Strategies for Countering Police Access to DNA Data (Chapter 10)

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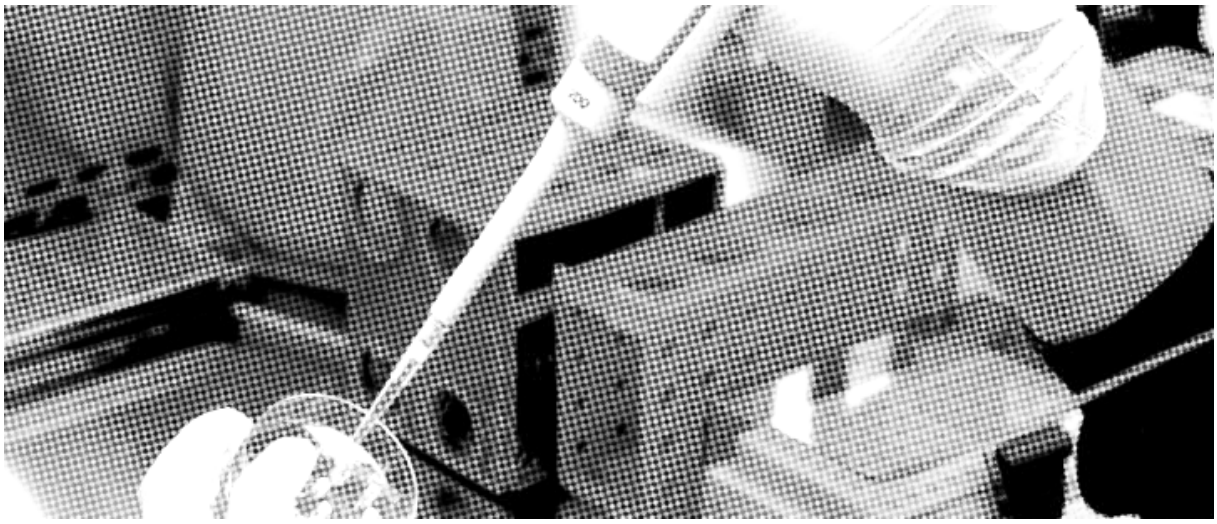

OPSEC is military and intelligence jargon for "operational security" and refers to techniques designed to prevent their people being caught during or after an "operation".

The fact that we have to talk about such things at all when it comes to issues like exercising the fundamental right to freedom of assembly or small acts of civil disobedience is a clear indication of how far the state's mania for security and collection has already developed. It is generally better to invest resources on pushing back the security apparatus than in a technical arms race with state agencies.

Nevertheless, there is of course nothing wrong with trying to avoid giving unnecessary material to state authorities and exercising the right to informational self-determination. To prevent or at least significantly limit leaving casual traces, it is necessary to wear new gloves, a face mask, a hair net or, even better, closed headgear (e.g. a swimming cap) and washed clothes with long sleeves and pant legs[1].

However, everybody else leave traces as well, so in semi-public places simply sweeping up mixed dirt will not get the police anywhere - and even objects that are frequently touched sometimes result in mixed traces that cannot be evaluated. However, relying on this is dangerous: elaborate analyses are carried out in some investigative procedures, and if your DNA is also found among many others, it is still there.

A central challenge for DNA forensics is finding traces that are related to the crime being investigated. What plays right into the hand of police is the fact that clothing fibers, which have been the focus of forensics all over the planet for decades, almost always yield usable DNA of the person wearing the clothes. Places where people have peed can also be of interest to investigators. Cigarette butts or saliva residue on stamps and envelopes are of legendary popularity. Hair, however, similarly legendary, is less useful if it doesn't contain the root. By the way, non-human cells are not helpful in confusing the police - the primers used for analysis to isolate individual DNA sequences are very species-specific. On the other hand, hair from a particular dog can be identified and provide clues to the police.

Many movies depict people wiping away ("normal") fingerprints. It is incomparably more difficult to get rid of DNA. At best, DNA traces can be removed by wiping down and bleaching extremely smooth surfaces, and only if there are no crevices or similar things. Tools, paper, textiles or other objects with rough surfaces, on the other hand, are practically impossible to clean in this way, of either human, animal, or plant DNA (even this can be relevant, for example, if genetically modified plant traces are found on pruning shears).

DNA is an amazingly stable molecule. Therefore, it is difficult to chemically remove DNA traces, especially since sterilization (such as simple heating or alcohol) is insufficient. You have to smash the STRs (short tandem repeats), and they are small. What works quite well from experience is sodium hypochlorite, but it is not so easy to obtain. An alternative is bleach or aggressive cleaners that have sodium hypochlorite in them (see ingredients and follow directions for use)[2]. Brand names include Dan Klorix or mold remover or Clorox (American product)[3].

[1]Translator's Note (T.N.): The face mask should prevent aerosolized saliva (so an N95 NIOSH rating or FFP2 European rating). Using a new full-body suit that is sold for mold and asbestos removal, such as a Dupont Tyvek suit, is better than clothing because it is non-permeable. These are also used by police forensics teams to prevent DNA contamination.

[2]T.N.: The percentage of sodium hypochlorite should be present on the label, or on a 'safety data sheet' for the product that can be found online. Higher concentrations of sodium hypochlorite are more effective - 10% is ideal, and ignore dilution instructions on the label. The bleach should be on the object surface for 15 minutes of 'contact time' – the surface should remain visibly wet during the contact time. This prolonged wetness can be achieved with a spray bottle or by immersing the object in the bleach. Bleach fumes can irritate the lungs – R95 grade masks will minimize them (and will also be as effective at preventing aerosolized saliva as N95/FFP2 masks).

[3]T.N.: Different Clorox products have different concentrations of sodium hypochlorite. For example, Clorox

Hypochlorite is not very stable, so it is recommended to always use a new bottle. It stinks quite a bit, just like chlorine, and is aggressive on many materials, so use smooth work surfaces that are not sensitive to it, such as a bathtub, wear intact rubber gloves and possibly also simple safety goggles[1]. Take care when handling! Do not use together with other cleaners. And make sure that you get into all grooves and crevices with it.

Other products for destroying DNA, such as DNA-ExitusPlus or DNA Zap (made by Life Technologies), are also available in the laboratory industry. According to published studies, however, they are no more effective than bleach with 10% sodium hypochlorite.

Hydrochloric acid-based cleaners, on the other hand, don't work as well. Heating metal objects in an oven at 250 degrees Celsius for some time also destroys DNA. The safest way to destroy things you no longer need is incineration.

Disinfecting Bleach Concentrated Formula has 7.5% sodium hypochlorite (https://shop.clorox.com/products/clorox-disinfecting-bleach), whereas most other Clorox products are lower concentrations. Mold remover products are often below 5% sodium hypochlorite.

[1]T.N.: A bathtub will have many DNA traces so it is an inappropriate work surface. Instead, use a new shower curtain set down on a table as a sterile field. This modified excerpt from *A recipe for nocturnal direct actions* gives a concise overview of the OPSEC required for minimizing DNA traces: "Dishwashing gloves used with 'sterile technique' (learned on youtube) can allow you to manipulate materials without contaminating them once they leave their packaging. This should be accompanied by securing hair under a tight-fitting hat or swimming cap, an N95/FFP2 mask to prevent airborne saliva, and wearing a long-sleeved shirt you've never worn that goes under your gloves (or even better, a plastic full-body suit used for mold and asbestos removal). Work on a raised surface so that you don't have to be bent over your materials. Have a second person (taking the same precautions) drop materials out of their packaging and onto your 'sterile field' (you can use a newly opened shower curtain, for instance, and choose a place where you or your friends have never been before). This is so that once you're sterile you don't contaminate your gloves with packaging you may have touched, though it is also best to avoid initially contaminating the packaging at all if it can be avoided. Clean all of your materials with bleach to destroy any DNA traces you may have left during their manipulation, though don't rely on this step - try to never leave traces on the materials to begin with. If using a delay, do tests to verify that the bleach cleaning does not change its anticipated function. Do not use tape because it collects DNA - cable ties can be used to secure materials together. To transport your materials, seal them in a garbage bag."

"Translation of chapter 10, OPSEC for Informational Self-Determination. A few practical tips for avoiding DNA traces."

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