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Retaining the Absent: Cultivating Imagination through 1:1 Drawing

Introduction

The visual conversation between the seen and unseen in drawing should be introduced and cultivated early in the education of an architect. If skill improves through the hand-and-eye connection, can the linking between hand and imagination develop in parallel? Is analog drawing an opportunity to better engage the imagination in early architectural education? Considering imagination as the “retention of the absent” or the ability to retain things not readily seen, the imagination’s relationship to design is undeniable, and its relationship to drawing is essential. (Ferraris and Campillo, 1999) As designers, we are consistently charged with creating anew, developing new ideas, and delineating new spaces; but all of these must connect back to something existing or some known conditions in a meaningful and considered way. The imagined drawing is markedly different from an abstracted process; it reuses the known to generate something new. This paper presents a first-year drawing assignment introducing such a gap into a common prompt. In this project, students work at 1:1, or full scale, to examine and re-imagine a simple tool. They complete the project through observation, survey, collage, and re-drawing, while the process of re-thinking includes intentional gaps for students to create anew.

Imagination in Drawing

Beyond architecture, cultivating imagination is critical to the interdisciplinary work needed around immense, seemingly unsolvable problems. But “[a]ccepting a central role for the imagination does not mean that we abandon standards for assessing the validity and reliability of the knowledge so generated..”(Brown *et al.* 2010) Imagination is valuable for seeing beyond what is known and considered to be possible. Learning imagination is a contradiction; rather, it is an act of cultivating cognitive processes already in place. This position suggests that imaginative acts rely, in part, on known conditions.

There are fundamental ‘gaps’ that must be resolved for individuals to think or act in relation to the world. Resolving these gaps through image making constitutes the self and the world in the same process. It is inherent to the structure of human cognition and action. (Pelaprat and Cole, 2011)

Gaps exist throughout the design process “gap between idea and drawing is where unanticipated events occur, eliciting new possibilities in the exchange between drafter and drawing; a site of exception where ordinary rules are suspended.” (Emmons, 2019) The physical act of drawing, and the use of drawing to fill these gaps is an

essential skill. The filling of these gaps implies an interdependency on seemingly disparate parts with one another.

Drawing is an opportunity to enact and build one's practice of imagination alongside other, more common, techniques. Full-scale drawing provides a direct physical and figurative connection between the known and the imagined. The practice of 1:1, or full-scale drawing, is well documented in architecture. Full-scale drawings were relied upon from Antiquity to the Baroque in the form of floor tracings; by testing the validity of arches or other details, for instance, in the location of their future construction. (Courtenay, 1997, Calvo-López *et al.*, 2016) Often, the tracery drawings were incomplete and reinforced the notion of a gap, modeling enough known information to imagine the in-between. In this case, imagination implies a process which builds on facts to create anew. In relationship to art, architecture, and building, John Ruskin wrote extensively on the imagination. These theories were deeply connected to the use and representation of nature to create anew. Rather than gaps, Ruskin referenced threads. (Ruskin *et al.*, 2013) The 'threads' of nature, the facts observed by the artist, are woven into a pattern by the imagination." (Sprinker, 1979) Both theories suggest the re-use of existing elements, referential and in some ways deferential to the known. Understanding these elements at full scale and observing and documenting them with great detail and clarity contributes to the imagination.

This paper suggests 1:1 analog drawing as an opportunity in beginning design education to encourage imaginative solutions while maintaining the importance of foundational skill-building. In any drawing assignment, there are likely a range of objectives, such as building technical ability alongside the grasping of key concepts. An example is the technique of drafting construction lines, and varied line weights reinforce the concept of orthographic projection and depth in two dimensions. This pairing could successfully help a student test the idea, but without a deeper connection to one's perception or imagination, this approach can quickly become rout practice. Absent a gap to fill, the exercise is to copy the example rather than to project possibilities.

Methods

This paper presents an approach to incorporating the imagination in a structured manner for foundation drawing. Surveying the existing, testing imagined conditions, and then defining those decisions to reveal the imagined as a new artifact of the student's creation. This assignment is part of a first-year architectural representation course in an undergraduate program. The course enrolls approximately 40-50 students per year. Each student must take this course concurrent with their design studios. While the skillsets taught in the representation course support the studios, they are not directly linked to any design project. This structure differs across institutions but is an important consideration when incorporating an imaginative gap into an existing set of assignments.

Analog drafting is far less common in architectural education today and rarely used in professional practice. Once perfected over many years, hand drafting is now considered a novelty or curious component of curricula. Yet the importance of a

connection between hand and mind is not as readily contested. Physical making in the form of models is more commonly used to reinforce this value. However, physical models most often represent scaled forms of something else and are less commonly seen at full scale in a beginning design setting. While the work presented here utilizes hand drafting as a technique, the implementation of it at full scale is paramount.

Survey and Observation

As a first step, students survey a small gadget or tool such as a can opener or garlic press. This common prompt has many benefits as a starting point. It generates the need to resolve problems of geometry, scale, and projection. Across the class, ten tools are available to allow for shared knowledge and variation in the outcomes. As a first drafting assignment, students surveyed conditions, becoming familiar with their tool. This portion of the assignment relies on careful study, observation, and documentation. Tools are drawn at full scale and require more nuanced drawing techniques, such as applying a French curve to a unique form of the tool's handle. The rigor of this portion of the assignment comes from the student's ability to survey (Fig. 01) the gadget and translate those dimensions directly to the page.

The drafted form includes a top view and two side views as baseline documentation. Orthographic projection is a common representation technique and cornerstone of architectural documentation. The spatial and dimensional relationships between views are essential to this drawing type.

Just as marks drawn on a page point or refer to something that transcends that physical substrate— those marks might make out, or indicate, the face of a person, or the relative location of places on a map, for example— so too is the mental image referential. (Gosetti-Ferencei, 2018)

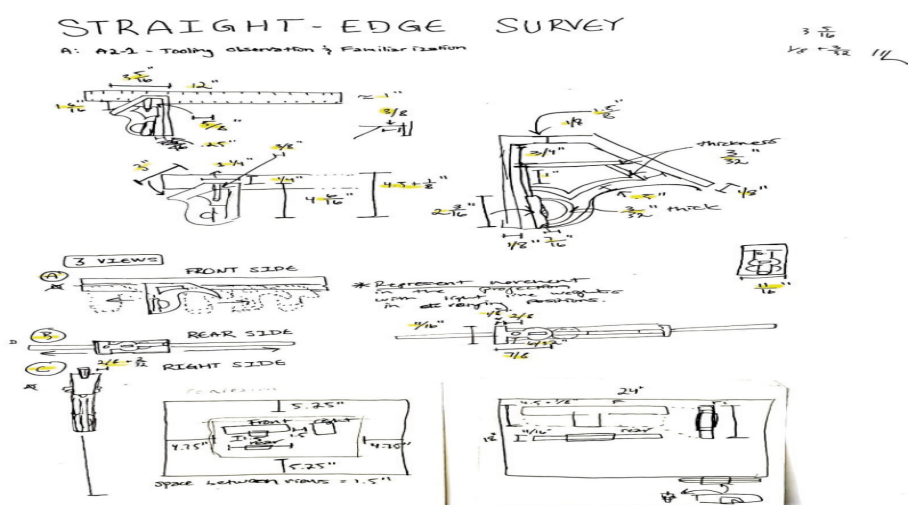


Fig. 01. Example of Student Survey Drawing.
 Source: Student Work from Author, by Junior Rodriguez.

With a 1:1, or full-scale, representation, the view can be easily seen by rotating the object in one's hand and testing the drawing against reality. For students, this leap (projection or flattening) introduces an element of imagination by simply creating an analog or reference to the object.

Collage as Dissociation

As a second step, students rearrange distinct portions of the analog survey drawing from the views and details. They remake, or collage, these disparate parts into a “new tool” of which they imagine a new scale, form, and function (Fig. 02). This step evokes the exquisite corpse, or *cadavre exquis*, method and is shared with students as a reference. (Schneider, 1948) Digital copies of the original drawing are printed, cropped, and physically rearranged to test a range of options. An important detail in this step is the requirement of a literal gap between these pieces. Separating the cropped portions of the original drawing help distance them from their previous use and also allow space for interpolation between rectilinear and curved forms. The gap also proved to be the most difficult variable for students; reinforcing its critical relationship to the imaginative process. In some cases, a ½” distance for creating anew proved difficult but nonetheless important to engage. This second step of three

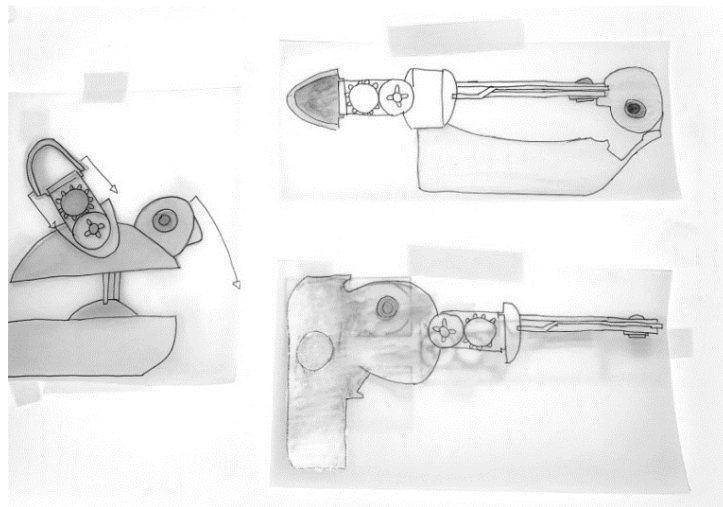


Fig. 02. Example of Collage Drawing Iterations.

Source: Student Work from Author, by Berlinda Alfred.

in the drawing project also defines authorship in the students' work. It provides a basis for critique that is not reliant on direct comparisons. The differences yielded here also provide the opportunity for dialogue on technical skills through what the student imagines or has yet to define in the new tool.

In these intermediate drawings, any indication of depth is not readily apparent. This lack of depth requires students to return to the original tool. It requires an assessment of its materiality, connections, and depth. Because the drawings at this

step are at a similar scale to the original tool so one can infer a relationship between the original and the imagined. For instance, if a plastic handle originally wrapped a metal bar, the imagined solution would reflect that relationship but not copy it exactly. Those relationships are related and translated but often not reflected as duplicates from the original. The process of collage was a form of remaking that dissociated students from the original but left enough residue to imagine the possibilities of the new form.

Making it Real, Again

This sets up the last and final gap of the assignment process. Devoid of definition, rendering the drawing reveals unseen layers, function, movement, solid and void. This phase allows for malleability in what they imagined but also room to define what was not fully considered in the first iteration. Ownership over these distinctions reverses accountability in the project and creates flexibility in solving the problem.

Concurrently, other interpretations of their tool unfold simultaneously around the class, exposing the possibilities of resolution developed by their peers—preferencing conversation over comparison. The rendering process also forces students to define any vague understanding of the unresolved spaces in the previous iteration (Fig. 03). In this last step, lines become spaces and layers, making that which was imagined—seen.

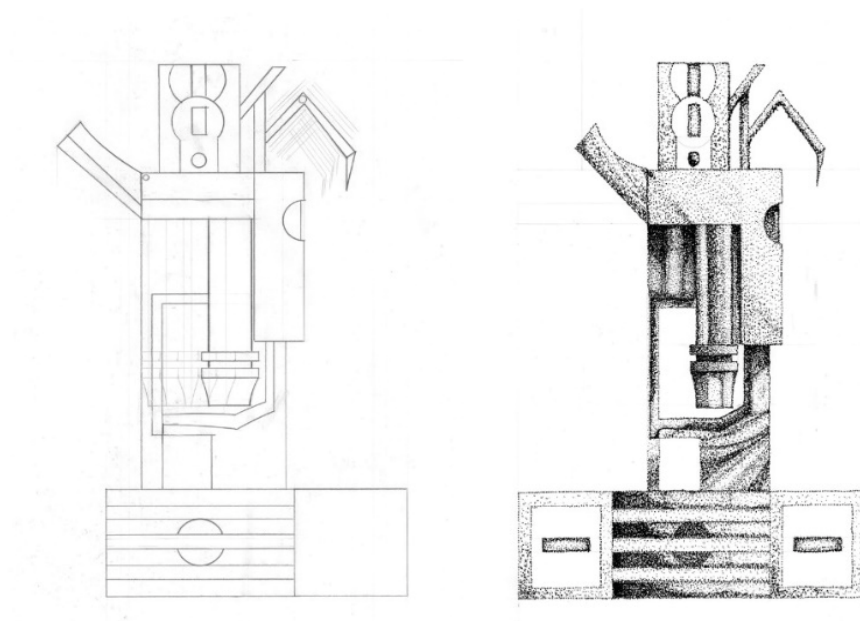


Fig. 03. Example of Line and Rendered Drawings.
Source: Student Work from Author, by Junior Rodriguez.

The value of revealing this to the beginning design student is two-fold. First, they can clearly see their own ideas, but they are also exposed to the possibilities their peers have also achieved. Next, rendering techniques are suggested, pencil hatching and stippling with a pen. Students are encouraged to select the rendering technique by revisiting the original tool's material qualities. A reflective material, smooth surface, or texture is re-considered in this final step. In the newly imagined tool, the application of material is suggestive of a new function and form. While many students defined this use or branded their object earlier on, the rendering of its form can provide clarity in this regard. The value of naming their inventions was an indispensable component of the process to aid in their final work and decision-making. The rendering of the object made the once dissociated and then re-imagined, now real once again.

Conclusions

This project serves as a case study for incorporating imaginative processes into future “supporting” coursework for beginning design education. This method could be tested in other forms, such as physical modeling, but is presented here through analog drafting. The presented example yielded a wide range of outcomes among the students relative to the novelty of their newly imagined tool. The conclusions here outline short-term outcomes, whereas future work could assess the longer-term impact on design problem-solving and collaboration skills.

The assignment is structured to repeat skills in different forms. For instance, the basics of hand drafting are incorporated twice with an imaginative “gap” between them (Fig. 04). This would be ideal in all cases and was not feasible for the rendering portion of the project. For some students, a second iteration would have helped clarify areas that remained spatially unclear after completing the project.

The use of a figurative “gap” or space to create something new was most apparent in its literal application. The most potential came when confronted with an empty space to connect to parts. This step helped scaffold the creation of something new for a class that doesn't allow the same latitude of creative testing that a design studio would. It combined interpolation and imagination, making it attainable for all students. The more difficult leap was recognizing space and depth in the reconfigured tool, and defining what was in front or beyond tested their reading of two-dimensional space and orthographic projection. This step flips their role as author and viewer over the span of the project.

The tool is a common problem for early drawing projects. The project outlined here uses this prompt in a new way through subtle changes in the process. Reflecting on these adjustments suggests that building on observation-based drawing assignments could yield similar results. Seeing, remaking, and, most importantly, providing gaps for invention and imagination are essential components of the process.



Fig. 04. Process Diagram of Parallel Skills, Concepts, and Imagination

Source: *By Author.*

Regardless of the subject matter or students' prior skills, this methodology aims to intentionally and specifically engage the imagination parallel to technical or skill-based learning objectives. The imagination cuts through many of the more common 21st-century skills necessary for students to engage in their education, such as critical thinking and collaboration. Cultivating imagination could support empathic design solutions by more nimble designers and is a powerful tool that students can use as readily as others we teach to solve problems far beyond architectural drawing classes.

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Bibliography

- Brown, V.A., Harris, J.A. and Russell, J.Y. (2010) *Tackling wicked problems through the transdisciplinary imagination*. London ; Earthscan.
- Calvo-López, J., Taín-Guzmán, M. and Camiruaga-Osés, I. (2016) ‘The eighteenth-century full-scale tracings in the church of Saint Clare in Santiago de Compostela: execution drawings or design sketches?’, *Construction History*, 31(2), pp. 81–106.
- Emmons, P. (2019) *Drawing Imagining Building: Embodiment in Architectural Design Practices*. Milton: Taylor & Francis Group.
- Ferraris, M. and Campillo, F. (1999) *La Imagination*. Boadilla del Monte: Visor Distribuciones, S.A.
- Gosetti-Ferencei, J.A. (2018) ‘Envisioning in the Mind’s Eye, and Other Imagings’, in *The Life of Imagination*. Columbia University Press (Revealing and Making the World), pp. 185–216.
- Pelaprat, E. and Cole, M. (2011) “‘Minding the Gap’: Imagination, Creativity and Human Cognition’, *Integrative Psychological and Behavioral Science*, 45(4), pp. 397–418.
- Ruskin, J., Wedderburn, A., and Cook, E.T., 2013. *The Works of John Ruskin: Volume 4, Modern Painters II*. Cambridge University Press.
- Schneider, P. (1948) ‘A Note on the Exquisite Corpse’, *Yale French Studies*, (2), pp. 85–92.
- Sprinker, M., 1979. Ruskin on the Imagination. *Studies in Romanticism*, 18 (1), 115–139.