

Chapter 14

Drawings from Small Beginnings

Hans Dehlinger
 Universität Kassel, Germany

ABSTRACT

Small, densely arranged elements in large numbers are frequently observed phenomena in nature. The author uses an arbitrarily chosen stretch of landscape, a dry riverbed, to formulate artistic intentions and design programmed interpretations of them. From the database of recorded findings the author formulates concepts, which then transform into programs to generate drawings. Many different programs can satisfactorily assist in this task. The conceptual formulation is a crucial step in the procedural chain for attempts in generative art. This chapter experimentally addresses the formulation of a few concepts inspired by nature, aimed at generating line drawings executed on pen-plotters. Unlike in science and engineering, a piece of code does not produce a solution to a problem for concepts in generative art. Generative drawings are produced through a structured process including a sequence of discrete procedural steps, which are: finding and recording; concept and transformation; programming and testing; and drawing and interpretation.

INTRODUCTION: THE RIVERBED OF RAMBLA DE CERVERA

Imagine that we are walking down a dry riverbed, in which we observe and digitally record impressions drawn from nature. Nature-induced generative shaping resulting in visual formations on large and small scales is particularly visible in this type of environment. We choose the *Rambla de Cervera*, a large seasonal riverbed, most of the

year dry and barren, which is cutting through the southern Cervera Mountains in the Comarca of Bajo Maestrazgo in the east of Spain. The river dried up a long time ago. The riverbed is the *locus* of a great number and a great variety of soft and forceful past events, which have generated its present visual state. We use it as a starting point for our reflections on nature-inspired, computer-generated drawings.

With the help of a collection of digital photographs, the purpose is to extract generative concepts from the visual impressions of this particular

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landscape. We want to invent generative schemes, which transform our findings into generative, line-based aesthetic events. We can, for example, decide to focus on elements, repetitions, and arrangements of similar things. There are plenty of them around us: shaped by the forces of gravity, geotectonic pressure, wind, temperature changes, or flash floods, and formed in time slots ranging from a fraction of a second to millions of years.

We see dried parts of plants, petrified remains of animals, flowers and leaves, trunks and branches in aggradations, and dry and live trees. We hike over solid rocks, large and small stones, pebbles, sand, cracked branches, torn-up roots, rusty parts of metal, and flattened tin cans. Rain, flood, tumbling stones, seasonal changes and other impacts have shaped everything we see.

The embankment on one side of the riverbed towers over it with layers of sediments cut through geological time, while the other side is rolling out into soft hills with olive trees, many of them a thousand years old. Small and large elements and repetitions are everywhere, each one with an individual shape. They are unique and precious, and yet each is just one among trillions. On the way down the riverbed the visible elements are complemented by the elements of sound as a repetitious sequence: slowly-dripping water, a bird with a simple tune, and the croak of a frog.

What do we expect; what do we want to find? A small element is an instance, a singularity, and a tiny spot in the universe. Drawn up in large numbers it turns into a grayscale, a background noise, and a shadow of something else. A multitude of similar elements turns into something different. This and similar ideas are the themes we want to explore experimentally. Our intention differs only marginally from many other attempts to use nature as a template for drawings that may be found in art collections all over the world.

TRANSFORMING PHENOMENA IN NATURE INTO PROGRAMS FOR GENERATIVE DRAWINGS

Constraints Imposed

Our approach for constructing drawings is purposefully constrained on the grounds of artistic reasoning and from a self-restriction stemming from the generative approach we follow: the resulting drawings are realized on pen-plotters. We convert a computer-generated image into a line drawing with a physical pen, which is guided by a program controlled and driven algorithmically by a mechanical device rather than by the skilled hand and imagination of an artist. Refraining from all enhancements is a deliberate decision, which opens up a specific line-oriented window of expression where subtle differences significantly contribute to the quality of an image. These decisions, which seem to be limiting at the first impression, have certain desirable effects. For example, pencil-drawn lines cross differently than printed lines, and a pen, which partially fails to perform under high speedⁱ and acceleration when guided by a mechanical device, can add something like a context-sensitive fingerprint to each generated line. A range of such effects imprints special characteristics and distinctly recognizable features on the generative drawings. And they are, of course, artistically wanted properties.

Procedural Steps

We have chosen to use the metaphor of a hike as a starting point. The realization of generative drawing of the imagined hike will be structured by a sequence of discrete procedural steps which are: finding and recording; concept and transformation; programming and testing; and drawing and interpretation.

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