THE CIRCUMSTANTIAL CASE AGAINST BRUCE IVINS GETS WEAKER

It seems we're going to be discussing anthrax in detail again. And in anticipation of those discussions, I wanted to challenge the notion that the circumstantial evidence against Ivins remains strong.

The whole case depends on the FBI's contention that a flask Ivins had—RMR-1029—was "the murder weapon." But in fact, the FBI only has proof that Ivins had what might be one of eight or more potential precursors to the murder weapon. Their efforts to equate the two ignore some interim steps about which they seem to have little evidence (and what they have they're not examining very closely).

So here's my summary of the circumstantial case against Bruce Ivins. (Jim White gave me a ton of scientific help with this, but the errors surely result from my own misunderstanding.)

When US Attorney Jeff Taylor announced FBI was closing the investigation in February 2010, he gave the following 7 pieces of evidence that Ivins was the culprit.

> First, we were able to identify in early 2005 the genetically-unique parent material of the anthrax spores used in the mailings. As the court documents allege, the parent material of the anthrax spores used in the attacks was a single flask of spores, known as "RMR-1029," that was created and solely maintained by Dr. Ivins at USAMRIID. This means that the spores used in the attacks were taken from that specific flask, regrown, purified, dried and loaded into the letters. No one received material from that flask without going through Dr. Ivins. We thoroughly investigated every other person who

> could have had access to the flask and we were able to rule out all but Dr. Ivins.
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> Second, as a renowned expert in the production and purification of anthrax spores, Dr. Ivins was one of a handful of scientists with the capability to create spores of the concentration and purity used in the attacks. The affidavits allege that, not only did Dr. Ivins create and maintain the spore batch used in the mailings, but he also had access to and experience using a lyophilizer. A lyophilizer is a sophisticated machine that is used to dry pathogens, and can be used to dry anthrax. We know others in Dr. Ivins' lab consulted him when they needed to use this machine.
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> Third, in the days leading up to each of the mailings, the documents make clear that Dr. Ivins was working inordinate hours alone at night and on the weekend in the lab where the flask of spores and production equipment were stored. A review of his access records revealed that Dr. Ivins had not spent this many "off hours" in the lab at any time before or after this period. When questioned about why he was in the lab during these off hours prior to each of the mailings, Dr. Ivins was unable to offer any satisfactory explanation.
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> Fourth, the affidavits indicate Dr. Ivins had engaged in behavior and made a number of statements that suggest consciousness of guilt. For example, one night shortly after a search warrant was executed on his house, Dr. Ivins took highly unusual steps to discard a book and article on DNA coding while under 24/7 surveillance. In addition, he had submitted a questionable sample of anthrax from his flask of parent spores

> to the FBI, presumably to mislead investigators. He had also made far-reaching efforts to blame others and divert attention away from himself, and had made threatening e-mail statements to a friend regarding the case. Recently, he had detailed threats in his group therapy session to kill people who had wronged him, after learning he might be indicted.
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> Fifth, as reflected in the court documents, Dr. Ivins had a history of mental health problems and was facing a difficult time professionally in the summer and fall of 2001 because an anthrax vaccine he was working on was failing. The affidavits describe one e-mail to a co-worker in which Dr. Ivins stated that he had “incredible paranoid, delusional thoughts at times,” and feared that he might not be able to control his behavior.
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> Sixth, throughout his adult life Dr. Ivins had frequently driven to other locations to send packages in the mail under assumed names to disguise his identity as the sender. He had also admitted to using false names and aliases in writings. In addition, he was a prolific writer to Congress and the media, the targeted victims in the anthrax attacks. Law enforcement recovered 68 letters to such entities from his house in a Nov. 1, 2007 search.
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> I’ll conclude with one more point. The envelopes used in the attacks were all pre-franked envelopes, sold only at U.S. Post Offices during a nine-month window in 2001. An analysis of the envelopes revealed several print defects in the ink on the pre-printed portions of the envelopes. Based on the analysis, we were able to conclude that the envelopes used in the mailings were very likely

> sold at a post office in the greater Frederick Maryland, area in 2001. Dr. Ivins maintained a post office box at the Post Office in Frederick, from which these pre-franked envelopes with print defects were sold.

Here's what remains of each of these 7 pieces of evidence:

1. The spores in the attack came from RMR-1029 and Ivins controlled access to that flask

The certainty of this claim was seriously challenged by both the National Academy of Sciences report and subsequent reporting on several grounds.

First, the NAS study concluded only that the genetic analysis was consistent with the spores being derived from RMR-1029.

> The results of the genetic analyses of the repository samples were consistent with the finding that the spores in the attack letters were derived from RMR-1029, but the analyses did not definitively demonstrate such a relationship.

That only says that whoever prepared the (probable) two separate batches of anthrax may have started with anthrax obtained at some point from that flask. NAS holds out the possibility the anthrax producer may have gotten it from somewhere else, that it was possible to get similar genetic results from other means (that is, suggesting that's not the only way to have produced the samples found in the letter).

An even bigger problem is the complete lack of attention on what happened to the anthrax *after* it came from Ivins' flask, if it did. The NAS later emphasizes this interim step.

> The flask designated RMR-1029 was not the immediate, most proximate source of the letter material. If the letter

> material did in fact derive from RMR-1029, then one or more separate growth steps, using seed material from RMR-1029 followed by purification, would have been necessary. Furthermore, the evidentiary material in the New York letters had physical properties that were distinct from those of the material in the Washington, D.C. letters.

What would have to happen to prove that Ivins took spores from his flask and prepared the anthrax used in the attacks is to prove, first of all, that his lab and his skills could have produced the differences from the RMR-1029 flask (for example, could have introduced the silicon and tin found in the attack samples). In addition, you'd have to explain the variables introduced into the NY samples but not the DC ones. And you'd have to prove that all those procedures were possible in Ivins' lab.

But there's another problem with the claim that the anthrax had to have come from Ivins' flask. Remember, what the FBI did was identify four morphological characteristics of the Leahy anthrax, then see which of the samples of anthrax in their repository had those same characteristics, which turned out to be 8-10 samples. It then investigated everyone who had access to those samples, and basically eliminated everyone but Ivins.

But such a process of elimination only works if you're sure the repository of anthrax samples the FBI had represented all the possible samples from which the anthax could have come. The NAS wasn't convinced that the repository was that comprehensive.

> The FBI repository was developed from an intensive effort to identify laboratories having access to the Ames strain; however, we cannot conclude that this approach identified every laboratory or was a comprehensive representation.

For good reason. To develop the repository, the FBI depended on the records of transfers between labs. But as Noah Shachtman reported, the FBI had proof their repository was incomplete in 2003.

> In December 2003, while conducting an inventory of one of USAMRIIDs biocontainment suites, investigators discovered 22 undocumented Ames anthrax samples. They began to fear that the repository they had spent nearly two years assembling might have gaping holes in it. So for the first time, the FBI decided to scour USAMRIID for any vials they had missed.
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> The institute staff fumed at the search—ongoing experiments would be disrupted, they shouted. (Hank) Heine, Ivins' coworker, decided to exact a bit of revenge on his FBI handler. While the agent was collecting samples in his lab—dressed in full protective gear—Heine handed her a vial and told her it was a deadly plague strain. The vial started shaking in the agent's gloved hand. Heine cracked up. "They were entirely dependent on me to identify everything in every box," he says. "I could've held up a critical piece of evidence, said it was something else, and put it aside. There's no way they would've known."

That was almost two years after they first got samples for their repository, and there's no indication the FBI did this kind of census of samples in Batelle (which had the one non-USAMRID sample that matched RMR-1029) or Dugway (from which Ivins' precursor samples derived). And as Heine pointed out—and NAS did, too—since the FBI was completely dependent on the scientists to collect their samples, it meant that anyone trying to hide a sample could have done so easily.

> A final challenge was that the repository collection process was based on the integrity of the individuals asked to provide samples. If the motive for the repository was to identify the source of the letter material, standards of custody of evidence would dictate that agents of the FBI should have obtained the samples. In most instances, holders of the material were asked to provide samples and send them in. The sender could have been the instigator and may not have complied with instructions, as the FBI alleges with respect to Dr. Ivins.

The FBI's entire case against Ivins relied on their claim that the sample had to be the precursor to the attack anthrax based on process of elimination. But not only does FBI not have the record-keeping to prove they had accounted for all samples nor the proof that their repository represented a valid cross-sample, they've got little to prove that the differences between the anthrax used in the attacks could have been introduced in Ivins' lab, as they suggest they were.

2. Ivins was one of a handful of scientists with capability to make the anthrax and he had access to the equipment—a lyophilizer—to make the spores

NAS refuted the claim that you could conclude anything about the scientific skill or equipment needed to produce the anthrax used in the attack.

> The committee finds no scientific basis on which to accurately estimate the amount of time or the specific skill set needed to prepare the spore material contained in the letters. The time might vary from as little as 2 to 3 days to as much as several months. Given uncertainty about the methods used for preparation of the spore material, the

> committee could reach no significant conclusions regarding the skill set of the perpetrator.

This is again the problem of pointing to Ivins' flask as a precursor without explaining how that precursor anthrax was prepared to result in the two different samples used in the attack. And while FBI points to the lyophilizer, they don't consider things like the equipment needed (perhaps a fermenter) to produce the volume used in the attack, nor the skills and equipment to introduce things like silicon into the samples. These issues might disqualify Ivins just as readily as a lyophilizer would disqualify other scientists.

3. In the days leading up to the mailings, Ivins spent an unusual amount of time alone in his lab at night, giving him the opportunity to make the anthrax

This gets back into the problem of explaining how Ivins' sample was purportedly prepared. As noted, NAS' experts gave the range of time it would take to prepare this sample as between 2 days and several months.

> As a result of the different possible production schemes that might have yielded product with the observed characteristics of the evidentiary materials, the committee finds that the time required for this work could be as little as 2 or 3 days to as much as several months. The differences are based on different estimates of the time required for propagation, purification, and drying, among other variables, as well as the state of the starting material.. In particular, it is not known whether some of the initial steps might have occurred well in advance of the letter attacks. The committee cannot resolve these distinctions because it had no information identifying a production method or the steps involved

> in production.

Even the guy in charge of this investigation, Edward Montooth, admits they don't have the timeframe nailed down.

> "We still have a difficult time nailing down the time frame," he says. "We don't know when he made or dried the spores."

But the value of the evidence about Ivins spending time in his lab in the nights before the mailing window for the anthrax relies on the short end of this time frame: it assumes that Ivins made the anthrax in 3 or 8 day windows leading up to the two dates the anthrax was mailed.

If it turns out the anthrax prep took much longer—two months, for example—then the same lab records that are one of the most incriminating pieces of evidence given the FBI's original theory would then work in reverse, showing that Ivins *wasn't* in his lab during the key period needed to culture the attack anthrax.

4. Ivins acted guilty by, among other things, submitting a questionable sample of anthrax to the FBI

There are a number of key reasons FBI argues Ivins acted suspicious. A key one is that he gave a sample purported to be RMR-1029 in April 2002 that tested negative for the four morphological variations ultimately used to ID the anthrax.

As a threshold matter, NAS argues that the proof this was a doctored sample is weaker than the FBI maintains, partly because the FBI's statistics were off and partly because it didn't account for problems with the FBI's own repository protocol or aspects of colonies.

> The genetic evidence that a disputed sample submitted by the suspect came from a source other than RMR-1029 was

> weaker than stated in the Department of Justice Amerithrax Investigative Summary.

That said, the chances of it being doctored are still significant.

But even assuming the later sample was doctored, there are a couple of other odd details about this. First, Ivins submitted a sample in February 2002 that, though it didn't comply with the FBI's sampling protocol, did ultimately test positive for the four morphological variations in question. Then, after being asked to resubmit, he submitted the questionable sample in April, which tested negative for the morphological variations. Ultimately, in 2004, after discovering USAMRID's record-keeping was a clusterfuck, they found additional samples that Ivins should have turned over as well as RMR 1029.

But if Ivins submitted a dummy sample in April 2002, then why did he submit what appears to be a good sample of RMR-1029 in February 2002?

5. Ivins was mentally ill

Ivins apparently was mentally instable. But I'm not sure how you distinguish between someone who was mentally ill and therefore tried to kill a bunch of people and someone who responded to being in the middle of a WMD attack who therefore reacted in unpredictable fashion that appeared suspicious?

6. Ivins has a history of driving places to mail things as well as writing letters to politicians and the press

There are two parts to this argument: an explanation for why Ivins would have driven to Princeton to mail the anthrax, and an explanation for why Ivins allegedly chose to send Daschle and Leahy, in particular, deadly anthrax.

The former invokes the whole theory about Ivins trying to attract attention from the sorority

KKG. That whole story was pretty shaky from the start, not least because it doesn't explain why Ivins would drive to Princeton to mail anthrax from a mailbox somewhat close to a KKG office, rather than sending it from closer to DC from a place directly associated with a KKG house. The psychological profile of Ivins did add one potential explanation for this: "Princeton represented his father," who had mocked Ivins when he was a child. Whatever. I still find the whole KKG theory a big stretch, particularly given that the FBI hasn't figured out how Ivins made the anthrax in the first place.

But then there's the question of why he would send anthrax to Leahy and Daschle. The FBI affidavit supporting search warrants suggests that Ivins targeted them, in part, because they were pro-choice.

> In 2001, members of the Catholic pro-life movement were known to be highly critical of Catholic Congressional members who voted pro-choice in opposition to the beliefs of the Catholic Church. Two of the more prominent members of Congress who fell in this category were Senator Tom Daschle, then Senate Majority Leader; and Senator Patrick Leahy, Chairman of the Senate Judiciary Committee, both recipients of the 2001 anthrax mailings.

Ivins' will—which threatened to give a third of his estate to Planned Parenthood if his wife prevented him from being cremated—pretty much refuted that as a motivating factor. The psychological profile did refer to a letter Daschle sent DOD in June 2001 raising concerns about the anthrax vaccine.

They also suggest that Ivins wanted to press for an anthrax vaccine—a theory which would incriminate a number of other people in government to a much greater degree, and a theory which—as Shachtman writes—doesn't have much evidence as far as Ivins.

> The Justice Department asserts in its investigative summary that Ivins mailed the letters to gin up support for an anthrax vaccine, offering a few ambiguous emails and comments to friends and investigators as proof. If there's any further, credible evidence to support this notion, *Wired* couldn't find it in the thousands of pages of case documents released by the government or in the hours of interviews conducted with the investigators. Montooth concedes it's a placeholder rationale at best

All of these details—the KKG theory and the Daschle-Leahy theory—remain very very weak. At the very least, they suggest the FBI should have looked harder for accomplices to Ivins, which, having been confronted with a convenient suicide in 2008, they appear not to have done.

7. Franking evidence shows the envelopes used in the attacks could have been purchased in Frederick, MD

The franking evidence, which shows that the envelopes used in the attacks came from a particular print run, is some of the stronger evidence in this case.

But the franking evidence doesn't lead exclusively to the Frederick, MD, post office. Envelopes from that print run might have been sent to a whole slew of MD and VA post offices serviced by the Dulles Stamp Distribution Office, including at a minimum Cumberland, Elkton, Glen Burnie, Lutherville, Severna Park, and Galena, MD, and Machipongo, Arlington, and Fairfax, VA. In other words, this evidence, while it might include Ivins, would also include a great many other possible suspects.

And all of this lacks anything that ties Ivins specifically to the Princeton mailboxes, like anthrax residue in his car or fibers from his car in the envelopes.

At a minimum, this suggests the FBI would have had a hard time proving their case against Ivins (just the abysmal record-keeping of USAMRID alone would have introduced a great deal of doubt).

The big problem, though, is that the interim step in this case—the process by which something genetically like RMR-1029 had the significant changes introduced as it was turned into a murder weapon—remains significantly unexamined. That's precisely the area where new questions are being asked. Or more accurately, questions that were asked in 2008 remain unanswered.

That, and the guy who has been refusing a more broadbased examination of the FBI's work on this case for years is about to get two more years as FBI Director.