

THE INVISIBLE WAR

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If we want to have an idea of how we are technologically advanced, a glance at new wars could satisfy our curiosity. From our drawing-room armchairs, we have been watching on direct TV “surgical” bombings of the utmost accuracy with projectiles that may be either familiar or, in some cases, unknown. Unknown because we are aware only of some of their final effects, effects, particularly on people, we never saw before.

In Gulf War I, journalists had told of tanks missing some parts, and those parts seemed to have been literally disappeared. We learned only after some time that in that case the metals had volatilized because of the high temperature generated by the impact between shell and mark, and those shells contained depleted uranium, waste matter that costs nothing and that, besides, is hard to dispose of. So, here is the solution: let's use in bombs it because it bursts at 3,000 odd °C, makes a nice bang and “disappears”, but don't let's tell anybody.

In Gulf War II, corpses were seen with their flesh ravaged but their clothes intact and unsullied. We became curious: what technology can produce those effects? Someone spoke of a wonder of chemistry: white phosphorus.

After the first European soldiers, including the Italian, back from peace-keeping missions, started to fall ill with a long collection of diseases, the Americans had to admit that, yes, they had used both in Iraq and in the Balkans depleted-uranium bombs. For white phosphorus, I am afraid we shall have to wait a little longer, though evidence is overwhelming.

Residual radioactivity in the territories bombed with uranium, something impossible to hide, as it is enough to go there with a cheap Geiger counter, as many people did including UNEP officials, persuaded mass media and a lot of people to point at radioactivity as the culprit of the pathologies affecting soldiers and civilians living there. According to media and some people, also for malformed children born of soldiers and civilians alike after the war, radioactivity is to be blamed. So, a global discussion began involving governments, all kinds of organizations, journalists, real or supposed experts and scientists. A mountain that brought forth a stunted mouse.

Soldiers keep falling ill (I have first-hand news of a few seriously ill American soldiers) and some doctors I met told me that many pathologies, some of them deadly, are on the increase in Baghdad among civilians. In the meantime, the European Community subscribed a declaration banning depleted uranium. Very good, but will that be enough to have those pathologies disappear? Not in my opinion and the reason is quite simple: depleted uranium is the instigator and not the killer.

In a report written in 1978 by researchers of the military base of Eglin (Fla) kept to sleep for 37 years who knows where and ended up for awhile in the maze of the Internet, I found data regarding experiments with depleted-uranium projectiles performed in a firing ground. Those researchers observe the formation of dust created through the explosion, and that particular dust is marked out by a range of very small sizes and unhomogeneous chemical composition made up by all the matter present where the bomb exploded: target, soil and bomb itself. That dust is produced by a violent combustion involving disparate materials and, therefore, its composition depends on occasional factors. What the researchers report is the formation of particles ranging between 0.2 and 0.5 microns (one micron is one thousandth of a millimetre) composed by different elements. Uranium was rarely detected in those particles, in spite of the fact that it made up the core of the projectile. The reason is easy to understand: three or four kilograms of uranium are enough to have many tons of stuff blow up and, in all that material, three or four kilograms become a rarity. The military researchers themselves close their document by asking to check what the consequences are of the impact of that dust on humans, since its size is in the inhalable range, that is to say that it can reach the deepest parts of the lungs.

Nowadays we classify those dusts as nanoparticles, and nanotechnologists, i.e. those people who build nanoparticles in their labs to exploit industrially their properties, focus their attention to the possibilities those particles have to interact with the organism, since the dangers that could ensue from that interaction are partly known and partly suspected, but, in any case, are far from negligible.

Among other things, some anxiety comes from a centre of the University of Leuven (Belgium) which verified that 0.1-micron particles, when inhaled, negotiate the lung barrier in 60 seconds, enter the blood flow which carries them all over the organism and within an hour can be found in the liver.

When those particles are trapped in a tissue, it is hard or impossible at all to remove them. What is surprising in the Belgian study is the very short time that tiny dust takes to enter the organism and the demonstration that our barriers don't hold vis-à-vis nanoparticles. It is only obvious that, since our body has no efficient filters, poisonous particles can enter and manifest their toxicity. But, be they poisonous or not, all those non degradable particles are in any case foreign bodies that our organism does not welcome at all. So, the human body reacts against such an attack as it can. If those dusts are scattered in all organs and are concentrated enough, the possibility exists that biological reactions are inefficient and so are drugs. In that case, cells can die or react otherwise, but, whatever they do, they do it in a pathological way.

Nanotechnologists have already observed that nanoparticles have oxidative capacities within the cell and are the cause of cell's anomalous behaviour. In that circumstance, immune defences are ineffectual. A recent study of the University of Plymouth (UK) checked the behaviour of some fish when forced to live in water contaminated by nanodust and showed how they grow aggressive and develop a condition of fatigue. The observations of that study carried out with artificially-made particles is in perfect agreement with what happens in war theatres where huge quantities of nanoparticles are created unintentionally by explosions or by oil wells set on fire or by the many other combustions typical of warfare. It is only natural that those who live in such a polluted environment can inhale that dust along with the air they breathe, or eat it with the food grown where dust falls or, why not, smoke it with contaminated tobacco. And that is what we find in the diseased organs of soldiers.

Those are the new, sly, invisible bullets of the XXI century that new wars create and that someone must start to take into account. In the last century we spread defoliants, and who does not remember Napalm with its dioxin? Now we have grown much more sophisticated and create a form of pollution that can last over time because most inorganic nanoparticles are eternal, since neither Nature nor man can degrade them. And that can have people fall ill even after the war is over, and those who fall ill are both the vanquished and the victors without any difference. Something that is punctually happening. Political and military authorities must take note and accept this novel situation and ponder over those invisible bullets that are far from being "surgical" and that, because of their continued permanence in the environment, are not dissimilar from mass destruction weapons.

First of all, soldiers should monitor the environment and then "filter" it as much as possible, so that pollution is not breathed. Suitable sensors are necessary and so are suitable masks that can be made with the help of nanotechnologies. Then, it is mandatory that those who made the mess clean it; but I believe this is an impossible undertaking, and it's not a matter of money but of actual feasibility.

What must not be done is stubbornly and, in a way, naively, deny what is evident. Pathologies exist among soldiers who took part in the war, among peace keepers, among volunteers who work in territories at risk and among civilians. NGO volunteers and civilians who go to lands wasted by war do that for moral reasons and not warning them of the danger they are going to face is unfair. The thing, anyhow, that I believe is most heinous is that no causal connection is recognized between disease and stay in a polluted territory. That is nothing else but contemptible hypocrisy. A soldier who is taken ill and is eventually killed by an invisible bullet is, anyhow we look at it, a soldier who died for his country, and a country, whatever meaning we give to that word, has the duty to recognize his sacrifice.

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