BETWEEN DISEGNO & DESIGN THINKING JONATHAN POWERS

XII

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The phrase *design thinking* has in recent years risen to prominence in business parlance, where it means a “proven and repeatable problem-solving protocol that any business or profession can employ to achieve extraordinary results.”¹ Vague promises of “extraordinary results” for employing a simple “protocol” accessible to “any business or profession” would seem to belong more to the domains of charlatanry and late-night infomercials than to serious thinking or craft. Yet homologous characterizations of design thinking are current in many mainstream publications—even in the pages of the *Harvard Business Review*.² Can design thinking (or indeed *any* kind of thinking) really be as simple and effective as promised? Whatever the prestige of its promulgators, I expect that this oversimplification of design thinking would meet with a certain coolness (if not outright contempt) from most professional designers and architects, who have typically undertaken years of strenuous study and training in a broad palette of knowledge and skills.³ If a foolproof, rinse-and-repeat method could guarantee fruitful design processes and desirable design results for anyone and everyone, there would be no need to train designers. A glance at any design curriculum, however, suggests that advanced practitioners hold that mastering the intricacies of design demands supple intelligence, broad competence, and intense diligence. And even if anyone and everyone can design at some level, skill and experience make a marked difference. On the other hand, I suspect that most architects and designers would be pleased to have the public—from which the overwhelming preponderance of clients emerge—possess a first-order sense that what designers do is comprehensible, versatile, and effective. (And I would contend that design thinking does indeed possess these traits.) A basically honest and positive oversimplification of design thinking, in other words, would seem desirable not only for designers, but also for those who stand to benefit from the value that design thinking can add to products, processes, and—why not just say it—all human endeavours. The modest philosophical analysis that follows does not aim either to debunk or defend any particular oversimplification of design thinking, but rather to suggest

1 Fast Company Staff, ‘Design Thinking ... What is That?’, *FastCompany* <https://www.fastcompany.com/919258/design-thinking-what>, [accessed 12 December 2017]

2 Brown, Tim. ‘Design Thinking’, *Harvard Business Review*, 2008, <<https://hbr.org/2008/06/design-thinking>>

3 I presume that the reader will grant without serious reservations the reciprocal relevance of design and architecture, though with the possible caveat that architecture be recognized not as the privileged center of design practice, but rather as one “design discipline” among many. See Rodgers, Paul A., and Craig Bremner, ‘The Concept of the Design Discipline’, *Dialectic* 1.1 (2016): 19–38. <<http://dx.doi.org/10.3998/dialectic.14932326.0001.104>>

that the basic concept of design thinking is both robust enough to support oversimplification and important enough to deserve the broader audience that oversimplification affords.

BETWEEN *DESIGN* AND *DRAWING*

The English word *design*—as well as all of its cognates in other modern European languages—draws its principal meanings from the Italian word *disegno*, which in turn descends from the Latin verb *designare*, which means “to mark out,” “to indicate,” or quite simply, “to designate.” Historically speaking, the Italian word *disegno* becomes interesting for our purposes in the 14th and 15th centuries, when in the artisanal workshops in Florence it came to refer to an ensemble of practices by which a plan or intention for an artefact was generated, elaborated, and communicated. The most distinctive of these practices were—and still are—the construction of models and the making of drawings. Indeed, the latter of these practices remains the principal meaning of the word *disegno*, which is why the most common translation of *disegno* into modern English is simply “drawing.” There are, of course, significant differences between the meanings of *disegno* and *drawing*. (For reasons on concision I will focus on English here, though other modern European languages have metabolized the meanings of *disegno* in ways that preserve the most important ambiguities and tensions present in the 15th century Italian word.⁴) I would like to highlight three of these differences.

First, the most basic and dispositive of difference between *disegnare* and *drawing* is that fact that the former is a semantic verb, while *to draw* is a manual verb. To feel how trenchant this difference is, we might imagine coming upon a draughtsman working at his table. We ask him, “What are you doing?” And he replies, without the slightest irony, “Designating.” Such an answer would capture a large part of what a Renaissance artist and his clients would have meant by the word “*disegno*.” The bedrock sense of *design* is not *technical*—in the sense of knowing how to make things—but rather *communicative*. At the

4 Modern Italian, for example, naturally preserves almost all of the ambiguousness of the 15th century meaning—manual and semantic senses are thoroughly conflated. Modern German possesses *das Design*, but it is a thin noun reflecting a narrow slice of the modern English word; yet the German verb *zeichnen* (“to draw”) is a straightforwardly semantic verb, originally meaning “to symbolize” or “to show”—and the German verb *entwerfen* (“to design”) traces its ancestry back to terms meaning “to cast (throw)” and “to warp.” The modern French verb *dessiner* means principally “to draw,” with the more semantic senses of *disegno* now subsumed under more rationalistic verbs like *concevoir* (“to conceive”) and *élaborer* (“to elaborate”). The French noun *projet* and the English noun *project*—both descended from ancestors meaning “to throw” and thereby aligning with *entwerfen*—can both stand in for the English noun *design*. In most modern European languages, the overall pattern of semantic alliances and antimonies among the meanings compassed by *disegno* exhibits remarkable consistency.

same time, *design* remains ineluctably and thoroughly factual: Design is about *making* (crafting, ordering, assembling) artefacts that signify (point beyond themselves). In the word *disegno*, the manual act of making marks on a surface and the semantic act of using one thing to indicate another are thoroughly conflated, but with priority given to the semantic senses and uses. The closest analogue to *disegno*, in terms of its role in its semantic ecosystem, thus turns out to be *writing*, for both practices refer to the making of material traces that point beyond themselves.

A second difference between *disegno* and *drawing* is that the former's essentially semantic character gives it a much broader compass than marks on a surface. In 15th century Italy, the noun *disegno* was often used to refer to a drawing, but it might also refer to a model. The phrasal noun *disegno di legno proportionate*, for example, meant not a scale drawing in wood, but "a scaled wooden model." Even a model large enough to enter bodily—such as Filippo Brunelleschi's (1377–1446) demonstration model for the dome of the Florence Cathedral—could be termed a *disegno*. This breadth of scope derives from the fact that *designo* entailed an essentially semantic activity rather than a strictly technical one. While we may presume that Brunelleschi constructed his model principally in order to demonstrate or communicate an idea, this does not mean that his model did not directly address technical and factual issues. I am arguing here that technical issues have always been unembarrassed subordinates in design, yielding precedence to questions of intention and communication, because it is manifestly *intentions*—and not technical challenges—that propel design processes forward. Anyone who has actually engaged in designing something understands something of the difficulties involved in holding together the evolving intentions that motivate a design process and the series of partial draughts that culminate in the final product. This basic tension between motivating intentions and technical constraints has always characterized our understanding of design. Contemporary thinking along precisely these lines has even led to the suggestion that *rhetoric* (which would include not only speech-making, but also conversation and verbal composition in general) be classed as a "design art."⁵ We would, I submit, readily accept that verbal products (reports, narratives, meeting minutes, etc.) can often effectively articulate and elaborate important aspects of designs, just as drawings and models do.

A third difference between *disegno* and *drawing* is that the former refers to a form of cognition as well as to a mechanical or manual activity. *Disegno* entails the making of artefacts, and so it is undoubtedly a craft (*techné*) or technical activity in many important aspects.

5 See David S. Kaufer, and Brian S. Butler, *Rhetoric and the Arts of Design* (Mahwah, N.J.: L. Erlbaum Associates, 1996), 28ff.

But because the products of *disegno* self-consciously aim to articulate, communicate, and inform human intentions, *disegno* must also mean a specific and quite subtle form of cognition. Renaissance artisans self-consciously spoke of *disegno nella mente*—“drawing in the mind”—as a high-level skill related to but distinguishable from drawing with one’s hand. The basic link between the two is that manual *disegno* and mental *disegno* were understood to activate and educate the same form of cognition. The apprentice first learns how to draw with his hand, but the practice of this manual skill demands that he exercise his mental capacity to *designate*—to hypothesize, elaborate, and conjecture. Becoming skilled at *disegno* means becoming skilled at imagining and evaluating the counterfactual possibilities inherent in the subjects of one’s *disegni*. At bottom, *disegno* comprises a complex of skills that are intimately (and often awkwardly) entangled with the basic human capacities of forethought and communication. *Disegno* entails, in short, the co-crafting of artefacts and the intentions that motivate their production. Since the making of artefacts and the shaping of intentions occur in parallel, what is at stake in a design process is not only the final product, but also the characteristic mode of cognition—“design thinking”—that actuates such a process, and which improves with practice and reflection.

DESIGN AS A PRACTICE

The amphibious nature of Renaissance *disegno*—simultaneously manual craft and form of cognition—exhibits a remarkable historical persistence. A simple juxtaposition of quotations will serve to indicate the robustness and coherence of *design thinking* as a basic concept. First, a pair of quotations pulled from the two writers who may be said, respectively, to have opened and closed the epoch that established the basic meaning of *disegno* that we have inherited. Cennino Cennini’s so-called *Il libro dell’arte* (after 1396) is accepted as the earliest craft manual of the Renaissance. In it, Cennini asks, “Do you know what will happen to you, practising drawing [*il disegnare*] with a pen? You will become expert, practised, and capable of much *disegno* within your head.”⁶ Practise with a pen leads to skill drawing in your head. One hundred and fifty years later, Giorgio Vasari’s *Lives of the Most Excellent Painters, Sculptors, and Architects* (1568) effectively closes and catalogues the Renaissance as an artistic revolution. Based on his research, Vasari recommends to aspiring artists that “the best thing is to draw men and women from the nude and thus fix in the memory by constant exercise the muscles of the

6 Cennino d’Andrea Cennini, *Il libro dell’arte: o, Trattato della pittura*, originally composed a. 1396., rpt. eds. Gaetano and Carlo Milanese (Firenze: Felice Le Monnier, 1859), 9 = ch. XIII. My translation.

torso, back, legs, arms, and knees, with the bones underneath. Then one may be sure that through much study attitudes in any position can be drawn by help of the imagination without one's having the living forms in view."⁷ Attentive practice drawing human nudes will result in an analytical understanding of the specific geometry of the human body, which will underwrite a synthetic capacity of the imagination to compose human figures in the mind. The years separating these observations changed nothing of the basic sense, with the exception of nominating the imagination as the specific mental faculty educated by the practice of manual *disegno*. (I will return to the imagination in a moment.)

To this characteristically Renaissance attitude toward *disegno* I would like to compare a remark made by Francis D. K. Ching, one of our own epoch's recognized masters of drawing. The following text, which concerns the value of drawing as a catalyst to creative thinking, is drawn from the preface of one of Ching's books. In fact, the quote is posted on Amazon.com's website as the book's summary blurb. Such positioning tells us that this passage represents uncontroversial received wisdom about the value of drawing as an artistic practice. Ching asserts that:

[d]rawing cannot be detached from seeing and thinking about the fundamental nature of the subject matter being represented. The knowledge and understanding gained through drawing from life directly enhances our ability to draw from the imagination. Just as thought can be put into words, ideas can be made visible in a drawing to promote visual thinking and further stimulate the imagination. Once what is seen or imagined is made visible in a drawing, the image takes on a life of its own and communicates graphically.⁸

True to the original artisanal notion of *disegno*, Ching represents drawing as a semantic act—analogous to writing—that grapples with the “fundamental nature” of matters, renders “ideas” visible, and operates communicatively. Also like his predecessors, Ching presents drawing as a *practice*. Every act of drawing interacts with the artist's thinking about what she's drawing; and further, practising drawing on an ongoing basis enhances the practitioner's overall aptitude for thinking about ideas in general (insofar as they can be drawn). We are nowadays accustomed to defining design in terms of its material products. And there is, of course, nothing wrong with thinking about design along craft lines—which is to say, in terms of technics. But design is *also* a

7 Giorgio Vasari, *Vasari on Technique*, trans. by L. S. Maclehorse, revised edition (New York: Dover, 1960), 210, quoted in van den Akker, Paul, “‘Out of Disegno Invention is Born’ – Drawing a Convincing Figure in Renaissance Italian Art,” *Argumentation* 7, 1 (1993): 63. <<https://doi.org/10.1007/BF00735042>>

8 Francis D. K. Ching, *Drawing: A Creative Process* (New York, NY: John Wiley & Sons, 1989), quoted in <https://www.amazon.com/Drawing-Creative-Francis-D-Ching/dp/047128968X>.

practice, by which I mean simply that the designer herself changes—as a designer specifically and as a thinker generally—as a result of her practice. Since there must be designers in order for there to be designs, we may assert—invoking the traditional Aristotelian distinction—that the fact that design is a practice (or *praxis*) is at least as important as the fact that design comprises crafts (or *technai*). A final point of continuity, to which I will return presently, is the nomination of the *imagination* as the proper psychological locus of design thinking.

IMAGINATION AND DESIGN KNOWLEDGE

One noteworthy difference between our Renaissance authors and Ching is that the latter characterizes the thinking catalysed by drawing as *visual*. But this, I would suggest, is a potential pitfall. The association in our thinking between design and vision depends primarily upon our lexical habit of using visual metaphors and cognate terms to qualify the kind of cognition that underwrites design practice. *Disegno*—and so, I would argue, contemporary design thinking—activates and educates essentially communicative and conjectural thinking, not strictly “visual thinking.” As we saw above, words and objects (the latter of which may be chosen for haptic rather than visual reasons) may be metabolized into design processes as easily as pictures are. For a variety of reasons, we habitually formulate our verbal accounts of the characteristic powers of conjectural thinking by means of an analogy to the characteristic powers of sight—favouring words such as “foresight,” “visionary,” “prospect,” “point of view,” and so on. Although pictures are visible, they need not represent anything that the drawer actually sees or has seen—or even that anyone could ever see, even in principle. Design thinking, when used in a conjectural or speculative mode, has the power to make absent things seem present, at least to some extent. We can think and even, in a limited form, experience objects, places, and events that do not exist or are not present. When the artisans of the Renaissance set out to explain how an artisan thinks while he works, they had to adapt general psychological terms to explain the specific character of artisanal cognition. In classical thought broadly, the primary role of the imagination was to effect the transposition of sensory impressions into mental ideas or concepts. It was therefore directly connected to memory, and had the paradoxical power of making absent things seem present.⁹ Renaissance artisans thus nominated the imagination as the proper faculty of *disegno*.

9 On the imagination in classical thought generally, see Murray Wright Bundy, *The Theory of Imagination in Classical and Mediaeval Thought*, University of Illinois Studies in Language and Literature, 12, vols. 2–3 (Urbana: University of Illinois Press, 1927) and Gerard Watson, *Phantasia in Classical Thought* (Galway: Galway University Press, 1988).

As the psychological site of *disegno*, the imagination became much more than just a mental photo album that collected the diaphanous afterimages of perception; it became a partially effective substitute for experience. Just as literature has the power to teach us moral lessons because it helps us to imagine undergoing the experiences described in a narrative, so design thinking has the power to coordinate productive activity because pictures (in the mind, on paper, on screens) can underwrite our imaging not only what it might be like to use objects, inhabit places, experience events, but also how we might actually make such things. We might then usefully conceive *design thinking* as something like a disciplined practice of the imagination that can, under certain conditions, substitute for experience. Thus the knowledge produced by what we call design processes—what Michael Jemtrud and Keith Ragsdale have called “fabricative knowledge”—is neither theoretical nor technical, but essentially *experiential*.¹⁰ Where theoretical knowledge clarifies the world and technical knowledge helps achieve our goals, experiential knowledge enriches our awareness of what is actually happening to us, around us, and as a result of our actions. If the knowledge that design processes produce is indeed experiential, prototyping (by which I mean the serial production of models or draughts that are self-consciously partial) then appears as a method for disciplining the vagaries of experiential learning. Prototyping—which is perhaps design technique par excellence—aims to produce a kind of incrementally specified experience. We lay out a broad and vague intention, produce a drawing or draught or model, then adjust the intention and produce another drawing, draught, or model, inching toward a completed product. To put it differently, we could say that prototyping intensifies the educative effects of fabricative experience by deliberately focusing it into a preselected channel. We deploy drawings, draughts, and models with the intention of gaining new knowledge—often quite specific—about our intentions, the final result, and the choreography that will be required to materialize it. We may speculate that Brunelleschi built a scale model of the dome of Santa Maria del Fiore not only to communicate his intentions for the structure, but also to prototype his ingenious herringbone coursing, which allowed the dome to be built without the scaffolding that was typically required at the time when constructing domes.

I have argued that, notwithstanding some important and interesting discontinuities, there are impressively strong continuities between the semantic ecosystem that nourished the Renaissance notion of *disegno* and the one that nourishes the contemporary concept

10 Michael Jemtrud and Keith Ragsdale, “Three Little Shacks: An Inquiry in Technics, Tool-making, and Invention,” in *Rethinking Comprehensive Design: Speculative Counterculture*, ed. by Ning Gu et al. (Hong Kong: Association for Computer-Aided Architectural Design Research in Asia, 2014), 883–92.

of *design thinking*. I would suggest that the current rise in the prominence of design thinking is underpinned in part by the fact that it may be usefully oversimplified in order to afford an entry into the subject for non-specialists. The strong linkages between our inherited concept of design and the philosophically robust notions of practice, imagination, and experience provide useful indications as to how any discussion of design thinking might be fruitfully deepened.