2.1 Drawing and writing: the intersection

Professor Stephen Farthing

The point of this exploration of writing's relationship with drawing is neither to celebrate the ease with which the hand can move between the two, nor simply to register their differences and similarities, but to better understand how they function as methods of 2D representation, and then use that knowledge to develop our understanding of literacy.

My interest in the relationship between writing and drawing emerged when, about seven years ago, I started work on constructing a definition of drawing.

Having found that there were some remarkable similarities, not so much in the way texts and drawn images were normally constructed, but in their purpose, I began to suspect that in both cases their objective was the sharing of multidimensional information as comprehensible 2D matter.

I thought drawing must be the more direct of the two because it achieved its goal by making one-to-one translations of its subjects. Writing, on the other hand, appeared to take the less direct route by visually representing verbal explanations of its subjects. Writing's two layers of removal led me to the assumption that it was probably the more complex. Within literate societies, however, the majority of us have so successfully embodied the ability not only to translate the sound of the human voice into symbols, but to give voice to those symbols, that by the onset of adolescence, drawing ¬– the mean of 2D representation we so intuitively embraced – ceases to be our most direct and reliable form of 2D representation and communication.

So it was, with this sense of drawing in hand, that I proceeded beyond definitions to construct a taxonomy of drawing.

Within the taxonomy, I visualise drawing as one of three kingdoms contained within the domain of 2D representation. Its domain partners are notation and writing. Within the kingdom of drawing I identified: two divisions, conceptual and pictorial; two orders, systemic and improvised; two classes, measured and estimated; and two families, mechanical and freehand.

I worked with the assumption that, once a draftsman or draftswoman had defined the type of drawing they intended making (which I assumed would be driven by the purpose of the drawing), they would, by default, define their relationship with the driving systems I have just outlined – and then, also by default – position their drawing within one of the six genera that I believe parent all drawings. These are: the tracing, the diagrammatic, the mapping, the scoring, conceptual sketches and technical solutions.

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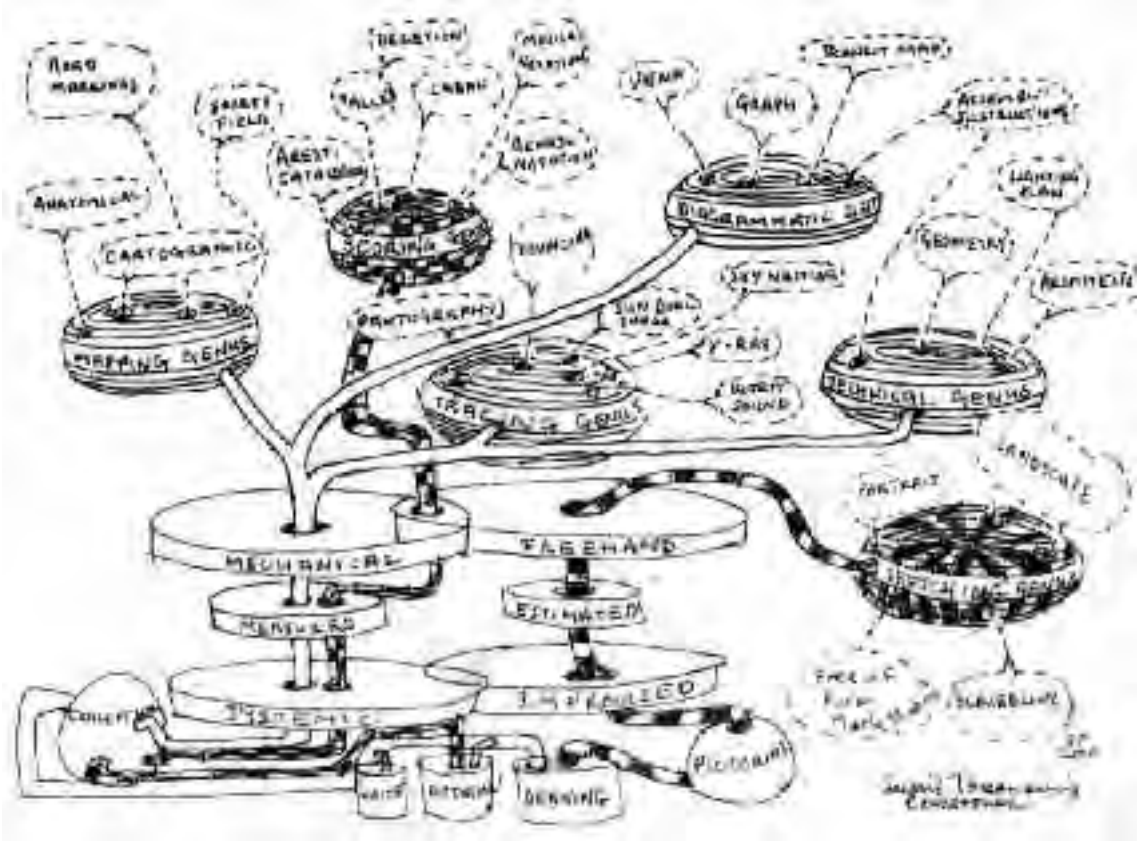
Although I mapped this taxonomy as a precise set of relationships, it is important to remember that drawing is not subject to the laws of nature and, as a result, is likely to take advantage of opportunities for inter-species procreation. So the six genera I am about to outline must be seen as capable of hybridisation.

The tracing genus visually tracks movement and transfers sets of information to new surfaces. Examples include: the sundial's image, pantographs, air traffic control screens and scanning. The diagrammatic represents values and relationships as schematic images. Examples might include: histograms, tree diagrams, graphs and flat-pack assembly instructions. The mapping aims to accurately measure events and relationships, and records them as a terrain or surface. Examples might include: anatomical drawings, maps and maritime charts. The scoring genus represents music and movement symbolically. Examples include: musical scores and labanotation. The conceptual sketches genus is usually informal, speculative, pictorially driven and geared towards rendering things seen,



Stephen Farthing. *Drawing Drawn, A Sketch for the Second Taxonomy of Drawing*, 2012. Pen and ink.

imagined and remembered. And finally, the technical solutions genus describes in accurately measured line how an event or object might function or be constructed. Examples include: measured architectural and engineering drawings.

Once scholars get beyond the physical properties that bridge the space between writing and drawing, they tend to identify "readability" as the point at which they truly separate. The reason usually given is that "reading" is only thought to be possible when a one-to- one equivalency, such as an alphabet, support the marks made. So writing is a 2D, syntax-governed system of representing the sound of the human voice, and drawings an apparently syntax-free means of representing matter. Between the two sits the notational. Although the word notational is usually used to describe a full range of symbolic sequential systems, within this taxonomy I have treated writing as a separate issue, because unlike, for example, acrobatics, dance or mathematics and musical notation, writing is not subject specific.

Having established the ground, I would now like to look more closely at the space between writings and drawing.

In a study in the US in 1983, a group of children aged five to six were used as the vehicle through which the interrelationships between drawing and early writing could be explored. The investigator, Anne Haas Dyson, separated drawing from writing by their appearance on the page. She defined writing as that portion of the "product" (the children's work) that contained letters, or letter-like forms, and drawing as that portion of the product that contained non-letter-like forms.

In the early 1940s, the philosopher Susanne Langer saw the difference between written and drawn pages in a similar, but less visual way. She identified drawing's lack of alphabet, syntax and dictionary as cause for their differences. Langer divided 2D representation into two parts: the discursive, which embraced writing and presumably other notational forms, and the presentational, by which she seemed to mean the stand-alone drawn images usually associated with art. Discursive forms, she argued, present their constituents successively, while presentational forms present their constituents simultaneously. Langer, I suspect, placed musical, mathematical, dance and acrobatic notation with writing on the discursive side of the divide, and technical drawings, photographs and sketches on the presentational side.

Langer's conviction that presentational images present themselves simultaneously and allow themselves to be grasped "in one act of vision", to my mind, not only underestimates the time it takes to make sense of even the most simple drawings, but also the degree to which most drawings are intended to be closely "read", not simply framed and seen.

Langer's assumption seems to have been generated by a received-opinion mental picture of drawing that has the renaissance and modern masters as its model and, at a practical level, mimesis and image recognition as its purpose. The problem with this rather closed view of drawing is that it is exclusive. If, however, we expand the model to embrace drawings beyond art, we engage with a less in-awe and more demanding audience. An audience that expects to be able not only to "read" drawings, but read them

sequentially; passengers and explorers who expect to be able get where they need to go by reading transit or contour maps, iron workers who use drawings to build bridges that don't fall down, and musicians who expect the subject-specific notational forms that are "the score" to be drawn accurately.

Having touched on "received opinion", I would now like to move to "first impressions". When we are confronted by a page whose point is the presentation of one form or another of 2D representation, I suspect we start our looking by classifying it with a single word: drawing, score, writing, map or diagram. What it is made of, who made it, when it was made, may interest us, but during that first engagement and instance of "seeing" (in advance of any reading that may take place), we establish what kind of 2D representation we are looking at.

It is clearly possible to look at a sheet of paper, a page of drawing or text, as either art (an investment in taste, emotion and self-expression that has been filtered through its author's understanding of what art is) or information (a collection of marks that has an advisory or instructional purpose, which may or may not have an emotional or aesthetic value to us). I suspect that if we believe the page is art, we will categorise it as a drawing. If it fails the art test, we fall back on to the broader set of descriptions – map, diagram, plan, or perhaps even concrete poetry.

If, however, the viewer is aware that the page is authored by Leonardo da Vinci, he or she will – even if the page is covered with words, images and numbers that relate to the solving of a biomechanical problem – tend to accept it as art, as a "drawing" not a map, diagram or illustrated text. Although few of us have ever read the mirror-written text that sits around the edges of his images, the words are there to be read as contemporary notes that reinforce the viewer's understanding of the drawing. So within my taxonomy, Leonardo's anatomy drawings are, for the most part, part-writing, part-drawing – hybrid members of the domain of 2D representation, which belong either to the sketching, mapping, diagrammatic, tracing or technical genus.

My aim at this point is for you to begin to feel uneasy about Langer's assumption that presentational drawings can be grasped "in one act of vision", and, additionally, begin to feel some sympathy for the possibility that all drawings are in one way or another "readable". With that said, I would now like to return to what I mean when I use the word drawing and make one last refinement to my explanation. Over and above the readability issue, I believe the next most important divide that exists between writing and notation is that drawings freeze time. The freezing process allows still photography to become a part of the taxonomy, but excludes cinematography because of its essentially temporal nature. The temporal relationship that links the symbols that underpin most notational forms of drawing prevents them from existing within the taxonomy as pure drawings. Like text and the single cell in an animated cartoon, they are drawn, but once drawn elements are linked (most commonly in a linear fashion), their temporal relationship excludes them from being a part of pure drawing.

So although both notational and written forms are a part of the kingdom of 2D representation,

neither freezes time, as drawing must. Maps and charts freeze time, the shadow of the gnomon on a sundial appears to freeze time, and a photograph of a multidimensional event is a stolen, static moment. With this final component, the idea of "freezing time", in place, I feel reasonably secure in presenting drawing as the representation of a multidimensional event as a static 2D image.

By way of a conclusion, I now want to apply an essentially presentational approach to reading an image that gives the appearance of having been conceived as discursive.

Some 20 years before da Vinci embarked on his collaboration with the anatomist Marcantonio della Torre, when he was still working on animal dissections, he outlined the territory he aimed to pursue in relation to his study of human anatomy.

Drawn in pen and ink on a page in a hand-sized notebook, the illustration (*Notes on topics to be investigated after Leonardo*) exists at the point where writing and drawing intersect. During the making, Leonardo divided the page into three distinct and different zones; a margin approximately 1.5cm wide that runs from the bottom right-hand corner to the top left-hand corner, an area of carefully applied linear text-based tone that defines the inner limits of the right and top margins and the outer limits of the third zone, which is the sea of blank paper that washes into the textural tone from the left of the page.

Looking rather like a section through an Olympic diving platform, the page has a solid block on the right that supports three slim platforms that reach out to the left. Within this reading there is a well-defined "top board", "middle board" and a poolside: each a surface to dive from.

Zone two, the text written in mirror-written vernacular Italian, sets out a series of topics Leonardo aims to investigate. Each of the "diving boards" is a general heading and starting point. He uses the top board to pose the question: "What nerve is the cause of movement of the eye and makes the movement of one eye draw the other." The text beneath lists a series of secondary questions that present facial movements as research questions. The middle board presents a challenge: "Describe the origin of man when he is generated in the womb and why an infant of eight months does not live." The text beneath lists a series of unrelated involuntary actions: "sweating, tiredness and hunger" and so on. The final poolside jumping-off point is headed: "On the nerve that causes movement from the shoulder to the elbow."

In presenting this drawing in the way I have, I am not suggesting it is either a calligram – a text intentionally arranged to create a recognisable image – or an example of concrete poetry. What I am presenting is the possibility that once a draftsman, author or typographer has recognised the whiteness of the paper as a component part of the image, they cease to accept the paper as a 2D plane and instead understand it as latent time and space. At that point, I suspect the act of writing becomes, in Langer' terms, presentational and "readable" as a both a discursive and presentational image.

So what I am suggesting is that drawing starts and writing not so much ends, as changes its nature when the author sees the page as a multidimensional surface and the component

Stephen Farthing. *Notes on topics to be investigated after Leonardo*, 2013. Pen and ink.

parts not so much as written elements, but as marshalled and arranged ideas, headings or concepts – so text-based pages that are less about the human voice than a thought process.

Eye-tracking has helped us to understand how our eyes move across the page when we read text and how different their movement is when engaging with presentational drawings. We have learned from optical tracking that when we read European text, we start at the top left and then systematically zigzag our way down the page. We know that there is no expected reading time for a presentational drawing. Instead, they encourage us to search for information, and then it becomes a matter of how much time we, at a personal level, are prepared to give. We know we are attracted to patterns and improbabilities, points of erasure and erratics, and suspect that there is no prescribed route. We believe that each drawing presents us with its own direction of flow and priorities. We believe all of this because as artists we have never formally been taught how to read presentational drawings, yet in an architectural training it is pivotal. Andrew Duchowski, an expert in visual perception, argues that, when we engage with presentational images, we first take in the entirety of the image in low resolution, using mostly peripheral vision and then, during a second stage of looking, shift to areas we consider worthy of further inspection, using a sustained and more detailed approach carried out in high resolution.

Although what I have set out in this essay presents no answers, I am certain that drawing's physical and intellectual relationship with writing and "other notational forms" should be considered as important in any bid to better understand the nature of drawing. With that said, I believe there is also a genuine need for us to develop a framework that will help us to better understand and teach strategies to art and design students so they can read presentational 2D imagery more effectively.