Prof. Postol: Errors & Misinfo in The Bulletin of the Atomic Scientists

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#Nima

You may go to the second part of our discussion.

#Guest

Yes, and I was about to say, speaking of freedom and academic integrity, I had quite an experience on my trip from Germany on the airplane because the airplanes now have reasonably good Internet support. And so I'm sitting there, and the first thing I get is an article that was just published by the Bulletin of the Atomic Scientists that, if I want to be... It was so inaccurate that it wasn't even wrong. It was just completely without merit. And of course, a day later—I'll show you this in some slides—a day later I get an email explaining to me how the Bulletin is this expert source of expert scientific information, and you should give them money because they are real experts and they are informing our society about the critical national security issues that we should all be concerned about.

So it's quite an interesting set of issues that have come up. Why don't you just show slide number one? Okay, so there are serious errors and misinformation in this Bulletin of the Atomic Scientists article about a false alert that occurred in 1995 in Russia. It was an alert. I'll discuss it in some detail, depending on how much time we have. And the article said nothing correct about this false alert—nothing. And it provided no information about what the false alert was. Instead, it had all kinds of discussions about how this false alert occurred when the Russians were losing a war in Chechnya, how the Russian economic downturn—all of these things that had nothing at all to do with this false alert—were somehow rolled into this article as somehow being associated with the false alert.

It was just amazing. It was a totally amazing fabrication of irrelevant things that may have occurred at the same time but had nothing to do with the false alert. It was just remarkable. Now, in all fairness, I want to take a moment to point out that this article was written by two very young, very junior people. I won't talk much about them, but I'm a little concerned, quite honestly, because they did such a bad job. I feel bad for them because these people are young scholars. And they—you could argue they should have known better. But my first question is, since I'm an educator, how did

their supervisors or the people they deal with let them do this? What was the role? I mean, one of them's from Princeton.

#Nima

Maybe they're working for some sort of NGO.

#Guest

Well, maybe, maybe, but one of them is from Princeton, the Science and Global Security Program there, which, if you look at my Google profile, it falsely states that I was thrown out of the program there. In fact, I resigned from the program after the program did something that was unethical—an unethical scholarly thing I could talk about. And so I resigned in protest, even though I was 30 years on the board of this program. So it wasn't as presented in my... I'd have to spend all my time correcting these false statements that get into, you know, get into Wikipedia. You know, it's really disturbing. But anyway, this article was simply ridiculous. And let's go to slide two. So the article was erroneous.

It was published on April 13th. The next slide shows you what I received on April 14th, the day after. Dear Ted, in a world facing escalating nuclear risk, accelerating climate disruption, and rapidly advancing technology, having access to clear and credible information has never been more essential. The Bulletin is known for authoritative, science-based journalism, and our online and in-person programming complements our coverage to unpack complex, urgent issues. Yet this article is totally, like I said, it's not even wrong. It doesn't even come close to being wrong. But we're not done yet. To power this work and advance meaningful solutions, we need an all-hands-on-deck effort.

You can help strengthen this movement. So this is what I get a day after I get this article that is totally misleading, filled with false information. Let's go to slide four. Here's just the beginning of the article as mocked up. The article has this lavish photograph, which you see below. The photograph—this is the first thing you see in the article—the photograph says the rocket, it's talking about this rocket, which caused this false alert. The rocket carried instruments about 200 miles, 320 kilometers, into the atmosphere. That's not correct at all. It's simply wrong. This rocket was on a very high-altitude trajectory. It went up to almost 1,400 kilometers high. It was extraordinarily high.

That's the relevant piece of information about this trajectory, because the Russians had never seen a rocket launch from this particular location that went so high. So what caused the alert was the fact that the rocket went so high relative to anything they had seen earlier. It had nothing to do with it traveling laterally by 200 miles. I mean, it's totally misleading. So if we go to slide four, you just see it's slightly blown up. And slide five, I'm sorry. So, all right. So this is an article by the Bulletin. Now,

let me resummarize the claims. You go to the Bulletin, give them money, in fact. Oh, incidentally, I was told that I shouldn't write—I'm not acceptable as a writer for the Bulletin a few years ago, so I stopped writing for them.

I would have stopped anyway because of these articles. But I'm told, give them money because, you know, these are the guys who are holding the truth, and they're scientists, they're experts. And because they're scientists and experts, they're giving you information that helps you be a responsible citizen—citizen of the world and the United States. And yet, nothing in this article is correct about what caused this alert. They're talking about weird things like... I had some notes here to look at myself. I mean, it was so weird, I can't even recall all the details that they talk about. They show a complete misunderstanding of satellite early warning systems. They talk about things like constraints on providing launch information about your missiles because of what they call queuing that the satellites would use.

There's no way the satellites would use cueing. The satellites are designed to survey the whole Earth. You don't need—you're not cued. If someone tells you there's going to be a launch and you have a satellite that can look at the whole Earth like the United States has, you see it. You see the launch. You don't need to be cued to it. You just see the launch because you're surveying the whole Earth. It's ridiculous. Why would cueing be an issue to you? It's just everything is fabricated, showing a complete absence of understanding of the most basic facts about how early warning systems function, and then using these misstated facts to come up with proposals which are totally ridiculous. So this is really—but all right.

So this is an article—remember now, good, this is a good slide. Remember now, this is a journal. It has an editor. His name is John Mechlin. The editor decides what's published. The editor has a responsibility to determine whether or not an article is accurate. Even a newspaper article goes through some level of review—you know, at least you try to get a date right, you know. And so I just, out of curiosity, I did a Google search. I just said to myself, what if I were going to write an article about this and I knew nothing about it? So I asked the question of Google: what was the cause of the Russian false alert in 1995? Well, I won't go through the details here, but basically, the Google search gives all of the right answers.

In other words, if you looked up on Google, if you just did a Google search, you would have gotten information that was reasonably accurate. There are some minor details that are not quite right, but I'm an expert in this. I've spent years working on this particular problem. You also get references to articles. You see on the right, you see "Norwegian Rocket Incident," Wikipedia. The Wikipedia article is very comprehensive. You get a Union of Concerned Scientists article. You get an article that I co-authored from over—it must be 25 years ago—"False Alarm Nuclear Danger" by Jeff Forden, Pavel Podvig, and Theodore Postol. All you have to do is read these articles and you'd know everything you needed to know at a reasonably competent level about how this false alert occurred.

You got nothing. If you believed anything this article from the Bulletin was saying, you would have no idea what you were talking about, and you'd be wrong in the things that you talked about and proposed. It's that striking. So if you want to see how striking this is, in the next slide I just show you the Wikipedia—you know, it goes on for quite a ways—but you can see an image of the rocket that was launched. You can see a map, none of which are in this article from the Bulletin, showing you the launch point. And, you know, if you read this and you took it seriously, you would know infinitely more than the authors of the article know, because it's clear they don't understand all of these basic facts of information.

They didn't even check Wikipedia. Now, to emphasize this further, if we go to the next slide, this is from the Wikipedia article. I won't go through this, but this shows you articles you could look up that talk about this false alert. And why would you write an article and show no knowledge, not even a basic knowledge, of how satellites function when the issue has to do with early warning satellites, and publish an article? And how would the editor of the journal, Mr. Mecklen, who claims to be an expert himself—incidentally, he's not my favorite person, so I'll use my own language—he's technically illiterate. His word is worthless. You know, I dealt with him as an editor.

He would tell you one thing and do another. He would try to mislead you when he was editing an article. I mean, this is not... I've never dealt with an editor who did this before. This guy's unique. And then he publishes this article, which was clearly not even... A child could have fact-checked this article and found it was just nonsense. A child. You get a bright high school student who knows how to use, you know, ChatGPT or something, and you would know that this article was nonsense. This is the Bulletin of the Atomic Scientists. It's telling you that it's an expert organization. It's touting itself as a scientific national security source of wisdom. And it's publishing total nonsense, total nonsense.

To go to slide nine, it's just an image from another article that I had written about this 10 years ago. But slide 10 gives you some points that I want to make. First of all, what is the problem, and how can it be solved at the Bulletin? The Bulletin has a long history. I was writing for the Bulletin over 40 years ago. At that time, there were serious people involved in overseeing the Bulletin. Now it's a social club. It's a social club of people who are telling themselves they're good people. You know, they know better than you and I, and they're going to tell us how to manage the world and do good things to keep the world from being destroyed by nuclear war or climate change, another issue I'll mention briefly.

So point number one is, this article is only one example of articles that are routinely published by the Bulletin, where the scientific accuracy and its contents are in error or completely without merit. This is only one article. I could come up with zillions of articles. And I'm going to try to talk to the board of the Bulletin. So I'm saying this publicly. If I don't talk to the board of the Bulletin, it's not because

I'm not willing to, it's because they're not willing to talk to me. I'm a scientist of some repute, and I think I can tell them things that they should want to know. So I'm planning to talk to the board. We'll see if that happens. You can ask me about it sometime in the future. All right.

The Bulletin—I know for a fact that the Bulletin has no process for reviewing articles, none. Now, any journal that purports to be a scientific journal has an extensive review process. And the reason you do that is, even if you're an expert, you want another expert. In fact, the reason I was told that the editor, Mr. Mecklin, doesn't want to deal with me ever again was because I was insisting that he get an article he didn't want to publish reviewed. Then it turned out he lied to me. Incidentally, I have all the emails, so anybody who wants them—he lied to me about the review process because he didn't get reviewers. And then he tried to claim that the review process was secret. Now, this is such a joke.

The review process—the identity of the referee is generally kept from the author, for obvious reasons. But you don't keep the review secret. The review has to be... In fact, I resigned from the Princeton group because I found out that they had used a slanderous letter against me that was secretly sent to them, against me and the article I was trying to publish, and that they had never told me about the letter or informed me about them using it for their review. I said, if you're going to do this, you are violating the principles of refereeing. This article contained amazing statements about me. For example, that I was a Holocaust denier. I actually got a hold of this letter—a Holocaust denier. So this piece of garbage was written, and they looked at it.

They treated this letter as if it was serious. Keep in mind that I was on the board of editors. I wasn't—I mean, it has to be separated in this case because I was publishing in the same journal. I was on the board of editors for 30 years. The three editors who were involved in this case were all former students of mine. Now, let me tell you, Nima, if I ever get a letter telling me that Nima is a, you know, whatever—I don't care what it tells me—if I ever get a letter that's being circulated behind your back, I promise you that you will be the first person to receive a copy of it. You know, that's not appropriate. It's not appropriate to keep slander behind a person's back secret. You know, someone's writing secret letters behind your back—I don't care if it's true—you have a right to know about it.

So, you know, this is kind of outrageous behavior I've been subjected to by the Bulletin and actually the Princeton group, too. And, of course, one of the authors is from Princeton, so from the Princeton group. So anyway, let's go back to slide 10. All right, let me make a point here. I've also done a lot of work on climate change. I haven't talked about it—you know, that's another discussion—but I know quite a bit about climate change, the scientific foundations of climate change. I can tell you that the articles on climate change in the Bulletin are almost always nonsense or outright misinformation. Okay? And I have tried to make that point to Mr. Mechlin, you know, because I was trying to say to him, why don't you get referees involved? You're worried about climate change?

Fine. Have some people who know something about the science reviewing articles that you publish, instead of publishing any piece of garbage by somebody who has a concern that's based on their ignorance. The articles are typically a concern that's based on the ignorance of the individual writing it. You know, oh, I don't understand why the weather is what it is today—it must be climate change, you know. It's incredible. So this Bulletin is telling you, as you would see from the letter I showed you, they're telling you about nuclear safety and nuclear war and climate change, and none of it is backed up by any form of academic expertise reviewing these articles.

They're just what Mr. Mecklin decides he wants to publish without oversight from any other parts of the Bulletin. So this deals with the Bulletin as a science advisory committee—I don't know what they do. They don't do anything. I wrote the science advisory committee a few years ago before they threw me out, and I said, you know, you're not publishing accurate information on climate change. Here are some articles that you ought to be aware of. I sent them articles. These are refereed scientific journal articles. And I got a letter back—well, I got a letter back from the guy who was then the chair, this guy Bob Rosner, who's a distinguished professor of public policy at the University of Chicago. He's distinguished.

I can't find any articles by this guy on public policy—none. But he's distinguished, and he writes back, "Well, I talked to some of my friends, and they don't agree." Well, I'm a scientist. You're supposed to be a scientist. What do you mean, your friends? What do they not agree with? So that's the science advisory committee. So they do have some people, they do have some potential scholars, some scholars who have potential to be reviewers. But if you're going to review an article that's not inside your field of activity, you have to do some work. You have the training. You know, if you're a well-trained scientist, you can do it. You know, a lot of the things I've talked about over the few years I've been doing things on the web are things I learned about.

I'm a well-trained scientist. I can go and look something up. I can very quickly understand it because I have all the technical foundation to understand something that would take a person without the training a long time to understand. And it's good for me, frankly, because it broadens my understanding of all kinds of issues that I should know about. Although, you know, we all have limits on our time and energy. And at the same time, I'm able to translate this stuff into solid, understandable technical discussions that the public can absorb and thereby help the public make more informed decisions for themselves.

In other words, my objective is to help people understand enough of the basic, accurate facts that they can then decide for themselves which of the different policy alternatives could make sense. I'm not here to tell you what to think. That's my position. I'm here to help you understand the issues, and it's your job as a citizen of the world and of your country to think it through and decide what you believe, given your values and the values you think your country should be emphasizing, how you're going to deal with a given set of problems. That's what I try to do. So anyway, that's the situation with the article. Do I have a few minutes to talk?

#Nima

Yeah, yeah, we have.

#Guest

Okay, so let's take a jump and talk about what this event actually was, because it is a very interesting event. Let's jump to slide 29. Okay, this is the Russian experience, the false alert of January 25. If we go to the next slide, anybody who had put real energy into understanding this alert, which I did, would have asked the question, why didn't the dog bark? This is what it sounds like. What happened is a rocket—let's go to slide 31—a rocket was launched. This is a four-stage rocket. I won't spend a lot of time talking about this rocket, but if we go to slide 35, we would see this is the powered flight profile of the rocket. And basically what happened is, if you look at the, uh, the, um, above 50 kilometers—so, uh, you look at the set of points above 50 kilometers, out to maybe a hundred kilometers altitude—what happened is you had a third rocket stage. The first two rocket stages burnt out below 50 kilometers. Bear in mind, this is a scientific rocket, so the guys who have built the rocket, they're scrounging for pieces of rocket motors so they can put something up to high altitudes for an ionospheric experiment at a cost that they can afford, because they can't pick up the phone like Lockheed does and say, build me this rocket stage.

So they scrounged a couple of stages from old surface-to-air missiles just to boost the thing up, and then they had a real rocket, a NASA rocket stage, to propel the payload from roughly 52 or 53 kilometers up to an altitude of maybe 100 kilometers before a fourth stage began burning. Well, it turns out that if you go to slide 36, if you look at the burnout events associated with a Trident II or a Trident I ballistic missile, there are events—I won't go into details—that you can see on a radar, a long-range early warning radar, that you could recognize, but you can't see in detail.

So for example, you see the rocket motor burning because the rocket motor plume has a radar reflection. When the rocket motor turns off, all of a sudden the plume disappears. You can still see the rocket. You can't see—you see a blob, you know, a point of light is the rocket. But you know that the rocket plume was burning to a certain altitude and then it turns off. Well, does that look like a rocket? How do I classify this rocket? Well, maybe it's a Trident II, because when I see this, I don't see the lower stages because the curvature of the Earth stops me from seeing them. But I see this upper stage, and it turns off at an altitude that's associated with a Trident II, you know, first stage burn. Wow.

If this is an early warning radar, this is not a good thing. I mean, I'm not exactly happy seeing this event. So if I go to slide 37, this shows you the full trajectory of this rocket. The little red curve you see below is one of the lower stages, which I see with the radar. Now, the radar is looking—unfortunately, I don't have—let's go to slide 40. Slide 40 shows the fan of the particular radar that detected the launch. So what the radar saw was a rocket motor that turned off, couldn't see

anything else, at an altitude that could have been, you know, a Trident ballistic missile. Now, why would this cause an alert? Well, the reason it could cause an alert is if we go to slide 44.

#Guest

My concern would be that at the apogee, if this were a Trident missile, I would be detonating a nuclear weapon. And the nuclear weapon would cause an ionized layer in the ionosphere, and the radar would be blinded. It would be as if I took a metallized blanket and threw it over the radar. So now the radar can't see beyond this layer of ionized air at high altitudes. So the net result is I'm basically blind. So if we go to slide—I'm sorry here—if we go to slide 55, the radar is looking out and there's a layer of ionized air. You see it at 50 kilometers. You see a slightly flat but curved hatched area. That shows you the area, the volume of sky that the nuclear detonation has ionized. And beyond that region of sky, the radar cannot see. The radar is blocked.

And so if I go to the next slide, this means that the radar cannot see ballistic missiles that are coming in from the North Atlantic. So the purpose of detonating a nuclear weapon at high altitude, in close, would be to blind the radar so it cannot see the developing attack that it would otherwise see, because it could see longer range before the nuclear detonation occurred. Now, this is a crazy attack, I want to be very clear. But it's an attack that both the United States and the Russians have worried about. The only reason— you know, this is a very esoteric thing. You ask, how the hell do I know about it? Well, it's because I studied nuclear war. I studied nuclear war inside the Pentagon, and I did my own calculations because I wanted to understand what I was doing.

And so when I saw this, I knew immediately that the Russian response was due to the danger of this unknown rocket being part of a precursor nuclear attack on Russia. That's what the system was responding to. I gave a talk at a Stanford seminar sometime after I had begun to analyze this. And in the audience was a Colonel General, retired, who had been commander of the Moscow Early Warning Center. Lovely man, I got to know him quite well. And he says, Ted, you figured it out. He says, this is exactly what we were always worried about when we were in. So now the natural question that I asked is, well, why? Let's go back to slide 56. Why didn't the Russian early warning satellites see the launch of these submarine-launched ballistic missiles in the North Atlantic?

And the answer turned out, after enormous amounts of work, that the Russian satellites are unable to look directly down at the Earth. There's a technical discussion about why that's the case, and we can't do it here for now, but if people are interested enough, it could be a subject for further elaboration, because it's a very interesting problem. But the Russians had not solved the problem of looking down at the Earth, which the United States had solved. Incidentally, they still have not solved this problem, which is a great surprise to me. So the Russians have no satellite system that could tell them that they're under attack from the North Atlantic.

The warning of attack from the North Atlantic they have is from their radars. So tampering with those radars, like the Ukrainians tried to do in Armavir—it was a radar looking south in that case,

into the Indian Ocean—attacking those radars or tampering with them could precipitate a high level of alert in the Russian warning system, because the Russians would say, why is this happening? Who's doing it? I don't know that that drone is American that damaged or closed the radar down, or if it's Ukrainian, or, you know, this is how I got into this strange internet business that I'm now in.

Because what happened is, I was so disturbed when the Ukrainians attacked this radar, this Russian early warning radar, that I started writing to people like Jeffrey Sachs to try to get them to alert the appropriate authorities, because I knew Sachs has contacts at the White House. And I knew from my earlier experience with the American intelligence community that people in the White House did not know anything about their own early warning system and did not understand the limitations in the Russian early warning system. There's a whole interesting story there where I discovered this. I was asked by the Clinton administration to review what the Americans knew about the Russian early warning system because the Clinton administration was thinking about early warning cooperation with the Russians.

And when I reviewed the codeword documents, I was stunned to find out that the American intelligence system did not know that the Russian early warning satellite system could not look down at the surface of the Earth and see launches. That's important because an American president in a crisis could think, well, the Russians are doing this. They must know that we know. They must know we're attacking them. We need to do something. This could literally lead to a misunderstanding that could result in massive nuclear use of nuclear weapons by the United States and Russia. This is a serious intelligence shortfall.

And when I discovered this, I was working with a bunch of Russians, and I said to myself, this is too serious not to tell the Russians that I have figured this out. So I went to Moscow. I didn't know if I was going to be arrested, I'll be honest with you, because this was a secret that was one of the most closely guarded secrets in Russia. It had to be. I know how we would have dealt with it. Americans, we would have kept it secret. When we first launched our early warning satellites, we didn't even acknowledge that we were trying to do this. It was secret. The fact that we were trying to do it was secret.

And I went to Russia and I gave a talk. And sitting in the audience, God bless him, was Anatoly Savin. He's dead now, and so I can use this. I wouldn't normally. And Anatoly was the chief designer of the Russian early warning satellite system. Now, I was sitting there giving this talk to a group of people in an organization called Kometa. Kometa is a giant, you know, government-run and owned organization, which is the equivalent of Lockheed, Raytheon, everyone else combined, but owned by the government, which is the right way to do it. You don't want these guys deciding what's good for your national security like we do. So he's head of this thing.

He's been decorated multiple times for his work during the Great Patriotic War and otherwise. He's a serious communist. I mean, he and I, we had a very good relationship. For some reason, he just took a liking to me. And so I would joke with him about it. You know, he's a serious man, though.

And he's sitting there and he says, you know, Ted, you got the surveillance areas in your analysis — the shape is wrong. The shape is wrong. Well, what he told me is how the scanning system worked, because I knew there were two possible shapes for the areas that I believed they were looking at, which were very limited.

It wasn't the global system. So he—now, no, there's no question, none at all, that Savin knew exactly what he was doing. He was telling me, "You're right." And the reason he was telling me, "You're right," is he understood that what I was trying to do was start a cooperative program. I was going to the Americans and saying, this is not good for American security as well as Russian security. If the Russians accidentally attack us because they think they're under attack, the United States is destroyed just as well as Russia. So it's in the American national security interest to try to help the Russians solve this problem.

And I've been working on this problem 25 years and getting nowhere. So, this is an issue. So when I see this Bulletin article, you know, and they're telling everybody they're such experts, they've already told me, you know, you're foreboding, you're dirt, we don't want to talk to you again, we don't want you dirtying up our club. I felt that, you know, it's important that people be alerted to this. And I hope if you have audience members who read the Bulletin, and I suspect you do, because you have a pretty highly informed crowd, they should write letters about this incident, this particular discussion we're now having.

They should write letters to the Bulletin and demand that they do a proper job or cease and desist—just close down and, you know, don't falsely represent yourself as an organization that's giving people accurate information. You are not doing it. You are lying. You are misrepresenting yourself as experts on matters that you have no knowledge of. And that is immoral. It's also dangerous. If I tell you I know that that bridge is okay, but in fact the bridge is not and it's going to fall down, I am immoral telling you to go ahead and use the bridge. And that's what these people are doing. This is immorality on a massive scale, and the Bulletin needs to correct its act. That's my bottom line for this discussion.