This chapter was very interesting, and I notice that as we progress through the book we are getting more and more actual implementation information about computer music, specifically with ChucK. I welcome this wholeheartedly, I think that it is extremely important for readers to be able to follow along on their own and experiment with the ideas presented by the book. In this chapter I was particularly struck by Principles 4.5 and 4.6, which state “Design things with a computer that would not be possible without!” and “Use the Computer as an agent of transformation.” I find these to be very interesting being right next to each other. To me, there is a distinction between designing sounds that are completely of the world of the computer, for instance a synthesized sound that does not naturally appear at all, and designing sounds that are rooted in the real world, such as vocoders or other modulation effects done by computers on real life signals. I think of the music of Porter Robinson and his overall aesthetic from his Nurture album a lot when considering this topic. In his work, Porter is known for combining completely synthesized sounds with natural or modulated natural sounds. For example, in Something Comforting, a song off Nurture, Porter experiments with the modulation of the pitch of his voice over time over a beat that combines piano with synthesizers, very much following in the design philosophy of Ge. At the end of the track, Porter glitches his voice in and out of this pitch modulation as he sings, giving the impression of a music that is simultaneously robotic, digital, but also deeply human. This resonates very deeply with what I understand artful design to accomplish. Artists that lean further into complete original computer synthesis include Aphex Twin and some of A.G. Cook, who both utilize automated modulation and complex effects on top of relatively simple synthesized signals. Check out Crescent Sun by A.G. Cook and Ageispolis by Aphex Twin to see how effects and modulation can give depth and texture to the simplest of synthesis sounds.

On the topic of simplicity in artful computer music design, I am struck by the idea that while constraints are a best friend of creativity, in order to create sounds that are only possible with a computer, new kinds of constraints must be understood and imposed. Would Bach be very interested in the modulation of pitch and spatialization? Perhaps, but my guess is that he would likely write a fugue on a DX7 with minimal extra effects. Bach’s constraints, the guide rails by which he writes a piece of music (for example, the fugue form itself) takes little advantage in itself of the capabilities of computers. Therefore, I think perhaps the most important principle from this chapter is Principle 4.8: “Experiment to illogical extremes!” Without this experimentation, we may never find our footing in this new medium, we may never know what constraints to put on ourselves as we progress as artists into it, leaving us to the same constraints, the same artistic worlds, of our past.