

International Workshop on Paolo Farinella (1953-2000)

The Scientist and the Man

Paolo's Commitment to Arms Control and Disarmament

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The list of Paolo's publications on disarmament and International security shows that he was deeply involved in this field between the early eighties and the end of the nineties, shortly before his death on 25 March, 2000.

With 38 journal articles and chapters in edited books, plus 1 co-authored book – almost evenly divided between the English and the Italian languages - Paolo was actually more prolific than several people who had made of arms control their professional occupation, including this speaker. His profession, though, was astronomy. Arms control was for him just an unpaid side-kick freely chosen for reasons of social responsibility. Yes, Paolo cared a lot for this little planet and its unruly inhabitants, probably more that he was willing to admit.

Having said of the quantity and before touching upon the substance of Paolo's production on arms control and disarmament, let me call your attention – and I'm sure I'm not going to be the only one to do that in the course of this workshop – on his style. In both languages, Paolo was an extraordinary writer of absolute clarity, who managed to command the reader's attention on issues that, as you may imagine, are not self-evident, nor particularly heartening. The wooden, woolly, convoluted and ultimately boring prose that plagues the majority of those who write on international relations – despite the best efforts of armies of editors, especially in the Anglo-Saxon world – was truly unknown to Paolo.

Most of us who are roughly of the same age as Paolo got involved in arms control as a consequence of NATO's decision, on 12 December 1979, to deploy in Europe a new generation of Intermediate-range Nuclear Forces (INF), Pershing 2 and Tomahawk cruise missiles, including some of the latter on Italian soil. This NATO decision was presented as a response to the previous deployment of a new generation of Soviet INF, the SS-20 ballistic missiles. But with tens of thousands of nuclear weapons already deployed everywhere on every conceivable delivery vehicle on each side of the iron curtain, many thought - particularly many scientists thought - that the arms race was getting out of control, driven as it was by this blind logic of tit-for-tat.

We didn't know each other at that time, but while I'm sure that Paolo followed the INF debate closely, that wasn't in my opinion what triggered his commitment to arms control and disarmament. His dear space was, as ever. All his initial publications, between 1984 and 1988, have to do with security in space, anti-satellite weapons (ASAT) and the anti-ballistic missile (ABM) treaty insofar as it was threatened by the Strategic Defense Initiative (SDI), launched by the then President of the United States, Ronald Reagan, on 23 March 1983.

The popular name under which the SDI went was Star Wars, not only because it looked then and looks now as pure science fiction, but also because in order to fulfill its stated mission of being capable of destroying attacking missiles after their launch, it relied on a stupefying array of orbiting gadgets, such as laser beams and mirrors, hypervelocity guns and such like.

I am sure that Paolo saw in the SDI the ultimate evil. There it was in just one stroke a project that threatened to: destroy the balance of terror that through mutual deterrence guaranteed peace

between the Soviet Union and the United States; militarize and corrupt science and scientists thanks to the billions of dollar earmarked for this kind of research; militarize his beloved space to an extent that made child-play of ASAT. The essence of Star Wars really was to potentially turn outer space into a battlefield – Paolo had yet to call attention on space debris (Nicola Cufaro will touch in a moment upon that part of Paolo's research), but what is a battlefield if not the perfect debris making machine?

Thus Paolo went to war against Star Wars armed by his knowledge of even the most technically sophisticated issues involved in the debate, by his ability as a writer, by his genuine love for a good argument, and by his relentless willpower.

His best essays on the SDI in Italian were published in such journals as *Sapere*, *L'Astronomia*, *Il Giornale di Astronomia*. Co-authoring with Luciano Anselmo and Bruno Bertotti, Paolo also repeatedly had his contributions appear in the proceedings of the International School On Disarmament and Research on Conflict (ISODARCO), normally edited by David Carlton and Carlo Schaerf and published by MacMillan in London.

ISODARCO, founded in 1966 by Edoardo Amaldi and Schaerf, was and is more or less a spin-off of the Italian Pugwash Group – I assume this is an audience where I don't need to explain what the Pugwash Conferences on Sciences and World Affairs do. In the early eighties, Paolo attended ISODARCO regularly and, when invited, Pugwash conferences and workshops – Pugwash works by invitation only. Paolo was also a very active member of the scientific council of the Unione Scienziati per il Disarmo (USPID), our rough equivalent here in Italy of the Union of Concerned Scientists, represented today by its Secretary General, Nicola Cufaro. I also have the honor of sitting in USPID scientific council.

A good example of what I called Paolo's relentless willpower as a debater are two letters on SDI that he sent in 1985 to an Italian journal called *Affari Esteri* (translatable, mind you, as Foreign Affairs,), known to be rather close to Italy's diplomacy, particularly the most hawkish part of the Italian diplomacy – the journal and its two editors, Roberto Gaja and Achille Albonetti, had distinguished themselves in the previous decade in opposing Italy's ratification of the nuclear Non Proliferation Treaty. Only the first of the two letters was published and, being focused as it was on the scientific merits of the SDI project, got embarrassed and unconvincing replies from the editors of *Affari Esteri*.

Then, one or two years later, around 1986-87, something must have clicked in Paolo's conscience as an arms controller because he decided to shift the focus of his interest back from space and down to earth – actually to the most difficult, complex and gruesome part of military affairs, that is conventional arms: the fighter bombers and warships and guns and tanks and infantry and all the stuff of the non-stellar but rather pedestrian wars that actually have killed human beings in the hundreds of millions.

Why the change? I can only guess, based on my own experience. You see, back then, during the cold war, one might get involved in disarmament because he was terrified by the destructive power of nuclear weapons (my case and quite a common one). Or because he was frightened by a creeping militarization of everything, from scientific research to space (Paolo's case, probably). But as soon as anybody tried to think hard about how a nuclear war, and stars wars and the militarization of everything could be avoided, he or she would end up in Germany – along what NATO called its central front, beyond which the divisions of the Soviet Union and its Warsaw Pact allies were deployed, where the highest concentration of firepower ever amassed in human history stood ready to be used in a matter of minutes.

Armageddon would have started right there, by means of an escalation from conventional explosives to nuclear arms that, despite claims to the contrary on the part of some self appointed strategists, no one could really control or - to use the jargon of the time - “dominate”. Thus, if one was really serious about avoiding a nuclear war, the first order of priority was to lower the likelihood of a war in Europe. How? By making the conventional balance there as stable as possible and the military postures of both alliances as defensive as possible.

Thus, a new school of military strategy, focused on conventional arms, sprung up in the early eighties. It was called “defensive defense” and its most active representatives were Albrecht von Müller, a German, Anders Boserup, a Dutch, Robert Neild, a British. Pugwash lent its credibility to these intellectual efforts by sponsoring several study groups on defensive defense. One such group was held in Altamura, near Bari, in the Fall of 1987 – Nicola Cufaro organized it, together with Giuseppe (Beppe) Nardulli, an accomplished physicist and brilliant arms controller, former secretary general of USPID. Beppe, like Paolo, died prematurely two years ago and, also like Paolo, was an unforgettable friend of all of us.

Both Paolo and myself were invited in Altamura and it was at this juncture that our paths crossed for the first time and we became colleagues and friends.

Paolo's production in this sub-field of arms control and disarmament is, as you may expect, quite impressive in any respect: style, acumen and depth of research. Together with Dimitri Batani he wrote a masterly analysis of what was actually going on NATO's Central Front, titled “The Conventional balance in Europe: ‘Bean Count’ or complex assessment?” and published in the 1991 book *The Arms Race in an Era of Negotiations*, the proceedings of another ISODARCO.

In 1989, in one of the rare cases in which the Italian military showed some interest toward the opinions of the Italian scientific community on military affairs, the Centro Militare di Studi Strategici (CeMISS - Military Center for Strategic Studies) commissioned to Paolo, Francesco Calogero, Gianluca Devoto and myself a research report on defensive defense and the role of Italy.

The report was published in 1990 and Paolo wrote most of it. To be frank, I doubt that it had much of an impact on our top brass.

Fortunately, however, the cold war had just come to an end and with it Paolo, myself and other colleagues stopped worrying - perhaps not about the bomb itself (I'm quoting Dr. Strangelove here), but certainly about the conventional balance in Europe. I'll come back at the end on what has become in the meantime of it and of several other objects of Paolo's attention as an arms controller.

With end of the cold war, Germany was re-united and the Warsaw Pact was dissolved – which implied that Paolo's and my own concerns with NATO's Central Front and the conventional balance at Italy's northeastern border had become largely obsolete. I can guarantee to you that both of us were ecstatic at the prospect that this particular interest of ours had suddenly become irrelevant – arms control and disarmament is, I believe, one of the few human endeavors in which one may, under certain circumstances, be very, very happy of going out of business.

Together, we turned our attention on what was called at that time “the peace dividend”. The idea was simple and straightforward: a world without ideological confrontation, a world at the “end of history”, simply did not need anymore the large arsenals that had been accumulated since the end of world war 2. Immense human and material resources could be put to better uses.

Thus, in 1991-92, Paolo and I tried to apply the peace dividend idea to Italy. We put together under the auspices of the Centro Studi di Politica Internazionale (CeSPI) a study group which included also Giuseppe Catalano, Marta Dassù, Gianluca Devoto, Beppe Nardulli and Rodolfo Ragionieri.

The result was a proposal to profoundly change the Italian armed forces. First, we suggested the abolition of conscription and the creation of an all volunteer army. And second we sketched deep cuts in major weapon holdings and manpower for the three armed forces. As a consequence, Italy's military budget would have shrunk of more than one fourth.

Beyond our own traditional milieu – CeSPI, Pugwash, ISODARCO and USPID – our proposal made us very few friends. The Italian left did not like it because it traditionally saw with great suspicion professional soldiers and, on top of that, considered the reductions we envisaged in the higher ranks (commissioned and non-commissioned officers) as a further threat to overall employment.

The right obviously hated the idea because they simply could not conceive cutting the size of the armed forces as well as military expenditures. The military hated it also for all of the above, left and right. Surprisingly, Italy's top brass were particularly vocal in rejecting an end to conscription because they claimed that they had no other way of recruiting the brightest and the best of the

nation's youth. And among Italy's top brass the then chairman of CeMISS, gen. Giuseppe Cucchi, was one of the most skeptical. I mention this because the information will come handy at the end of this presentation when, as I promised, we will see what happened to the various issues that Paolo dealt with.

Even at the risk of not doing full justice to the breadth of Paolo's commitment on arms control and disarmament – but please have a look yourself at his truly impressive list of publications – I now turn to the last issue that he covered with all his unique combination of knowledge, style, passion and willpower. And this is the case of Mordechai Vanunu, for whose freedom Paolo fought till the end of his own life.

Vanunu is a former Israeli nuclear technician who, in 1986, revealed to the British press the extent of Israel's nuclear program. He was then abducted – from Italy of all places, a fact that made Paolo particularly indignant of the deafening silence that surrounded the Vanunu case in this country – by Mossad, transported to Israel and sentenced in a trial held behind closed doors to 18 years in prison, 11 of which he spent in solitary confinement.

Paolo made literally whatever he could possibly do and more to call the attention on this case and mobilize public opinion. *Sapere* published many of his appeals over the years, whereas the English reader can easily retrieve on the website of *The Bulletin of the Atomic Scientists* an article he published together with the French Physicist Venance Journé in the issue of January/February 1991.

Paolo's passionate defense of Vanunu was motivated exclusively by the defense of the Israeli technician's human rights – patently violated by the abduction, the secret trail, the solitary confinement – and by his solidarity with Vanunu's courage in acting as a whistleblower of a secret nuclear program.

Let me quote him and Venance on this point.

"Vanunu's case – they wrote in the *Bulletin* – should be considered in light of the ethics of science and technology. In 1946, Albert Einstein summoned scientists and others of good conscience to speak up and inform the public, no matter the magnitude of personal risk. [...] Protection for whistleblowers working in critical areas of arms development and production, when weapons of mass destruction or systems forbidden by international treaties are involved, would be an important element in treaty verification and would inspire international confidence".

On the other hand, Paolo had not the slightest animosity toward the state of Israel, which he always regarded with respect and sympathy. One of his articles – published in the April 1991 issue of *Sapere* – thus ended: "The idea of a nuclear weapon free zone [in the Middle East], officially

supported by Israel [...] could be a first step toward a process of disarmament in the region. Negotiations among all states in the region should start immediately. Vanunu's choice could thus end up being the most foresighted inasmuch as, far from damaging his country's security, it would have strengthened it".

Ten years from Paolo's absurd and untimely death, let's now have a quick look at whatever happened to the problems he so brilliantly contributed to find a solution to.

ASAT is an issue that largely faded away – even though primarily the U.S. and Russia still have capabilities and, as Paolo never tired to remind anybody that would care to listen, pursuing research on ABM implies research on ASAT as well. In January 2007, China tested its ASAT by destroying an old weather satellite and making a big, huge mess in terms of space debris.

Star Wars, or rather research on ABM systems, is still alive, even in the Barak Obama administration, albeit at a reduced level of funding. It still is very, very far from the fancy original promises made by Ronald Reagan of "rendering nuclear weapons impotent and obsolete" – a goal Paolo would be ready to share if only were attainable. The ABM systems that the George W. Bush administration intended to deploy in Europe, in Poland and in the Czech Republic, were canceled by the new one now in power.

The ABM Treaty is no longer in force since the unilateral withdrawal from it by the U.S. in 2002, under the Administration of George W. Bush. There are no longer legal constraints now to pursue ballistic missile defense – even though the hardest constraints, the budgetary and technical ones, are still there. The overall atmosphere of nuclear arms control and disarmament has certainly moved in a direction that would have delighted Paolo since Barak Obama came to power. It's now official U.S. policy to pursue a nuclear weapon free world.

In Europe there is no longer any conventional balance – or imbalance for that matter – one can speak of. The countries that used to be Moscow allies are now in NATO. European armies still have some, limited use, only when sent outside the old continent on peacekeeping or, unfortunately but also less frequently, on war fighting missions.

This obvious fact does not yet lead NATO to get rid once and for all of a couple of hundred of so-called tactical nuclear weapons – these are the remnants of a much larger arsenal originally intended to "compensate" NATO supposed conventional inferiority and trigger escalation to Armageddon in case of a Soviet attack. Thus they are hopelessly obsolete you would think.

But no, oh no! A committee of experts chaired by no less than former secretary of state Madeleine Albright recently recommended NATO, which is reportedly debating a new "strategic concept", to

keep these weapons. It is definitively not the kind of recommendation that Paolo would have welcomed.

Conscription was suspended in Italy (not abolished because that would require a constitutional amendment) during the center-left government in power from 1996-2001. For the first three years of that legislature, the Prime Minister was Romano Prodi. His military advisor was general Giuseppe Cucchi. The law, however, took full effect on 1 July 2005 under the center-right government of Silvio Berlusconi who did not have the slightest hesitation in taking credit for the reform.

The number of equipment and manpower for the three armed forces went steeply down in the meantime and they almost coincide now with what Paolo and Beppe and the rest of the study group proposed. Expenditures as a percentage of Italy's GDP are already below what we proposed back then.

The Federal Republic of Germany was the last big European state to have kept conscription but is currently considering switching to a professional army. Karl-Theodore zu Guttenberg, the defense minister, intends to reduce manpower from the current 250,000 to 150,000 – the latter figure is exactly the number we came up with 18 years ago for Italy.

Finally, Mordechai Vanunu was released from prison in 2004 but he's still subject to any number of restrictions to his personal freedom, including giving interviews to foreign journalist or leaving the country.

On May 24 last, exactly three weeks ago, he was arrested once again and sent to jail to serve a three-month term for violating the restrictions placed on his release.

How messy and unpredictable the world of earthlings is if it takes us so long to understand what special people like Paolo try to tell us and sometimes we don't even get it.

We should really be grateful to Paolo Farinella - this great, great man – for any minute of his short and precious life in which he diverted his attention from his beloved celestial objects to care for us.