Deus ex Machina

Grady Booch

Once there was a time when mainframes walked the earth and reigned supreme over all the land. Lowly users were far too unclean and unschooled to commune with these vastly superior beings made of silicon and software, and so there arose among us a programming priesthood who served as intermediaries between human and machine.

Like the monks of old, who studiously labored over the production of elegant manuscripts, programmers would carefully prepare their digital missives that codified the hopes and dreams of their users. Each character, each line was important and so required their utmost concentration and perfection of form. Their work completed, they would cautiously carry their precious cards to the sacred place of computation and hand their offerings to a select few who ministered day and night to tireless machines hidden away in cold and sterile fortresses.

If they had carried out their rituals just right and if the machines were indeed well pleased, they would signal their reply with precise although not necessarily useful answers. If displeased, they would absently throw out veritable reams of curious divinations. These required hours of study by those trained in the priesthood to decipher before the ritual could begin again.

As Bob Barton, chief architect of the Burroughs B5000, put it, “Systems programmers are the high priests of a low cult” (Alan Kay, “The Early History of Smalltalk”; www.smalldtalk.org/smalldtalk/TheEarlyHistoryOfSmalltalk_Abstract.html).

It tells us something about the human nature of computing that, before the advent of the personal computer, the industry borrowed a metaphor from spiritual practices to describe a very technical activity. To continue that metaphor, we might even observe that the coming of the minicomputer followed by the PC brought an abrupt end to this curious period of computing in a fashion, not unlike Martin Luther’s subversive declarations that similarly broke the stranglehold of the church in the Middle Ages.

And therein lies a story: Does technology liberate the individual, or does it make us a servant to the machines we ourselves create? Does computing contribute to our spiritual well-being, or does it disrupt it by encouraging an interrupt-driven life that is filled with the noise of digital ephemera?

The Power of Faith

No matter your individual position, faith is a powerful element of the human experience. Pew Research’s study of the global religious landscape suggests that more than 80 percent of the world’s population self-identifies as being part of some faith (www.pewforum.org/2012/12/18/global-religious-landscape-exec). In this column and in my documentary project, we honor—and do not judge—such elements of the human experience. It comes as no surprise that computing intersects with the story of belief in many ways. This is an element of computing that’s rarely discussed, although some have boldly done so, such as Don Knuth in Things a Computer Scientist Rarely Talks About (Center for the Study of Language and Information, 2003).
Let’s first consider computing as a medium for belief. This isn’t hard to understand because the Internet has proven to be a global mechanism that gives voice to virtually every point of view. However, it’s interesting to observe how this has unfolded. Douglas Cowan in Cyberhenge (Routledge, 2004) notes that pagan communities were among the first to find a voice on the Web; I’d also observe that traditional religious practices were a bit slower on the uptake. I can understand that: it takes time for legacy organizations to metabolize new technology, and the more fluid, distributed, and disjoint spiritual communities found that the Web filled a deep need to connect with other like-minded spirits.

Today, of course, mainstream religious communities have embraced computing technology as a means of achieving a reach beyond their local community. Every large church seems to have at least a website, and the more well-funded will stream their services live and offer a large collection of study resources online. One can easily find guidance or legal judgment—a fatwa—at sites such as www.askimam.org. Partly in support of the Mormon ritual of baptism for the dead, you can search family trees at www.familysearch.org; this latter resource is particularly interesting, for its presence has the consequence of providing a very useful mechanism for crowdsourcing genealogical information. Virtually every sacred document—from the Torah to the Quran to the Dhammacakkappavatana Sutta to so many, many more—can be found online or encapsulated in apps for your smartphone or tablet. At no time before in history was it possible to carry the collected wisdom of every faith practice around in your pocket (this, of course, isn’t necessarily why we call them smartphones).

Virtual Worship
Let’s consider another dimension at the intersection of computing and faith by pondering a deeper question: Can computing be used as a ritual space? A traditionalist might say no: only a church, temple, or mosque can serve as a ritual place. If pushed, you might admit that there can indeed be other, more personal sacred spaces—a home altar, some special room, a well-defined place outside—the point being that these are all physical places in the world. Yet, there are many who would say that they worship or meditate in digital ritual spaces.

Recently, I watched Rosh Hashanah services streamed to my iPad from New York, several thousand miles away. Although not physically present, this was in a number of ways a sacred time and place (and by the way, I’m not Jewish). You can even place a prayer in Jerusalem’s Western Wall digitally through sites such as www.aish.com. In virtual worlds such as Second Life, you can visit many churches, temples, and mosques, and worship in community in real time. This change of venue does give rise to an interesting refactoring of the religious experience: If you visit a virtual mosque, should you remove
your virtual shoes? As it turns out, a world conversation of the issue concluded that, yes, you should do so, as a ritual practice. That we can define ritual spaces in a digital form is therefore not only viable, it’s understandable. As David Cortesi notes, a ritual is “any activity that we perform at least as much for its symbolic and emotional value as for its practical value. We perform a ritual because the act in itself has meaning, or because doing it makes us feel better about ourselves, or both” (www.tassos-oak.com/online/5ritual.html). Clearly, meaning can be found in a digital space just as in a physical one.

Thus far, we’ve considered how computing can offer a medium for spiritual discourse and communion with like-minded believers. These are both unsurprising uses of digital technology. Belief systems came into being in part as a means of explaining the unexplainable, but along the way gave rise to important traditions that contributed to the advancement of humanity in several unexpected ways. Every vibrant belief system must adapt to the times and to the technology or else be so marginalized that it withers away. The printing press was at first condemned as an instrument of the devil by the Catholic Church, but now the Vatican heartily embraces digital discourse. Even Pope Francis has a Twitter account (@pontifex).

Binary Inspiration

Here’s a more radical take on the relationship between computing and faith, and I’ll use Knuth’s words directly to suggest it. In Things a Computer Scientist Rarely Talks About, he observes, “Computer science is a possible basis for insights about God.”

Knuth isn’t alone in this thinking. Indeed, we can go back to Gottfried Leibniz himself. Leibniz—who, among many other things, brought us the concept of the binary number system—had a very spiritual basis for his work. As he stated, “I have made things clear to some extent by the origin of numbers from 0 and 1, which I have observed is the most beautiful symbol of the continuous creation of things from nothing and of their dependence on God.”

From Leibniz’s worldview, every computation is, in a manner of speaking, the dance between 1s and 0s, between good and evil. Similarly, in God and Golem, Inc. (MIT Press, 1966), Norbert Wiener—from whom we begin the etymology of the word “cyber”—ponders the spiritual and ethical implications of building machines that think.

In Greek theater, deus ex machina was a rather crude mechanism used by playwrights such as Euripides who would write themselves into a literary corner: you could literally drop a god on stage to set everything right at the end of the play. Here, we consider a different set of semantics: Does computing contribute to spiritual practice, or does it threaten it? I can’t answer that question for you, dear reader; it’s one that you must personally confront. Perhaps you might do so during your next Digital Sabbath, or every March during the National Day of Unplugging (www.sabbathmanifesto.org).

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