

## Tech Talk TV Show

### Spyware, Adware, and More Episode

1/30/2005

The text on the screen reads, "Digital Media Center, University of Minnesota"  
The words, "Do you ever get the feeling you're being watched" appear on the screen.  
A man's eyes dart side to side in a paranoid manner.  
The man nods to signify "yes."

The Tech Talk intro plays

**Susan: Hello and welcome to Tech Talk from the University of Minnesota; your source of information about the technology that surrounds us every day. I'm your host Susan McKinnell. Have you ever heard anyone talk about something called spyware? Sounds threatening. Well, it is a little scary. Here's a definition: spyware is any technology that aids in gathering information about a person or organization without their knowledge. But are there some times you may want someone on a faraway node on the internet to know a little bit about you? That's just some of what we're going to talk about today. Some of the terms you'll hear include: *spyware, adware, popups* and *cookies*. Joining me today is Mike Waltonan. Mike has worked for the U's Academic and Distributed Computing Services since 1999. He is currently a technical consultant and an onsite technician. But for our needs, Mike trains residence hall technicians on how to deal with viruses and spyware when they appear on student-owned computers. Nice to have you with us today, Mike.**

Mike: Thank you, Susan.

**Susan: So can you explain to me what spyware really is?**

Mike: Spyware is a mode for either presenting ads to you or watching what you've done to either present targeted ads or just use your habits to provide advertising to other people.

**Susan: How does spyware get on my computer?**

Mike: It can be a variety of different ways. Many free programs will come with something bundled in the background. There's a reason they're free. It's because there is something included in the background there.

**Susan: Nothing's free is it?**

Mike: That's right! No free lunch.

**Susan: Okay.**

Mike: So that's one way it comes in. Other ways, it's websites you go to, it's just a little application that runs in the background, it installs.

**Susan: So just by going to a certain web page some spyware might download onto my computer?**

Mike: Might. Yeah. It depends on certain variables but it is possible for it to get on just by visiting web pages.

**Susan: Okay and you say, it sounds like there are different kinds of spyware?**

Mike: Yeah, there is...It kind of breaks down into loose categories and many of them fall into all the different categories just in different ways. Usually the ones that I usually recognize is there is spyware, there is malware and there is adware.

**Susan: Okay, so spyware is the stuff that watches what I'm doing?**

Mike: Spyware watches what you're doing. It can either look at what web pages you've been going to, what programs you have on your computer, sometimes it watches what keys you've typed.

**Susan: That sounds scary.**

Mike: It is! They use it for advertising or to pick up where you've been, but they also pick up inadvertent things, like maybe your password or other things you've been doing so there is a big security risk also sometimes with these.

**Susan: There is a potential for some really bad stuff.**

Mike: Yep. Depending on what they're doing.

**Susan: How does this spyware report back to someone? I mean I assume that the information is no good to anyone else if it just stays on my own computer.**

Mike: It just connects to the internet in the background without you telling about it and it'll just report back to the company.

**Susan: Okay.**

Mike: And sometimes after it sends those reports the company will send back an ad to popup on your screen so if you have spyware on your computer you're seeing the sporadic ads popping up. Sometimes it's just a random ad, sometimes it's from something you sent.

**Susan: Okay. You said there is also malware; what is that?**

Mike: Malware is usually more...you usually think of that as a virus it's a program that uses some mode to get on your computer without any permission, without asking. It's usually when you go to website and something gets downloaded on you from spyware they use that to gain entry onto your computer and then they'll put some advertising program on there.

**Susan: So there is sort of a little bit of an overlap between the world of viruses and the world of spyware.**

Mike: It is. It gets hard to define sometimes, they get really close together the antivirus manufacturers are starting to address spyware because of the growing concern.

**Susan: Okay. What about adware.**

Mike: Adware just blindly pops up ads. Like I said before, sometimes it's a program that goes out and says, "I need an advertisement" and it just pops it up on your screen.

**Susan: Those are really annoying!**

Mike: Yes they are, very annoying.

**Susan: Okay and these popup ads, that's something that a lot of people have heard about.**

Mike: Mm Hmm.

**Susan: How can we deal with some of this stuff?**

Mike: The easiest way is using popup blockers in web browsers. Another way is using adware programs like Ad-Aware, Spybot Search and Destroy, programs like that to scan your computer routinely to see if a program that brings popups on your screen has been installed.

**Susan: Okay. Let's start out with the popup blockers. Actually, let's take a look at popups in the first place.**

Mike: Sure.

**Susan: Just so everyone knows what we're talking about. It looks like we're at Weather.com which is a perfectly legitimate site; has a lot of useful information. But it also happens to have a lot of popups.**

Mike: Right. Behind the screen they threw advertisement in so you don't get irritated when you first come to the site but when you close the window to enjoy your browsing experience, you'll find a nice little ad here for American Express.

**Susan: And I've been to the site often enough to know that it's a different ad every time you come.**

Mike: Right, yeah. Sometimes you'll see little movies come up like a movie preview, an advertisement; sometimes it's something like this. It can vary. Sometimes it's a cute little game, the kind where your cursor turns into the bull's-eye and, you know, swat the flies or...

**Susan: Oh fun.**

Mike: Now in addition to being annoying and having to close these windows down, this actually takes up some of my own computer system, right? I mean it's taking some of the...it makes my computer run more slowly, doesn't it?

Mike: The popup ads can, yeah. The computer has to take the time to read the extra information from the website to bring up the ad.

**Susan: Sometimes the web is slow enough as it is, I don't need to make it any slower.**

Mike: Very much so. Most people don't need the extra slow-down to contribute to a world wide wait of any kind.

**Susan: Exactly. I like that term. So we've got the popup here now, now how can we get rid of this, or prevent it from happening in the first place?**

Mike: To prevent it from happening; many web browsers, these days, come with popup blockers built in. What we're using here is Internet Explorer and I can show you how to do it for this one here.

**Susan: That would be good to see.**

Mike: Let's close out the ad, here. And if you just go up into tools and go into the internet options menu.

**Susan: This is where a lot of the default settings for Internet Explorer, like where to set your home page are listed.**

Mike: Exactly. And if you go into privacy you'll see the option for popup blocker down here. Now, this only shows up if you have Windows XP service pack two installed. This is one of the features that was included with that upgrade so if you don't have that you are not going to find this option in here.

**Susan: It's a good thing to mention just as a totally side issue, but, Windows XP service pack two, if you are using Windows XP at home you should install service pack two.**

Mike: Service Pack two.

**Susan: Free download?**

Mike: Yep, free download and it provides a lot of the security enhancements which prevent viruses among popup and other adware from getting on your computer more easily.

**Susan: Great. So you just check the box.**

Mike: Yep. You just need to check the box and click “okay.” And now let’s test and see if it actually worked.

**Susan: Re-open internet explorer. You’ve got to close it down to make sure all of the settings are...**

Mike: Yep. Close it down to make sure, just in case something didn’t quite go right. Go ahead, go to weather.com and...

**Susan: Look at that!**

Mike: There we are! Popup block totally stops it.

**Susan: Okay.**

Mike: And it puts a notice here, first, to let you know that it’s working and second, if it is actually a popup you want to see, you can say to temporarily allow the popups.

**Susan: Like I’d want to see that ad—just in case.**

Mike: Well, once in a while sometimes they’ll popup a form like you know if you’re buying something online you click to check out and it does it with a popup window or something like that.

**Susan: There are some legitimate popups that are actually for functional reasons.**

Mike: Sometimes that is the case and you want to say, “Allow popups” and if it’s a site that you go to a lot you can go in and you can say, from this site, always allow popups. You can do it from here or if you already know what they are you can go back into where we checked the box and there’s a button to click and you can type-in –

**Susan: In “Internet options.”**

Mike: Yep and type in which ones you need.

**Susan: Great. Sounds good. Oh, now wait a second, Internet Explorer, just with service pack two just got this popup blocking but that's relatively recently. Aren't there some other browsers that have been popping block-ups...blocking popups for a while?**

Mike: Yes, there have been.

**Susan: Say that ten times fast.**

Mike: There you go! Let's close this down. Another one that I recommend using because it doesn't have all the features of Internet Explorer so thus it can't get...

**Susan: All the problems?**

Mike: All the problems that Internet Explorer can get.

**Susan: There have been real security problems with Internet Explorer recently, haven't there?**

Mike: Right, there have been. And even though it doesn't support some of the Microsoft only features, they are not used as commonly as a lot of the other ones. So you're not going to have problems with very many websites. Most of them actually tend to be, like, going to Microsoft sites where you will get it and a few other that are using ActiveX which is what is blocked.

**Susan: Okay, so this browser is a great browser to use, a good one for anyone to use and a lot safer and it's called Firefox.**

Mike: Yes, Firefox.

**Susan: Okay, where do you go to get Firefox?**

Mike: Firefox.com

**Susan: Easy enough and you just download it and install it.**

Mike: Yep, download and install it. It's pretty quick to do and once it's up and running the popup blocker is actually turned on by default.

**Susan: Great, you don't even need to go anywhere.**

Mike: No.

**Susan: Sounds good, I wanted to take a look at what you do with spyware. We talked earlier about there are ways to get spyware off your computer; how do you do that?**

Mike: There is a multitude of programs out there to remove the spyware. You sometimes see advertisements for them. Some of the popups are actually advertisements for removing spyware.

**Susan: There's a connection between all those...**

Mike: That's right. Or there's a lot of free ones out there.

**Susan: Okay.**

Mike: I actually recommend the free ones more over the ones you see advertised for. They're usually not as...

**Susan: There was a recent study on that. This isn't the case all the time, but there was a recent study on NPR that suggested that some of the spyware programs that you pay for actually install spyware on your computer.**

Mike: Right. That was a test done by PC world. If you go to their website and you search for spyware and you can find it in there and they actually have a chart showing the difference performance ratings and they found that the free ones were actually working better than the for-pay ones.

**Susan: Which ones do you recommend?**

Mike: The two that I use are Ad-Aware and Spybot Search and Destroy. I recommend using more than one because one program will find a certain set of them better than another and then another will get the ones that the first one is lacking in.

**Susan: Okay, cover all your bases.**

Mike: So if you get in with a couple you're more guaranteed to get everything.

**Susan: Okay. Ad-Aware; where do you find that at?**

Mike: Both Ad-Aware and Spybot you can find on download.com.

**Susan: Great.**

Mike: Just go ahead to there search Ad-Aware or search Spybot and you'll find it within the first couple choices.

**Susan: How do you use a program like this?**

Mike: It's actually really easy. We have it already opened here.

**Susan: It looks like Ad-Aware is the one we have opened.**

Mike: Yep. Ad-Aware is the one we have opened here and it's just a window like this. The first thing you always want to do before you do a scan; because there are new spyware methods coming out all the time, you have to make sure to know about them. Just like antivirus with the new viruses.

**Susan: Mm. Hmm. You've got to get the virus definitions all the time.**

Mike: Exactly. You've got to do the same with this. You've got to go ahead and check for updates.

**Susan: I see it says, "Warning. Your definitions may be outdated."**

Mike: So, you just check for the updates and let's go ahead and connect and it find, says, there you go, you've got something new, say okay and it will go ahead and download it.

**Susan: So that is as simple as the same thing that you do with your antivirus and, of course, this does not going to replace your antivirus program. You use that as well.**

Mike: Right.

**Susan: For the viruses.**

Mike: Antivirus will pick up viruses out to do malicious behavior. This is more for the irritants and protection of your personal property.

**Susan: Now a scan takes a little bit of time.**

Mike: But I can go through and show how to actually do a scan.

**Susan: Yeah, let's. It would be nice to see a scan.**

Mike: So, let's go back to the original page. Just click on start and then just do the smart scan. That will find the most common places that you're going to find it and it's quicker than the full scan. So just go ahead...

**Susan: And it doesn't take as long as an antivirus scan but it does take a little bit of time.**

Mike: No, it does take a little bit. It'll take probably five, ten minutes or so. It depends on how many files are on your computer and how slow it is.

**Susan: How often do you run a scan?**

Mike: I would run it probably like once a week. It's a good safe one. It's not like a virus where you might have your computer stolen from you.

**Susan: Absolutely.**

Mike: It's not as huge, as big, as critical a deal to go ahead and do it all the time, but regularly it is a good idea because it will slow down your computer and everything.

**Susan: Okay. The one thing I did want to ask is when we ran this earlier, we didn't find any spyware but we found a lot of cookies on here.**

Mike: Right.

**Susan: What are cookies?**

Mike: Cookies are...

**Susan: Real briefly.**

Mike: Very briefly, cookies are kind of like...think of it like a name tag. When you go to a website you kind of put your name tag on and whenever you go to a website it says, "Who are you?" and you say, "Oh! I'm Mike." And different websites will use different cookies for this.

**Susan: And they keep it on your computer, right?**

Mike: Right. It's a small file kept on your computer to personally identify you. It's for spyware purposes it's used to see which websites you've gone to. And there are agencies that will put a cookie in your computer but they'll also watch many sites and keep track of the different sites you go to.

**Susan: Okay.**

Mike: But, it's also used for things like e-commerce and things like that as well.

**Susan: Okay.**

Mike: Once you've logged in once, you won't have to do it over and over again.

**Susan: Sounds good. Thank you very much, Mike. You gave us a ton of information very quickly.**

Mike: Yep, you're welcome.

**Susan: This cookie thing is kind of a double edged sword. We need it to make many web pages work but at the same time it can expose our personal habits. Are there**

**any good reasons to let a website gather that information? And more than that, why would a business care where I've been on the internet anyway? To answer those questions we've asked Professor Jaideep Srivastava to join us. He has a PhD in computer science from Berkeley, spent two years at Amazon.com and at Yodlee, Inc. He's been appointed as distinguished visitor from the IEEE computer society. His interests are in multimedia systems, databases and data mining. Jaideep, thank you for being here.**

Jaideep: Thank you for having me on the program.

**Susan: What exactly is data mining?**

Jaideep: So, data mining is a set of techniques what that do is, essentially, analyze lots and lots of data by computers and extract some kind of hidden information in that and that can be used for all different kinds of purposes.

**Susan: Okay now, what kind of data...where are they getting this data from? What is the data?**

Jaideep: So, in fact, we were talking about the web and you talked...saw so many different examples, so for instance, if you think about a site like Amazon...

**Susan: Mm. Hmm, a commonly used website.**

Jaideep: Yes and what happens on that is that when you see each time that someone goes to Amazon and browses Amazon then a lot of data is being collected on the different actions that they are doing. So different things they are clicking or different key words they are giving in the search box and so on and that data is analyzed to figure out what other kinds of books, music or CDs someone would be interested in.

**Susan: Okay, how actually are they collecting this data? I go to the website, I click on some links...how do they retain that information.**

Jaideep: Okay so each time that you go to a particular page and you click what happens is that there is a they have some files at the backend and those files—some information is being stored.

**Susan: On their side; they store some information.**

Jaideep: On Amazon's side, yes, as to what page you accessed, where you came from; all of that information.

**Susan: How do they know it's me?**

Jaideep: Okay so they use a concept of a cookie.

**Susan: We were talking about that with Mike just a few minutes ago.**

Jaideep: And so essentially you can think of a cookie as kind of a little tag. It's actually a little number and when you visit Amazon's website they, along with the information they return to you; the webpage, they also return this cookie which is kind of hidden inside that message and that gets stored on the computer. And the purpose of that is...

**Susan: So the cookie is on my computer.**

Jaideep: Is on your computer...

**Susan: I go to Amazon and when I go to Amazon my computer is asking, it says, "Can I look at this page? And while it is putting up that question it is also giving them that, "Hey, this is my number, too; this is my tag"**

Jaideep: Exactly. So the idea behind that is that next time when you ask another question or you request another page, Amazon is able to identify that it is indeed you asking a second question as well.

**Susan: Okay. So Amazon is watching where I am going on Amazon's website.**

Jaideep: Yes.

**Susan: Are they watching where I am going anywhere else? Can they do that?**

Jaideep: No, they cannot do that.

**Susan: Okay.**

Jaideep: They cannot do that. In some cases that can be done, though.

**Susan: With some of these spyware programs?**

Jaideep: Spyware programs or what is also sometimes known as web-wide tracking.

**Susan: Okay.**

Jaideep: That means that...In the case of Amazon the tracking is only being done on Amazon's website but there are some methods by which a user's browsing on the entire web can be tracked. An example of that is something like a Google toolbar.

**Susan: Okay, that's a recent thing that Google, a relatively recent thing that Google lets you download the toolbar, it has a little search spot in there so you don't even need to go to Google's webpage to do a search.**

Jaideep: Exactly.

**Susan: But that does something else at the same time?**

Jaideep: So what that does is that each time that you are searching something from that it keeps track of where all you're going and therefore it can send some information back to Google and therefore Google can keep track of where all you are going.

**Susan: What's...okay now back track a little bit. Now Amazon's getting a lot of information about perhaps what books or CDs or whatever I'm looking at I can figure out that they kind of want that information to put up advertisements for me, specified for me. I've seen that when I go to Amazon.com I search for something and the next day I go back and it's advertising something similar. So that kind of makes sense to me. Why would Google want to retain this information about me?**

Jaideep: Okay, so if you look at Google's revenues, Google's revenues are essentially coming largely from advertisements. So if you are a provider for say...say for example that you Amazon, and I go on Google and I search for a book and Google returns a whole bunch of links to me about that book or maybe different websites or so on. Now, if you are Amazon or you are Barnes and Noble or some such book seller you would want that Google recommend that page to me as a high priority.

**Susan: Absolutely.**

Jaideep: And therefore Google wants to be able to do that. In fact, right now, if you look at Google's search page it essentially has two different parts: one is the part that, you know, all the standard links come up and on the right hand, they have this box which are what they call sponsored links and that sponsored links is where those who are paid advertisers; their links will be shown. So it is essentially doing two different kinds of things. That means that the free part or the standard part is where it is using some kind of techniques to figure out that these are the documents or these are the pages or the links that are most relevant to the question you've asked and the one within the box is not something you should really trust in a sense because they are not necessarily the most relevant ones they are just the ones...

**Susan: They are paying to be up there.**

Jaideep: That's right. That is exactly the case.

**Susan: Is this the bottom line with all data mining? Is it really all for directed advertising?**

Jaideep: So that actually is one of the significant application areas, but data mining actually is a much broader field. And it has been used from things like in sort of science and in living applications people are applying data mining to data being connected from you know even biology and genetics.

**Susan: Okay.**

Jaideep: One of the very, I should say, positive application fields, you know, if you think about marketing as not such a positive application, one of the biggest positive applications is that data mining is cutting down a lot on the possible, what is technically called the search space of possible pharmaceutical drugs. So for example, what happens is that when someone is, you know all these drug companies, they are trying to design a new drug, what they have to do is, they have literally millions to tens of millions of possibilities and they want to be able to cut down the total space to a few of the promising ones because they can take only a few of them and actually go ahead and prototype them and create them and go to the...

**Susan: So they use data mining for figuring out what is the most appropriate, what is the most useful?**

Jaideep: Exactly.

**Susan: I want to back track and go little more towards data mining on the internet. You mentioned that directed advertising may not be seen as a positive thing, but there are some positives for the consumer with some this directed advertising, aren't there?**

Jaideep: Oh, well of course. I mean, in fact, the famous example is the head of the direct marketing association was once asked that someone, you know, this person was giving a talk and so someone in the audience said, "Oh, so you are the junk mail king?" And his response was that, "Oh, we don't send junk mail. All the stuff we send is junk mail only for the people receiving it. First it's an expense, so as far as we are concerned there are only junk customers. We want all of them to respond." So it's always...

**Susan: It's the flip side of the coin.**

Jaideep: The flip side of the coin.

**Susan: But at the same time it's the, even though for a lot of us some of these ads are extraneous, but when they're subtle and to the side and they are for things that we might actually be interested in, and like how Amazon uses it, it directs it toward products that we may be interested in, it could be a very useful thing.**

Jaideep: Oh, yes. And in fact it has been shown, and in fact Amazon themselves have done a lot of experiments and a lot of these experiments have shown that indeed customer satisfaction is actually quite high. And while, yes, it's also sometimes an irritation to receive a lot of unsolicited email as well as lots of popups and so on but in general, customers have been very satisfied with Amazon's advertisements.

**Susan: In some ways, it's kind of like going back to a small boutique store and having the same sales person know your tastes and be able to show you things that you might be interested in.**

Jaideep: As a matter of fact to use those the format of one of those movies about a big book store and a small bookstore, the only thing Amazon is trying to do is it's a big bookstore except it wants to appear as about 20 million different small bookstores customized to their 20 million customers.

**Susan: It's a smart marketing move. I want to address, I want to do this fairly quickly, a lot of people have concerns about data mining, about their own privacy and what I particularly want to address is what Amazon or other sites can get from me, you already mentioned that Amazon can see where I'm going but can they get other things off my computer; if they're doing things above the board using cookies and so forth?**

Jaideep: Actually information that they can get off your computer is essentially limited only to what you are providing. They cannot get any extra information out of computer; they cannot do that.

**Susan: So, unless I put my name in there, they're not going to find my name. Unless I put in my social security number, they're not going to find that.**

Jaideep: That's right. So, about the only thing they can find automatically is the IP address that you are coming from.

**Susan: That's the number that identifies my own computer.**

Jaideep: Off your computer. Absolutely, it's like a computer's unique address, it's like a computer's social security number, if you will.

**Susan: Thank you so much. We're running out of time. I really appreciate you being here with us today.**

Jaideep: All right, thank you.

**Susan: Well, that's our show on spyware. We covered a lot of territory so here's just a brief review, *for your files*.**

**Mike Waltonan, a technology specialist at the U, discussed spyware.**

Mike: Spyware is a mode for either presenting ads to you or watching what you've done to present targeted ads. Or just use your habits to provide advertising to other people... Spyware watches what you're doing. It can either look at what pages you've been going to, what program you have on your computer. Sometimes it watches what keys you've typed.

**Susan: Another term used today was malware. Mike said you could think of it as a type of virus.**

Mike: It's a program that uses some mode to get on your computer without any permission without asking. That's usually when you go to a website and something gets downloaded on you for spyware. They use that to gain entry in your computer and then they'll put some advertising program on there.

**Mike said getting rid of adware, malware and spyware is not difficult.**

The easiest way is using pop-up blockers, in web browsers. Another way is using adware programs... to scan your computer routinely to see if a program that brings pop-ups on your screen has been installed.

There is a multitude of programs out there to remove the spyware... I actually recommend the free ones. ... The two that I use are **Ad-Aware** and **Spybot Search and Destroy**. I recommend using more than one because one program will find a certain set of them better than another. And the other one will get the ones the first one is lacking in. So if you use a couple, you're more guaranteed to get everything. (9:10)

**And where do you get these programs?**

Both Ad-Aware and Spybot you can find on [download.com](http://download.com)

**Professor Jaideep Srivastava said you collect cookies when you go browsing the web.**

You can think of a cookie as a kind of little tag. Its actually a little number. And when you visit Amazon's website, they along with the information they return to you, the web page, they also return this cookie. It's kind of hidden inside the passage and that gets stored on your computer... The idea behind that is that the next time when you ask another question or you ask for another page, Amazon is able to identify that it is indeed you asking the second question as well.

**The professor also defined data mining.**

So, data mining is a set of techniques what that do is, essentially, analyze lots and lots of data by computers and extract some kind of hidden information in that and that can be used for all different kinds of purposes

**If you missed any portion of our program on spyware, adware, popups and cookies, or you just want to see it all again, stop by our website. All of the programs that we've done so far, including this one are right there for your viewing. Our address is [techtalk.umn.edu](http://techtalk.umn.edu). And if you have a question about this program, just post it on our**

**website and we'll have one of our specialists answer it. Next week, and for the third time in as many years we're going to address a topic that keeps changing and becoming more and more of a problem, the topic next time will be viruses. Three years ago we told you not to open unexpected email attachments, that's still valid, but now sometimes you don't even have to open your email to become contaminated. It's a program that you don't want to miss. Until next week, I'm Susan McKinnell.**

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