose on their environments. The tacit knowledge presumably acquired by Student C through the manipulation of material and technology raised the potential for her to understand surfaces and finishes in new and more interactive ways. Experiments like these offer students opportunities to give credence to the ways in which they connect theory to practice within the context of conjectural solutions.

Additionally, methodological "balance" in problem solving is generated when experiments result in the physical manifestation of an idea. Such acts provide opportunities for discovery that don't exist when design investigations occur solely using virtual modes of communication. As shown in the examples used here, lessons about materials' properties, the potential of integrating new methods of fabrication, the engagement of the senses, the discovery of new ways of seeing things, the understanding of the body in motion, etc. provide a more tangible articulation of a solution when the "evidence" of such experiments/investigations can be presented alongside a speculative spatial solution.

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