

Dear NSA: Long-Term Security Depends on Freedom

It has become impossible in the last few months to escape media reports about the National Security Agency. There are certainly many more pressing problems in the world, but this one is close to home for mathematicians. I think it is time to seriously consider the relationship that exists between academia and the NSA, both the potential for good and the need for caution.

Other people's physical safety often comes before personal freedoms. Traffic laws are one example. Religious freedom does not justify homicide, for another.

Thus it is arguably altruistic, when danger looms, to agree to give up another freedom: specifically, the freedom from unwarranted searches of private property and communications. In the wake of attacks such as occurred on September 11 more than a decade ago and in Boston this year, personal transparency looks like the price we pay in order to see our loved ones live in safety. I also wouldn't want to criticize without first expressing gratitude for the hard work and sacrifices that have prevented more attacks and kept more children from harm.

Constant surveillance, however, whether by algorithms or human agents, comes at a cost beyond merely the uncomfortable feeling of being watched. The existence of databases storing our private communication conveys a certain degree of power to the few with access. Without layers of equally powerful oversight, there is always a temptation for abuse. Even a hint of malignant use of power is enough to alienate many thoughtful citizens, including the very community of mathematicians that the NSA depends on for recruits.

It would be shortsighted for the NSA to push away our top scientists by appearing negligent. Leadership at the NSA evidently realizes the vital importance of public and scientific support. A portion of their effort is dedicated to improving all levels of math education and supporting open, unclassified math research in the United States. Many mathematicians earn NSA funding for their research, their students, and their universities through an annual grant competition administered by the American Mathematical Society. This program specifically avoids any secret research such as cryptology. (Full disclosure: my future students and I are currently expecting this support starting in the next fiscal year.)

This sort of spending by the intelligence agency has two main goals: it aims to secure goodwill, from academics at least, and it hopes to ensure that the U.S. will have enough ready-to-use brain power when future threats demand it. Meeting these goals demonstrates that an

increase in security can come as a byproduct of (academic) freedom. Unfortunately, the converse is true as well. If power is abused (and freedoms unnecessarily curtailed), then security is undermined.

When I hear about a misuse of government power, my reaction is not to disband the agency entirely. Nor do I point to their constructive work and use it to excuse the bad. Instead, I want to see checks and balances go into action: an investigation by an impartial, separate, and equally powerful arm of government. If rules are broken, then there has to be a penalty. If the rules are unclear or inadequate or not enforced, then they need to be rewritten clearly and with provision for enforcement. If the rules themselves are unwise, unethical, shortsighted, or obsolete, then it is time for new rules. If the overreaching piece of government does not move in the direction of accountability, then no amount of constructive efforts and positive PR can save it. Here are some naive suggestions for new leadership at the NSA:

- 1) Invite more judicial/congressional oversight, perhaps by strengthening what currently exists. The oversight should have the power to suggest penalties for rules broken (intentionally or not) and to make recommendations regarding any rules that are unclear, inadequate for protecting privacy, or not easily enforced.

- 2) Reiterate publicly a willingness to abide by any changes that Congress approves.

- 3) Avoid the error of chasing away the best mathematical talent in the U.S. by allowing the appearance of unwarranted intrusions. We might need that talent when the next threat arises.

- 4) Continue to fund free and open research and education in mathematical sciences but be aware that it won't buy unconditional support from academia.

- 5) Be patient. Most of the above suggestions are what the great people at the NSA already want and are working for. The recent declassification of secret court opinions and internal audits, increased funding for oversight, and the efforts to get feedback from the public constitute a good beginning. There is required much patience on the part of both those with security clearance and those of us without it. We will have to wait for full information; they will have to wait for full trust to be restored.

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