Chapter 10
Biological Translation:
Virtual Code, Form, and Interactivity

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ABSTRACT

This chapter explores the use of code, form, and interactivity in translating biological objects into mathematically generated digital environments. The existence of a mathematical language contained in all physical objects that is similar in function to DNA in organisms is proposed as a core component and driving force of this exploration. Relative to current education tactics, using code, form, and interactivity as a set of common lexicons creates an increasingly universal method, to explore, understand, and teach this hidden biological language by re-writing its algorithms in ways we may readily recognize and absorb. Two case studies of the designer's own work, (a) Clouds & Ichor, and (b) Stream, will be used to demonstrate and ground the concepts being discussed. In both projects, a natural learning experience is at the core of the biological process.

INTRODUCTION

Strange Behavior

If I told you that I had a material, one made expressly for the purpose of play and, dare I say it, magic, and that had a mind of its own and could not be hurt, you might think me odd. Perhaps it will bring to mind the fictional liquid metal T-1000 character from Terminator 2, or an imagined combination of the material with the metal. If I then gave you this material within the bounds of a room, your first action would likely be to touch it, and your second to physically set up a forceful meeting between the material and the walls of that space. I would not think this strange at all, and in fact this is the point. Not, specifically, to slam this material into walls (though it would be fun), but rather to play with a digital material informed by properties of amoebic organisms and liquid, that exists in an environment created to promote agency. Agency, as explained so well by Beeker Northam, executive strategy director for creative communications agency Denstu London, may be "the ability to control and affect your own and your shared environment in the face of com-

Figure 1. Clouds & Ichor, located at http://www. collinhover.com/lab/ichor/. (© 2010, C. Hover. Used with permission).
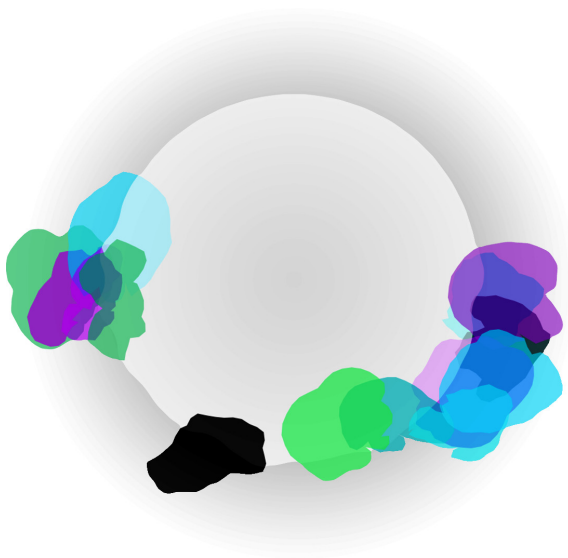
munications. Magic, play, and information is a choice, never an infliction" (Northam, 2010). The latter part of this definition will be revisited later in this chapter (Figure 2).

Now if, after becoming familiar with the above project, I explained that I had several thousand creatures composed entirely of a drive to learn more about human body language and environment, as if curiosity might be considered a physical material, you may not find this so strange. I would also not think it out of place for you to make the most wild and outlandish movements with your limbs and body should you (and perhaps others) find yourself face to face with a group of these creatures. It seems difficult, when presented with a physical or digital system that exhibits sentience, for us humans, to resist exploring and interacting with it. This is the concept of

Figure 2. Stream and user interacting, located at http://www.collinhover.com/lab/stream/. (© 2010, C. Hover. Used with permission.).

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