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### From Technologist to Philosopher

Why you should quit your technology job and get a Ph.D. in the humanities

By *Damon Horowitz*

How does someone become a technologist?

In my case, it happened in college. I was an undergraduate at Columbia University, reading and discussing what were once unrepentantly called "the classics." I really wanted to understand what the great thinkers thought about the great questions of life, the human condition, the whole metaphysical stew. And the problem was: We didn't seem to be making much progress.

The great questions of philosophy have a way of defying easy resolution. Confronting them, we all seemed like such feeble thinkers—students and teachers and dead white males alike. We make mistakes, we are prone to inconsistencies, we equivocate. This was very frustrating to an impatient undergraduate.

Happily, in my case, fate intervened—in the form of my mother telling me, in no uncertain terms, that I should take a computer-science class, because if all else failed, then I could get a job at the phone company.

So in my sophomore year I learned to program a computer. And that was an intoxicating experience.

When you learn to program a computer, you acquire a superpower: the ability to make an inanimate object follow your command. If you have a vision, and you can articulate it in code, you can make it real, summon it forth on your machine. And once you've built a few small systems that do clever tasks—like recognizing handwriting, or summarizing a news article—then you think perhaps you could build a system that could do *any* task. That is, of course, the holy grail of artificial intelligence, "AI."

To a young undergraduate, frustrated with the lack of rapid progress on tough philosophical questions, AI seemed like the great hope, the panacea—the escape from the frustrations of thinking. If we human beings are such feeble thinkers, perhaps philosophy is best not left to human beings. We could instead just build better thinkers—

artificially intelligent machines—and they could answer our questions for us.

Thus I became a technologist. I earned my first graduate degree at the Massachusetts Institute of Technology, then went on to build several start-up companies around my specialization, a branch of AI called "natural language processing," or, more simply, "getting computers to understand what we are talking about."

It's fun being a technologist. In our Internet-enabled era, it is easy for technologists to parlay creative power into societal power: We build systems that ease the transactions of everyday life, and earn social validation that we are "making the world a better place." Within a few years I had achieved more worldly success than previous generations could have imagined. I had a high-paying technology job, I was doing cutting-edge AI work, and I was living the technotopian good life.

But there was a problem. Over time, it became increasingly hard to ignore the fact that the artificial intelligence systems I was building were not actually that intelligent. They could perform well on specific tasks; but they were unable to function when anything changed in their environment. I realized that, while I had set out in AI to build a better thinker, all I had really done was to create a bunch of clever toys—toys that were certainly not up to the task of being our intellectual surrogates.

And it became clear that the limitations of our AI systems would not be eliminated through incremental improvements. We were not, and are not, on the brink of a breakthrough that could produce systems approaching the level of human intelligence.

I wanted to better understand what it was about how we were defining intelligence that was leading us astray: What were we failing to understand about the nature of thought in our attempts to build thinking machines?

And, slowly, I realized that the questions I was asking were philosophical questions—about the nature of thought, the structure of language, the grounds of meaning. So if I really hoped to make major progress in AI, the best place to do this wouldn't be another AI lab. If I really wanted to build a better thinker, I should go study philosophy.

Thus, about a decade ago, I quit my technology job to get a Ph.D. in philosophy. And that was one of the best decisions I ever made.

When I started graduate school, I didn't have a clue exactly how the humanities investigated the subjects I was interested in. I was not

aware that there existed distinct branches of analytic and continental philosophy, which took radically different approaches to exploring thought and language; or that there was a discipline of rhetoric, or hermeneutics, or literary theory, where thinkers explore different aspects of how we create meaning and make sense of our world.

As I learned about those things, I realized just how limited my technologist view of thought and language was. I learned how the quantifiable, individualistic, ahistorical—that is, computational—view I had of cognition failed to account for whole expanses of cognitive experience (including, say, most of Shakespeare). I learned how pragmatist and contextualist perspectives better reflect the diversity and flexibility of our linguistic practices than do formal language models. I learned how to recognize social influences on inquiry itself—to see the inherited methodologies of science, the implicit power relations expressed in writing—and how those shape our knowledge.

Most striking, I learned that there were historical precedents for exactly the sort of logical oversimplifications that characterized my AI work. Indeed, there were even precedents for my motivation in embarking on such work in the first place. I found those precedents in episodes ranging from ancient times—Plato's fascination with math-like forms as a source of timeless truth—to the 20th century—the Logical Positivists and their quest to create unambiguous language to express sure foundations for all knowledge. They, too, had an uncritical notion of progress; and they, too, struggled in their attempts to formally quantify human concepts that I now see as inextricably bound up with human concerns and practices.

In learning the limits of my technologist worldview, I didn't just get a few handy ideas about how to build better AI systems. My studies opened up a new outlook on the world. I would unapologetically characterize it as a personal intellectual transformation: a renewed appreciation for the elements of life that are not scientifically understood or technologically engineered.

In other words: I became a humanist.

And having a more humanistic sensibility has made me a much better technologist than I was before. I no longer see the world through the eyes of a machine—through the filter of what we are capable of reducing to its logical foundations. I am more aware of how the products we build shape the culture we are in. I am more attuned to the ethical implications of our decisions. And I no longer assume that machines can solve all of our problems for us. The task of thinking is still ours.

For example, at my most recent technology start-up company (called Aardvark), we took a totally new approach to the problem of search. We created what we called a social search engine. When you have a question, we connect you to another person who can give you a live answer. That arose from thinking about the human needs that people have when asking questions. Instead of defining a query as an information-retrieval problem, and returning a list of Web pages, we treat it as an invitation to a human engagement. That humanist approach is largely responsible for Aardvark's success with users—and for Google's decision to acquire the company last year, to explore how this perspective might inform other traditional business problems.

So why should *you* leave your technology job and get a humanities Ph.D.?

Maybe you, too, are disposed toward critical thinking. Maybe, despite the comfort and security that your job offers, you, too, have noticed cracks in the technotopian bubble.

Maybe you are worn out by endless marketing platitudes about the endless benefits of your products; and you're not entirely at ease with your contribution to the broader culture industry.

Maybe you are unsatisfied by oversimplifications in the product itself. What exactly is the relationship created by "friending" someone online? How can your online profile capture the full glory of your performance of self?

Maybe you are cautious about the impact of technology. You are startled that our social-entertainment Web sites are playing crucial roles in global revolutions. You wonder whether those new tools, like any weapons, can be used for evil as well as good, and you are reluctant to engage in the cultural imperialism that distribution of a technology arguably entails.

If you have ever wondered about any of those topics, and sensed that there was more to the story, you are on to something. Any of the topics could be the subject of a humanities dissertation—your humanities dissertation.

The technology issues facing us today—issues of identity, communication, privacy, regulation—require a humanistic perspective if we are to deal with them adequately. If you actually care about one of those topics—if you want to do something more serious about it than swap idle opinions over dinner—you can. And, I would venture, you must. Who else is going to take responsibility for getting it right?

I see a humanities degree as nothing less than a rite of passage to intellectual adulthood. A way of evolving from a sophomoric wonderer and critic into a rounded, open, and engaged intellectual citizen. When you are no longer engaged only in optimizing your products—and you let go of the technotopian view—your world becomes larger, richer, more mysterious, more inviting. More human.

Even if you are moved by my unguarded rhapsodizing here, no doubt you are also thinking, "How am I going to pay for this?!" You imagine, for a moment, the prospect of spending half a decade in the library, and you can't help but calculate the cost (and "opportunity cost") of this adventure.

But do you really value your mortgage more than the life of the mind? What is the point of a comfortable living if you don't know what the humanities have taught us about living well? If you already have a job in the technology industry, you are already significantly more wealthy than the vast majority of our planet's population. You already have enough.

If you are worried about your career, I must tell you that getting a humanities Ph.D. is not only *not* a danger to your employability, it is quite the opposite. I believe there no surer path to leaping dramatically forward in your career than to earn a Ph.D. in the humanities. Because the thought leaders in our industry are not the ones who plodded dully, step by step, up the career ladder. The leaders are the ones who took chances and developed unique perspectives.

Getting a humanities Ph.D. is the most deterministic path you can find to becoming exceptional in the industry. It is no longer just engineers who dominate our technology leadership, because it is no longer the case that computers are so mysterious that only engineers can understand what they are capable of. There is an industrywide shift toward more "product thinking" in leadership—leaders who understand the social and cultural contexts in which our technologies are deployed.

Products must appeal to human beings, and a rigorously cultivated humanistic sensibility is a valued asset for this challenge. That is perhaps why a technology leader of the highest status—Steve Jobs—recently credited an appreciation for the liberal arts as key to his company's tremendous success with their various i-gadgets.

It is a convenient truth: You go into the humanities to pursue your intellectual passion; and it just so happens, as a by-product, that

you emerge as a desired commodity for industry. Such is the halo of human flourishing.

*Damon Horowitz is currently in-house philosopher at Google. This essay is an excerpt of a keynote address he gave in the spring at the BiblioTech conference at Stanford University.*

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**sherbygirl** 3 days ago

While I appreciate a well-written defense of the value of the humanities, I resent that it takes someone who has a degree in a "more valuable" discipline to help/allow us to be taken seriously. Please don't take this personally, but it's frustrating that people in tech or business are taken more seriously when they talk about the value of the humanities than those of us who are "just" humanists.

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**midevilprof** 2 days ago in reply to sherbygirl

I get what you're saying, sherbygirl, but I also see the value of the piece. It's one thing for us, as humanists, to preach about how valuable our fields are. It's quite another thing for "them" to recognize it and preach it to each other. "They" will likely never look at us and think, "Wow! After years of hearing them talk about how their useless subjects really aren't useless, I finally get it!" I think "they" will be more likely to look at somebody like Horowitz here and think, "Wow... The humanities proved to be beneficial and useful for somebody like me. Maybe he's right. I should study the humanities!"

I just wish there was a way to catch students while they're young and still in college, rather than after years or decades away, when they may decide not to return to an academic setting along the lines of Horowitz and his quest. I applaud him for doing it. Now, how can we convince our 18-year-olds to do it sooner, so that administrators and legislators don't reduce and/or eliminate our departments on the basis of arguments counter to that in this article?

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**girl37** 2 days ago in reply to midevilprof

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I think part of the point of this article is that the author had the experience and maturity to begin posing important questions directly related and relevant to his technological work, which are not qualities that most 18-year-olds possess. --So, maybe having had a taste of the