

MODULE 6 – 2084

LECTURE 2 – S/S AND I/I

S/S – LOCARD AND MECHANICAL SNIFFERS

So what does technology have to offer us in the future regarding the investigative technique of search and seizure? Remember **Locard's Exchange Principle**? **"Every contact leaves a trace."**

I quote here again - "...wherever he touches, whatever he leaves, even without consciousness, will serve as a silent witness against him... ..his hair, the fibers from his clothes, the glass he breaks, the tool mark he leaves, the paint he scratches, the blood or semen he deposits or collects. All of these and more, bear mute witness against him. This is evidence that does not forget. It is not confused by the excitement of the moment. It is not absent because human witnesses are. It is factual evidence. Physical evidence cannot be wrong, it cannot perjure itself, it cannot be wholly absent. Only human failure to find it, study and understand it, can diminish its value." Unquote.

That stuff is as important today as it was in the 1940s when Locard wrote it. But now think of a **dog's sense of smell**. The dog doesn't exactly smell the physical evidence itself as Locard described it – the dog smells the scent of those objects, which consists of the molecules, or traces, unique to those objects that trigger sensors in the dog's nose. And think of the power of a dog's nose to track the trail of someone running away from a crime scene, or to detect drugs or bombs or cell phones or whatever. They say a dog's sense of smell is hundreds or even thousands of times more sensitive than humans. And now I'm told that a polar bear's sense of smell is seven times greater than a dog's, although I don't expect polar bears to replace dogs in police work anytime soon.

I hear we're getting closer to developing machines that are almost as good as detecting some smells as dogs are, so I'm thinking that in 50 years we **oughta** have machines that can do a lot better than dogs, and even polar bears, maybe even hundreds or thousands of times better. Just like that IBM machine that beat the human world's champion chess player, or the one that beat the human world's champion Jeopardy player. And if machines can detect molecules on artifacts of crime, or on property, that are the same molecules of suspects shoes or clothes or body odor, then we have a better way of determining whether or not a suspect had contact with an artifact of interest. And similarly, if a machine can track an individual's molecules better than a bloodhound, then maybe we can determine the whereabouts of the individual around the time a crime was committed. Here again, the information can be used for both prosecution and exculpation.

So maybe 50 years in the future, we won't have to start off a conversation with a person with the traditional "where were you on the night of the crime?" type question. Maybe, because of the cameras, the nanobots, and the **mechanical sniffer**, we'll already know!! OK, now I'm sure that you, ELOQUENT TRAVELER, can think of better terms to describe a mechanical sniffer. Scent detector, olfactory replicator, odor analyzer something or other, **whatever**, go ahead, be my guest. But mechanical sniffer works for me, and it sure is easier to pronounce than CUIPDSC or MRRABLVA, so deal with it. Anyway, we're not done yet.

I&I – GOOGLE FACE-READERS, AND LIARS BEWARE!

We talked earlier of behaviors, techniques, facial micro-expressions, wizards and such relating to interviews and interrogations, and how only about 30% of all interrogations were successful. And we mentioned the benefits and issues of various devices like polygraph instruments and such. So now let's think a little more about how good we're getting at using **facial recognition technology** to identify faces in crowds. What if, in the next 50 years, that technology gets so good that it starts recognizing facial **micro-expressions** in support of Paul Ekman's theories regarding identifying the truth or **falsity** of an individual's statements? This technology would likely be something like a TV camera that focuses on an individual's face, but doesn't have to physically touch him/her in any way. And that's different than the polygraph.

So maybe someday an investigator could just talk to, or interview, a person and, through our **fancy-schmancy** miniature portable **Google glasses** type face-reader, immediately get feedback regarding whether or not the person was telling the truth. Would the investigator need a search warrant, or a rights advisal, or a lawyer present or something, just to talk to somebody? Even in a non-custodial situation? Probably not – I mean it's just a conversation, and a copper could wear the glasses just like he/she wears a camera today.

Think a **police officer** wouldn't mind having one of those things when he/she goes out on calls? Just imagine a copper wearing the Google face-reading lie –detector glasses and asking some of the more typical questions:

Sir, how many drinks have you had tonight?

Do you know why I stopped you?

Do you know how fast you were going?

Are you carrying any weapons or drugs?

How old are you?

Is that yours, where did you get it?

Did you see what happened there?

Do you know who, or where, the suspect is?

Were you involved in that incident?

Is he/she your boyfriend or girlfriend?

And of course, just for kicks, the old standard - have you stopped beating your wife yet?

So **ya** think we're gonna be able to control that type of technology? Think maybe a teacher, or a parent, or anyone wearing Google glasses, or maybe something more covert, that's capable of reading face micro-expressions, might want to use it? So **here's my warning** – Liars beware! Get your **licks** in now while you can, because your days are numbered! Boy, are the politicians **gonna** be happy about that!!

Think we could stand, after 5,000 years and 200 empires, to **hear the truth and nothing but**, day in and day out? Imagine wearing this technology for just one normal day in your life, from the time you wake up, when you're at work, traveling, chatting with family, friends and neighbors, shopping, watching TV or whatever. Think that might torpedo a few of your social relationships? Think you could bear to wear them the whole day? And how many relationships do you think would last until the day after? Especially if the people you had contact with were also wearing similar lie-detector devices? Not feeling very chatty or sociable, **are we**, all of a sudden?

You know, there have been times in my life when I **purposely did not ask questions** because I **did not** want to have to deal with the truth. And there have been times when I have lied to protect myself, and sometimes others. I'm not sure I'm ready to give all that up yet. And here again, I don't think I'm the only one bothered about that. So I don't know exactly how society is going to handle all this face recognition stuff, but I'm pretty sure the technology will be available and it'll be quite a challenge for us all to adapt to. And it could be great for investigations! And I **ain't lying** about that, am I? Or can't you tell – yet?

So there I was – I had just finished writing up the previous bit about future tech and all, and I began planning out my next career as a prognosticator of great things to come, when I happened to notice a **couple of news headlines**. The first one talked about a new skull cap that was just beginning to learn how to pick up our **brain waves**, translate them into actual words that we are thinking – just thinking! – and then print out our word thoughts on a computer screen. ¹²³ **Wow**, I thought, I sure could use that on – well, present company excluded, of course. And me, too – they **ain't gettin'** anywhere near me with that contraption! But my next

thoughts were – how long before they don't even need skull caps to pick up brain waves? And am I **gonna** have to start wearing brain wave-hiding helmets or fedoras or something, to maintain my privacy?

But the second article really chilled and thrilled me, as they say. It talked about today's **smartphones** nearing the point where they'll soon use algorithms to read emotions with facial recognition technology. Then it talked about the impact of detecting lies in our society (the "so nice to see you again," and "I love you" stuff), and even mentioned politicians! ¹²⁴

Geez, is somebody listening to my thoughts about this stuff already? Where's my fedora?

So it looks like the **future is upon us already**. I haven't come across anything promising nanobots by Christmas yet, but I guess I'll have to put my plans as a futurist on hold until I can think of something more fantastic. Oh, I don't know, like maybe **an invisibility cloak**, or **Martians**, or something exotic.

My point here is that Kurzweil's idea about the "Law of Accelerating Returns" and technology increasing exponentially may have something to it. The term "**back to the future**" seems to have an added dimension also, that the best way to see our predictions about what's going to happen in the future may be to look into our rear-view mirror, because they may have already happened.

But nanobots that can talk to us? Really?

The next lecture tries to look at some of this stuff more practically from a broader criminal investigations perspective, and how it might improve our overall effectiveness.