In *Sophie’s World: A Novel About the History of Philosophy*, Jostein Gaarder examines the history of philosophy through the eyes of fourteen year old Sophie Amundsen. Sophie’s philosophical adventure begins with the arrival of a mysterious envelope bearing no return address and no postage. In the envelope is nothing more than a slip of paper on which has been written the question “Who are you?” “Nothing else, only the three words, written by hand, and followed by a large question mark” (2). The power of that single question sets Sophie’s mind off on a torrent of philosophical questions.

Wasn’t it odd that she didn’t know who she was? And wasn’t it unreasonable that she hadn’t been allowed to have any say in what she would look like? Her looks had just been dumped on her. She could choose her own friends, but she certainly hadn’t chosen herself. She had not even chosen to be a human being.

What was a human being? (4)

And thus begins Sophie’s tour through two thousand years plus of the history of philosophy. The start of this philosophical novel and the start of philosophy lies in the simple questions “Who are you?” and “What is a human being?” Gaarder points out that philosophy begins with wonder. As Sophie’s mysterious correspondent informs her, “The only thing we require to be good philosophers is the faculty of wonder” (15), and that wonder is often provoked by questions about...
who and what we are. These two questions are perhaps the most fundamental of the perennial questions that make up the tradition and history of philosophy and in each age and period they have been addressed in terms of that period’s social and cultural context. The popularity of Gaarder’s novel suggests that these questions are as important today as they have been throughout the history of philosophy. But in our wired, electronic, digital cyberculture, these questions are being addressed from a fresh perspective and in a manner previously impossible. Our increasingly common contact with computers and artificially intelligent machines, together with our growing reliance on computer networks for communication and socialization, is provoking a new interest in these perennial philosophical questions about human nature and self-identity. As a professor of philosophy and a denizen of the late twentieth century cyberculture, I am interested both in these traditional philosophical questions and how they might be addressed in the classroom through the prism of the computer culture. In this essay I will describe how I use contemporary computer resources to discuss these ancient philosophical questions and make them “come alive” in the classroom, a challenge most professors face when trying to convey their fascination and interest to their students.

The history of these questions “Who are you?” and “What are you?” has long been intertwined with the history of machines. As early as Descartes’ pondering the nature of the human mind, philosophers were aware of our peculiar, paradoxical, and sometimes troubling connection to machines. And while Descartes sought to sharpen the boundary between human and machine, asserting that while physical bodies were merely mechanical, the human being possessed an immaterial, spiritual mind or soul, it was not long after Descartes that philosophers such as Julien de La Mettrie called into question this boundary, asserting that there was nothing to distinguish human beings from complex machines. La Mettrie’s mechanistic materialism has been a part of philosophy ever since and it is no exaggeration to
claim that today it is the dominant paradigm in much Anglo-American philosophy, especially that concerned with human nature and the mind. The information processing model, hardware is to the brain/body as software is to the mind, is commonplace today in philosophy, cognitive science, computer science and a host of related disciplines. It is also commonplace in popular culture. Movies such as TRON, Bladerunner, 2001, Virtuosity, television shows such as Star Trek: The Next Generation, and magazines such as Wired and Mondo exploit the metaphor of the computer to address fundamental philosophical issues about personal identity, the nature of the mind, the boundary between man and machine, the virtually versus the really human and alive.

It is clear, then, that the history of these philosophical questions is intertwined with our own fascination with technology. It is this history and fascination which should be exploited in the classroom, in a way relevant not only to philosophy but also the humanities more generally, psychology, and any discipline that explores fundamental questions about human nature, the mind, personal identity, and life. In a variety of introductory and advanced philosophy courses I consider these questions and integrate technology into our class discussions and experiences in order to further deepen the student’s appreciation of them. The availability of inexpensive but powerful artificial intelligence programs, the access to computers now common on many college campuses, and the presence of networked computers allow professors to take these abstract philosophical questions and make them concrete, providing a living thought experiment that provokes student interest and generates philosophical discussion. In what follows, I present several ways in which I have integrated technology into traditional philosophical discussions: using MUDs to discuss self-identity, exploring artificial intelligence in a discussion of the mind and reason, and considering artificial life programs in a debate on what it means to be alive.
1. MUDing Around With Identity

Sophie notes with some exasperation that she hadn’t been allowed to have any say in what she would look like. “Her looks had just been dumped on her” (Gaarder 1991, 4). For most of us, our first thoughts about our self-identity revolve around what we look like and what we do or have done in our lives. Our bodies and our actions and memories make up who we are. And like Sophie, we sometimes feel constrained by these things. They are not things we can easily change. In the worlds of MUDs, however, looks as well as past actions are just two of the things subject to manipulation. MUDs, or multi-user dimensions or domains, are text-based virtual reality systems that allow individuals to log on to a computer from a remote site and interact in real-time with other individuals concurrently logged on. The programming environment of a MUD allows individuals to construct both virtual places to inhabit and virtual identities to become. When logging onto a MUD, the user is typically given a description of a place or room into which he or she has been deposited. The user can then, through typing simple sets of instructions, move about in the virtual world of the MUD, construct rooms of his or her own, and construct an identity or character for themselves. Given the anonymity guaranteed by most MUDs, the user’s identity need bear little or no resemblance to their actual identity. In the world of MUDs, then, Sophie would be free to explore what it would be like to have chosen her looks. By setting how her character is described in the MUD, Sophie could decide that she is older than she actually is, more beautiful or ugly, male rather than female, animal rather than human. Indeed, all the components of personal identity can be played with on a MUD. This makes them a perfect laboratory for exploring the notion of personal identity, as a number of researchers have pointed out. Sherry Turkle, for instance, in her *Life on the Screen: Identity in*
the Age of the Internet points out that MUDs give “people the chance to express multiple and often unexplored aspects of the self, to play with their identity and to try out new ones. MUDs make possible the creation of an identity so fluid and multiple that it strains the limits of the notion” (12). It is this aspect of MUDs that makes them a suitable tool for exploring personal identity in the classroom.

My upperdivision course on personal identity is an exploration of self-identity in philosophy, psychology, film, and literature. The primary focus of this course is on competing philosophical theories of the nature of personal identity. We explore the issue of what makes us the person we are and what accounts for the continuity of personal identity over time. Philosophers, both historically and in contemporary discussions, have concentrated on two broad philosophical frameworks in explaining personal identity: bodily continuity, we are our bodies, and continuity of memory, we are who we remember to be. The course objectives include an understanding of these historically important philosophical theories but also a contemporary consideration of how self-identity might be shaped by social and cultural factors, such as the dominant technologies of a time period, as well as a focus on the development of the students’ own self-identity. It is these two objectives to which MUDs are most directly relevant.

At the beginning of the semester I inform students that they will be required to sign up to one or more MUDs during the semester, construct identities of their choosing, and keep a diary of their interactions on the MUDs. I generally set aside one class period to meet in the computer lab and go over the basics with students of how to locate and sign up to MUDs. The MUD Connector (http://www.mudconnect.com/) makes it easy for students to find and join a MUD corresponding to their interests. MUDs are usually divided into social MUDs where the emphasis is on conversation and social interaction and adventure style MUDs which emphasize game playing and in which characters can usually kill and be
killed. Towards the end of the semester I include a unit on the implications of mass and electronic media for our sense of self. The students are introduced to a series of readings that explore how our sense of identity may be changing due to our interactions with technology. These readings include selections from Turkle, Kenneth Gergen’s *The Saturated Self: Dilemmas of Identity in Contemporary Life*, and Allucquère Rosanne Stone’s *The War of Desire and Technology at the Close of the Mechanical Age*. The underlying point to all of these readings is that electronic media has brought about a shift from a unitary, stable, modernist self to a flexible, multiple, potentially unstable postmodernist self. In traditional communities where face-to-face contact dominates, people developed a strong, unitary sense of self. On the Internet, though, we learn to experiment with different selves, different identities. We learn to fashion for our virtual lives new selves. As Turkle puts it, today, “many more people experience identity as a set of roles that can be mixed and matched, whose diverse demands need to be negotiated” (1995, 180). Social psychologist Kenneth Gergen has termed this phenomenon “the saturated self.” Communications technologies saturate us with the various voices of humankind and lead to a self that is without foundations, an incoherent, fragmentary self in which the notion of authentic self-identity is lost. Allucquere Rosanne Stone agrees. In her *The War of Desire and Technology at the Close of the Mechanical Age*, Stone argues that we are witnessing a radical rewriting of our conception of the self. In the age of the computer, our belief that to each body there corresponds a single self or identity is undermined. Older, more stabler structures of identity are giving way to a new form of multiple identity. Stone draws parallels between this new form of identity and multiple personality disorder, suggesting that in the age of the Internet, multiple personalities may become the norm, not the disorder.

By the end of the semester, students have perhaps directly experienced this saturated, fragmented, multiple sense of identity through their participation in
MUDs. During our discussion of these issues, students are encouraged to relate their experiences on their MUDs and share their diary entries, both in class and over a computer discussion list set up for the class. What kinds of identities did they choose to construct? Did they present themselves in terms of a different sex? How did they react in real life to the actions and exploits of their MUD characters? Did they come to experience their MUD characters as extensions of themselves? What are the implications of their experiences on a MUD for their thinking about personal identity? Having constructed for themselves a series of alternative identities and “lived” these lives in a virtual world, the students are more motivated to think about the nature of personal identity and what makes them the person they are. Students’ experiences with alternative identities also gives them an opportunity for thinking about and evaluating competing philosophical theories about the role of the body and memory in self-identity. MUDs provide a living laboratory for putting into play questions about identity the students may have taken for granted up to that point in time.

2. Machines That Think

Since at least the time of Aristotle, human beings were thought to be unique in their capacity to reason. Man, as the story goes, is the rational animal and it is reason which serves to distinguish us both from animals and machines. This is a claim which has been persistent throughout the history of both Western philosophical and religious belief. More recently, though, with advances in computer science and programming and in our understanding of human reason and the functioning of the brain, this claim to uniqueness has been challenged. It is now commonplace to claim intelligence, thought, even consciousness on behalf of machines. These claims, though, are still controversial and not widely accepted by
the general populace. I explore the nature of human intelligence, human uniqueness, and the existence of the mind in a number of philosophy courses, including introductory philosophy courses and upper division explorations of the mind and human nature. Our class discussions usually begin with a consideration of what has come to be called the Turing Test, first proposed by Alan Turing in his “Computing Machinery and Intelligence.” Turing basically suggested that the best way to address the question “Can machines think?” is by engaging machines in conversations. If, by typing in questions and responding to answers, you are unable to distinguish between a human and a computer conversationalist then, by Turing’s account, the machine could think. Turing then counters many objections to the claim that it is in principle possible for machines to think. Turing’s essay has been a lightning rod for much work in recent philosophy of mind and artificial intelligence. Following a discussion of Turing’s test, we consider John Searle’s “Minds, Brains, and Programs,” a critique of Turing’s implicit behaviorism which includes Searle’s own Chinese Room thought experiment, designed to undermine our intuitions about machines that supposedly think. Both essays, and many other fine discussions of these issues, are collected together in Dougals Hofstadter and Daniel Dennett’s text *The Mind’s I: Fantasies and Reflections on Self and Soul*.

Despite Turing’s and Searle’s accessible and clear writing styles, students are often unable to make the leap to thinking about machines that can think and often simply dismiss these claims and arguments. Their primary contact with computers is as word processors and they find these debates somewhat academic, more science fiction than philosophy. I have attempted to overcome this sometimes facile approach to this issue by having the students engage in a Turing Test of their own. While we are reading and discussing these issues, I require that my students, on their own time and by a certain date, spend one to two hours in one of the College’s computer labs, “conversing” with a computer, using one or more programs I have
instructed be loaded into the PCs. There are currently available a number of programs that allow students to engage in conversations with computers. One of the most famous of these programs, ELIZA by Joseph Weizenbaum, is available in many versions as shareware and can be easily downloaded from many Internet sites in both MacIntosh and DOS versions. ELIZA presents itself (herself?) as a psychotherapist and crafts humanlike responses to an interlocutor’s statements. While ELIZA’s responses are completely canned and very limited, users consistently report feeling as if they are having a conversation. As Turkle notes, “Weizenbaum thought that ELIZA’s easily identifiable limitations would discourage people from wanting to engage with it. But he was wrong. Even people who knew and understood that ELIZA could not know or understand wanted to confide in the program. Some even wanted to be alone with it” (1995, 105).

In addition to ELIZA, I direct my students to the homepage of the Loebner Prize Competition in Artificial Intelligence (http://www.csusm.edu/docs/loebner_contest.html). The Loebner Prize competition is an annual competition based on Turing’s challenge in which judges converse with computers and award prizes to the most advanced entrants, those most capable of carrying on a conversation, usually on a previously prescribed subject. The Loebner homepage includes official transcripts of conversations from past winning programs and connections to some of the past entrants. You can, for instance, follow a link that allows you to “speak” to Julia, a program written by Michael Mauldin of Carnegie Mellon University. You can also follow a connection that links you to the homepage of Network Services and Interfaces Laboratory and converse with their 1994 winning entrant on either a mystery topic or the topic of sex, something that usually piques my students’ interest.

Following their exposure to these artificial intelligence programs, I require my students to write a brief reflection piece on their experiences. As Turkle noted,
many individuals are struck by the personal presence of these artificial intelligences, and so I ask my students to consider this aspect of the thought experiment. Did they ever feel as if they were talking to a “real” person? What topics did you choose to talk about? What kinds of mistakes did the program make? What limitations in the program did you encounter? Did you try to trick the program by asking it ambiguous questions or making ambiguous statements? Turkle reports that many individuals when conversing with ELIZA purposefully avoid asking questions or making statements that they know will expose the program’s limitations. In class, I have my students relate their experiences, reading portions of their essays, and then we discuss the implications of these programs for our thinking about the nature of intelligence and creativity, the uniqueness of human beings, and the existence of a mind separate from the brain, relating their observations to the essays we have previously read in class.

The ability of programs such as ELIZA or Julia to engage in a conversation is extremely limited. Nevertheless, the actual experience of talking to a computer, even through a keyboard and over the Internet, provides students with a richer experience of the possibilities behind artificial intelligence. If nothing else, it also generates a greater interest in both Turing’s Test and some of the deep and often difficult philosophical issues that it raises about human intelligence and our belief in human uniqueness. After engaging in their Turing Test, students are much more willing to consider in greater depth Turing’s arguments and his basic claim that machines may one day be capable of thought. Generally I pair these experiments with current technology with a thought experiment involving possible future extensions of this technology. I have my students watch “The Measure of Man,” an episode of Star Trek: The Next Generation in which Data, the ship’s artificially intelligent android, is put on trial to determine if he is conscious and thereby deserving of human rights. Data is a figure that many of the students can relate to, his having become a figure
of popular culture, and students often find it difficult to determine his status: man or machine? Students participate in the trial debate drawing on their readings and their experiences with Julia, ELIZA, and other AI programs.

3. Life: Artificial and Otherwise

While students may come to give serious consideration to the claim that computers can think, they persist in drawing a distinction between human beings (and animals more generally) and machines by suggesting that human beings are alive and computers are not. This raises the philosophical issues of the nature of life and the boundary between the organic and the inorganic. What is life? What does it mean to be alive? The boundary between the living and the non-living has been a rich source of speculation for popular culture for generations, as evidenced by the long tradition going back to the Medieval myth of the Golem and including Mary Shelley’s monster Frankenstein. Today the boundary between living and non-living is defined largely by the question of DNA. It has become commonplace to think of human nature in terms of our genetic heritage. We are our DNA is now a common refrain. But it is also increasingly common to speak of nature as a master programmer and DNA as nature’s programming language. As they have with the boundary between mind and no-mind, technology generally and computers more particularly have increasingly blurred the distinction between life and non-life. Evolution is now commonly seen as a master programmer and we, or better our genes, are one of its best programs. Richard Dawkins makes widespread use of the computer metaphor in describing the process of evolution and the manner in which our genes program our brains to care for their survival machines, that is, us. As he observes in his recent book River Out of Eden, “The machine code of the genes is uncannily computerlike…Life is just bytes and bytes of information...
survival machines programmed to propagate the digital database that did the programming” (1995, 185). Nelkin and Lindee report that geneticist Walter Gilber introduces his public lectures on gene sequencing by pulling a compact disk from his pocket and announcing to his audience: “This is you” (1995, 7). Carbon based life may be just one potential form of life and perhaps a subbranch of some broader conception of digital life. Mirroring this enthusiasm for digital life is the artificial life movement. Steven Levy’s book *Artificial Life*, subtitled “A Report from the Frontier where Computers Meet Biology,” describes a frontier of genetic algorithms and computational DNA where, as he puts it, “human beings will see themselves in a different light. We will not be standing at the pinnacle of some self-defined evolutionary hierarchy but will rank as particularly complex representatives of one subset of life among many possible alternatives” (9). Christopher Langton agrees, suggesting that artificial life “will have a tremendous impact on the future of life on earth as well as on our view of ourselves and the ‘role’ of human beings in the greater overall scheme of the universe” (1995, xi).

These ideas are both challenging and complex and question the usual boundary between life and nonlife. Again, though, because they challenge long taken for granted beliefs and because they draw on areas of philosophy, biology, and computer science that few students are familiar with, it is important to find a way into them that illustrates the ideas while sparking student interest. Once again, introducing technology into the class discussion serves this end. I regularly teach a course in philosophy and human nature that looks at both historically important philosophical theories of human nature as well as contemporary views such as sociobiological and mechanistic materialism. In the context of a discussion of these latter two theories, I ask my students to read selections from Charles Darwin and sociobiologists such as E. O. Wilson and Dawkins. We also read selections from Dennett and Hofstadter’s *The Mind’s I*. We then read and discuss introductory
essays on artificial life from Levy and Langton, raising issues about the nature and
definition of life and the place of human life in the cosmos. Once again, in order to
stimulate their interest in these issues, I require that my students spend some time on
their own actually trying out artificial life programs. I direct them to the homepage
of Artificial Life Online, directed by the Santa Fe Institute (http://alife.santafe.edu/).
There students find accessible material on artificial life, including some of the latest
research, and can participate in artificial life demonstrations. Artificial Life Online
includes a link to artificial life software which can be downloaded for a number of
platforms (MacIntosh, DOS, and Unix) and are easy to learn. Programs such as
Tierra, Vivarium, Life and others mimic the creation and evolution of life on the
computer screen. I also have students play “games” such as SimLife and SimCity
which use artificial life programming techniques to simulate the evolution of animal
life or the growth of an urban environment. Students can actually see life or cities
emerge and naturally evolve out of the starting points they defined. These
simulations often result in surprising developments in the simulated computer world.
Having observed the evolution of life on the screen, students are once again placed
in the middle of a complex but important philosophical debate about the definition
and significance of life and the place of human beings in nature. What is the status
of these digital life forms? Can the category of the living come to include
mechanical life forms? What are the implications of this for our thinking about
human nature? What is the difference between simulation and reality? These
questions are made more real and more pressing by their experiences with these new
forms of technology. While students often begin this section of the course with a
relatively basic sense of what it means to be alive or be a human being (shared
DNA, having red blood or a heart and other relevant organs), they come away from
this thought experiment more puzzled about the criteria of living or humanity.
4. Conclusion

Both I and my students have benefited tremendously from the introduction of new technologies in the classroom. Our explorations of MUDs, artificial intelligence, and artificial life deepen our understanding of both traditional and new philosophical issues. The concrete experience of actually creating an alternative identity and interacting with others through the mediation of a virtual online world, the experience of “talking” to a computer or watching “life” evolve on the computer screen generates interest in the philosophical underpinnings of self-identity, mind and consciousness, and what it means to be alive. In integrating technology into the classroom in this way, though, it is not sufficient to simply approach the technology as a tool or as an end in itself. Philosophers, and academics more generally, also have to reflect on how the technology itself shapes and defines the learning experience. Beyond merely introducing the technology into the philosophy curriculum, I also try to engage my students in reflecting on how the technology is shaping our thinking about identity, mind, reason, and life. What is happening to our traditional notions of self-identity now that we are interacting with one another electronically? What are the benefits and drawbacks of living in a postmodern culture of simulation that seemingly celebrates multiple personalities, something once thought to be a disorder? How has the introduction of the theory and metaphor of information processing shaped our notion of mind and reason? What is the role of emotion in artificial intelligence? What are the implications, philosophical, social, and ethical of blurring the distinction between the biological and the digital? Computers and the attendant technologies they make possible are powerful resources in the classroom. But they can also powerfully shape the way we think about the problems we study. In bringing this technology into the classroom we
need to bring with it a measure of reflection on the technology itself. Only then can we truly benefit and learn from this technology.

**Works Cited**

Vitae

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