The 493rd Convocation
Address: "Keeping Our Moral Compass"
By Yali Amit
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Many of you are off to the workplace and in the next few years will be preoccupied with finding an interesting, satisfying, and well-paying job, holding on to it, and advancing in your profession, as well as more mundane things such as paying off students loans and holding on to medical insurance. That is much to worry about, and in today's fast-paced competitive world, and highly uncertain economy, that might be more than enough for a young person to handle. So forgive me if I try to raise one more thing to think about once in a while.

Some of you will find yourselves in a job where your interaction with people is very direct and transparent: doctor and patient, teacher and student, or lawyer and client. But in other cases we find ourselves working in a large organization or institution, and our contact with the people affected by the institution is very indirect. In a financial firm handling pension funds, you will never meet the people whose funds you are managing but you may have a large effect on their lives. Or you may work in a corporation that supplies power for millions of people on one hand, but on the other hand pollutes the environment of the residents living near its power plants.

In our society, organizations and institutions are becoming larger and larger, wielding more and more power. Through our work in these places, we are indirectly interacting and affecting the lives of large numbers of people. So once in a while it may be a good idea to stop and think about these effects and do our personal soul-searching for the institution as a whole.

In our interaction with family, friends, and coworkers—people we know personally—we are constantly performing such moral evaluations and reevaluations. It is part of our everyday life to think and rethink our behavior towards a friend or family member.

In contrast, as members of an institution our interactions are indirect and are mediated by the organization as a whole. So carrying out an evaluation may not seem to be a personal

responsibility. But to some extent it is. Even though we may be simply performing our job as required and trying to do it well, we do bear some responsibility even if we are not part of the top decision-making circle.

Consider as an example the former AT&T technician Mark Klein, who wrote a document in 2004 detailing the mechanism whereby AT&T was assisting the U.S. National Security Agency (NSA) to illegally spy on internet traffic.[1] He then provided this material to the Electronic Frontier Foundation that has since filed a class action law suit. The repercussions of this revelation are still making headlines today. Related information was revealed in 2005 by Russell Tice, a senior employee of the NSA, who claimed the agency may well be eavesdropping on thousands or millions of telephone calls seeking key words of interest.[2] We should also mention the military policeman Joseph M. Darby, who was the first to reveal the photos of the Abu Ghraib torture to the U.S. Army Criminal Investigation Command.[3]

And a couple of examples from the business world: Sherron Watkins, vice president for corporate development at Enron Corp., who in 2001 wrote an internal letter to her boss Kenneth Lay and to auditors in its accounting firm Arthur Andersen protesting the murky accounting schemes of the company. This letter subsequently became a crucial element in the congressional investigation into the Enron affair.[4] Or Noreen Harrington, who in 2003 revealed illegal trading practices with mutual funds at the hedge fund managed by Stern Asset Management. This led to a spate of revelations on such practices in many other investment companies.[5]

Common to all these cases is the size and immense power of the organization or company in question. These are not democratically run organizations. Neither the workers at AT&T or Enron nor the employees of the NSA are asked to vote on organizational policy. Furthermore the outside public regulation of these organizations through Congress or the courts is not very effective, especially without detailed knowledge about their activities. In these cases, no attempt to control their action was possible without employees from inside revealing this information to the public. Reading interviews with these people, we see that they had all gone through a process of individual soul-searching with respect to the morality of the actions of the organization they worked in.

These choices and decisions are never easy. Do I join an institution that will likely engage in unethical behavior in the first place? What actions do I take once I discover unethical behavior? Do I try to work through established channels inside the organization, or do I go outside? Do I operate discreetly or through public advocacy? It is not my goal here to provide answers, but just to raise awareness of these issues.

Let me share with you a case I experienced. My main line of research is Computer Vision—automating, through computer algorithms, the semantic interpretation of images or videos. From pixels to words: Take the pixel values acquired by the camera and produce some information on the content of the image . . . answering questions such as how to find the faces in the image and read the characters in the image, how many cars are in an image of a highway, and so on. Now the various branches of the U.S. military-security complex are very interested in this subject. The Air Force has long been interested in the automatic identification of targets from aerial photos, the Army is interested in developing an autonomous vehicle that can figure its way around on its own, the Department of Homeland Security is interested in automatic face recognition from still and video cameras, and the NSA is interested in automatic detection of key words in recorded telephone conversations. And indeed most of the financial support for this type of research comes from these branches of government.

For a number of years I received such funding, alone and in joint projects with colleagues at other universities. I may have felt uncomfortable with the ultimate goals of the funding agencies, but I decided to ignore this. There were no strings attached to the research, and there were no direct military applications. Moreover, despite the occasional hype you may hear in the media, computer vision algorithms are far from the ability to achieve anything near human performance, and they cannot handle the complex and fluid environments in which they would be deployed. So in the end I would tell myself: "Since I can't really help them anyway, what difference does it make?"

But in 2001–02 the drums of war started beating. Weapons and technology were being brandished as the catchall solution to our security. Ever-increasing surveillance was deployed in

the name of the "war on terror," leading to increasing infringement on privacy and civil rights. We witnessed massive increases in military spending and then the war in Iraq that started five years ago (almost to the day). Deep social, political, and economic problems stemming from long and complex histories could *supposedly* be solved with advanced military technology.

So I did my personal soul-searching. I decided that I could not in good conscience have anything to do with the military establishment, and I ended my contacts with its research agencies. My feelings were very concisely summed-up in the following quote from an article on the neuroscientist Steve Potter, who also refuses funding from the military:

> If a scientist or a philosopher accepts funds from some such a body as the Office of Naval Research, then he's cheating if he knows his work will be useless to them, and must take responsibility for the outcome if he knows it will be useful.[6]

What effect can my decision have? Very little or no direct effect. The outcome of academic research, which is published in journals, can be read and used by anyone, including the military if it finds it useful. But I do believe that refusing funding from these agencies and making this known to my colleagues is a small act of protest against this complex of power and destructive ability that has spun out of control. Moreover if more scientists choose this path, it may perhaps encourage the public to rethink and reconsider the use of destructive and intrusive technology as a solution to what are fundamentally complex social and political conflicts.

The great mathematician Norbert Wiener put it in very succinct words back in 1946. George E. Forsyth, an employee in the research department of Boeing Co., had asked Wiener for a copy of a paper he had written on prediction in time series. Forsyth was hoping these techniques would assist in developing ballistic missile control. Wiener refused to send the paper and wrote the following in reply:

> It is perfectly clear . . . that to disseminate information about a weapon in the present state of our civilization is to make it practically certain that the weapon will be used. In that respect the controlled missile represents the still imperfect supplement to the atom bomb

and to bacterial warfare . . . If therefore I do not desire to participate in the bombing or poisoning of defenseless peoples—and I most certainly do not—I must take a serious responsibility as to those to whom I disclose my scientific ideas. Since it is obvious that with sufficient effort you can obtain my material, even though it is out of print, I can only protest 'pro forma' in refusing to give you any information concerning my past work. However, I rejoice at the fact that my material is not readily available insofar as it gives me the opportunity to raise this serious moral issue.[7]

As I said before, the choices are difficult and many paths are possible. The choice also depends on the personal risk involved in acting, and that of course involves many complex personal considerations. So I will end with two interesting examples involving academic "technical" experts working as consultants to large institutions. In these cases, personal risk was not a major factor. These were very prominent people who could always fall back on their academic jobs.

One example involved faculty at the University of Chicago who were part of the Jason Division, a group of elite scientists, mainly physicists and chemists, recruited by the Pentagon in the 1950s to consult on matters of war and defense. During the Vietnam War a number of these scientists, including two of our faculty, realized there was talk in the Pentagon of using nuclear weapons against the Vietcong, and they decided to act against this. I quote from Professor Robert Gomer, who was for years the head of the James Franck Institute:

> I think I was the main instigator of a study on the use of nuclear weapons in Viet Nam . . .
> It was our purpose to show that using nuclear weapons would be immoral folly, and
> would set an awful precedent but we realized that these arguments would cut little ice
> with the powers that then were. We didn't have to look far for military reasons against
> the use of nuclear weapons.[8]

Here we see an example of individuals making a critical ethical judgment about the organization they belong to, but deciding to work to change things discretely from within, employing the terms of reference defined by the organization itself. Indeed for years, since the report was kept classified, they were criticized for cooperating with the use of nuclear weapons.

And the final example is more suited to this audience because many of you are going off to join the business and finance world. In November 1999, Joseph Stiglitz, then chief economist of the World Bank, was forced to resign from his position, after having tried in vain to change International Monetary Fund and World Bank policies of austerity, privatization, and deregulation that for decades had been prescribed, and often imposed, across the globe, especially in developing countries. He felt that such policies were not only bad economics but also were unethical in the devastation they brought to the lives of millions of people. In the period leading up to his resignation, he had started speaking out in public.

In an interview with the *New York Times* he said, "it became very clear to me that working from the inside was not leading to responses at the speed at which responses were needed," and when dealing with policies "as misguided as I believe these policies were, you have to either speak out or resign." He went on to say: "In a sense, there was a question of personal and professional integrity. . . . Remaining silent when people were pursuing wrong ideas would have been a form of complicity."[9] As I said, there was no personal risk involved here. Stiglitz went on to receive the Nobel Prize in Economic Sciences and is a professor at Columbia University. But his public act has contributed to a change in the public discourse on questions of development, free markets, and the role of government.

In summary, there are many different contexts and different approaches to keeping our moral compass. It may be a public act, or it may be a private act in which we share our concerns with only one other person. But the very fact that we raise these concerns already makes a big difference.

So, I congratulate you all on your graduation, I wish you all an interesting and fulfilling career, and I am confident that if you hold on to your moral compass, and consult with it once in a while, you will all be helping to make this world a better place.

Notes

1. Brill, Mark. "AT&T Whistle-Blower's Evidence," *Wired*, May 17, 2006. Available at

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2. Ross, Bryan. "AT&T Whistleblower Alleges Illegal Spying," ABC News, January 10, 2006. Available at *abcnews.go.com/WNT/ Investigation/story?id=1491889*

3. Hersh, Seymour M. "Torture at Abu Ghraib," *The New Yorker*, May 10, 2004. Available at *www. newyorker.com/archive/2004/05/10/040510fa_ fact?currentPage=1*

4. Pellegrini, Frank. " 'Enron Whistleblower' Sherron Watkins," *Time*, January 18, 2002. Available at *www.time.com/time/nation/ article/0,8599,194927,00.html*

5. Dugas, Christine. "Spotlight Hits Whistleblower," Available at *www.usatoday.com/money/perfi/funds/2003-12-09-whistleblow_x.htm*

6. Baard, Erik. "Make Robots Not War," *Village Voice*, September 9, 2003. Available at *www.villagevoice.com/news/0337,baard,46901,1. html*

7. Letter from Wiener to George E. Forsyth of Boeing, from *Science, Technology & Human Values*, vol. 8, 1983, pp. 36–38.

8. Nautilus Institute, "Authors Comments," *Essentially Annihilated, Nautilus.org/archives/ VietnamFOIA/report/Jasons.html#gomer*

9. Uchitelle, Louis. "World Bank Economist Felt He Had to Silence His Criticism or Quit," *New York Times*, December 2, 1999.

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