

Beware, the sky may well fall on our heads

Space debris from dismembered satellites and rocket launches orbiting the planet Earth poses a threat to life and the environment

By THANASSIS TSINGANAS
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When pieces of the destroyed Russian space station MIR began to enter the earth's atmosphere in March 2001, the scientific community held its breath. The question was: Would they fall into the sea between Chile and Oceania or were their calculations way off?

As the pieces of the spaceship, the last symbol of the Soviet space era, rained into the Pacific Ocean one after the other, scientists heaved a collective sigh of relief. The prediction that the pieces would fall within an imaginary geographical parallelogram of 200 by 6,000 kilometers, had come true. The pieces of MIR that bombarded the Earth caused no damage. After all, thousands of calculations, by the finest instruments and best and brightest minds in the world, had gone into tracking their orbits.

"If only," experts say, "we were able to do the same with the thousands of other pieces that are circling the earth where the atmosphere meets space."

Astrophysicists, astronomers, NASA researchers and thousands of other scientists openly voice concern about space debris. Thousands of pieces of junked satellites that were launched for scientific and military reasons, rocket parts, empty fuel tanks and other garbage that has simply lost its way aimlessly roam space near the Earth — about 400 to dozens of thousands of kilometers above the planet's surface. In the future, they could seriously damage the globe's space health.

Greek and British scientists sat around the same table at an



event organized by the British Council in Thessaloniki in order to discuss the "possible dangers of heavenly bodies in the Earth's neighborhood."

The debate both brought out the extent of the problem and also delivered the judgment that it was time the issue left the narrow bounds of the scientific community and be put to public opinion. Dangers from the sky tend to be considered in terms of meteorites crashing into the Earth. A scenario beloved of Hollywood, it has taken up reams of celluloid. But the relatively greater danger is for the sky to fall on our heads, as the Gauls in the Asterix cartoons feared — and it's a subject on which there

is virtual silence.

"There is a lack of information about space debris," said Nikolaos Spyrou, professor of astronomy at Thessaloniki's Aristotle University. "Most people do not know of the problem, which undermines the future of space travel itself and the future place of residence of human beings, if one accepts the notion that a number of space stations will be built in the Earth's near space in the future."

Over 10,000 objects

The numbers given by the British and Greek experts could not pass unnoticed. "From the Sputnik launch in October 1957

until today, over 3,500 space missions have been carried out. As a consequence of this activity, special sensors have tracked down some 10,000 objects in the Earth's near space, a figure that is augmented by 200 additional objects per year, chiefly due to the collisions between them."

Of these objects, around 5 percent (some 500 objects) continue to perform a useful function. In addition, a small percentage (less than 1 percent) of registered satellites have radioactive materials, which is expected to cause special problems in the future.

But "the real number of objects of human origin orbiting round the Earth, up to 1 cen-

timer in size, is multiple the official figure," experts say.

How space garbage came into being is not difficult to explain. Space launches and projects are the most important factors in the increase, along with the unscheduled dismemberment of satellites. Solar activity is often deadly in its impact, as in the case of Skylab (a fragment of which killed a cow in Australia).

Professor Spyrou noted another, less well-known effect of space garbage, especially on the science of astronomy. The existence of thousands of such objects around the Earth, glittering in the sun's rays, create a halo that renders telescopes useless. Many observatories, due to

light pollution from cities and space garbage are having difficulty studying the starry sky. Year by year, their vision is diminishing.

"Within one or two decades, this material — if it's not removed — will pose a serious threat to spaceships, space stations and human beings on Earth," Spyrou said.

The effects of human activity on near space will be joining the known environmental problems of our age, such as the greenhouse effect, the hole in the ozone layer, nuclear weapons, species extinction and biological warfare. The problem is so important that experts stress that an international treaty is

needed for the use of near space in order to introduce ecological management of the Earth's space environment.

One treaty is not a magical solution. The issue is multifaceted. Apart from the clearly scientific and technical issues, there are the economic, legal and international issues in the use and protection of near space for political and military purposes.

As the British Council conference concluded, "what is needed are international cooperation and treaties, as well as enforcement of those agreements, as is the case with the protection of Antarctica, the law of the sea, atmospheric pollution and the protection of the ozone layer."



Rocket parts, empty fuel tanks and other pieces from the thousands of vehicles launched into space orbit aimlessly round the Earth, forming a screen of glittering junk that makes it difficult for astronomers to observe the stars. Some of the debris (above right) actually falls to Earth, posing a threat to life and property. Scientists are growing increasingly concerned by space garbage as an environmental threat.

Youngsters get their own champion, to whom they may pour out woes

Welsh Children's Commissioner lays out radical approach to rights of the young

By ALEXANDRA KASSIMI
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Imagine a world where children play a part in the decisions that affect them, where they can take problems, great or small, to figures of authority, where children select the person who can ensure their rights.

No, this is not a scenario out of the pages of a children's book, but a pioneering approach to children's issues and their rights, implemented by the Chil-

dren's Commissioner of Wales, Great Britain. His office is inundated with calls and letters from youngsters who explain problems and suggest solutions.

In mid-March, the children's section of Greece's Citizen's Advocate held a seminar along with the British Council where the main speaker was Peter Clarke, Children's Commissioner for Wales. He spoke to Kathimerini about how children could make complaints and suggests feasible solutions to their problems. But chiefly, he talked about how adults needed to take children's opinions into consideration.

Out of the mouths of babes...

How was this idea, which had never been tried before, born?

A children's champion is an institution that exists in various parts of the world, though degrees of authority vary. Its basic role is to defend the rights of children. We thought that the best way to learn about children was to give them the chance to speak out.

In addition, there are smaller-scale problems, such as bad relations between pupils and teachers or among pupils. The most effective solution is one that comes from the mouths of those most directly involved.

At the same time, we find it inconceivable that we give political rights to young people and involve people who have just turned 18 in decision-making without them having had any previous experience. We can't reproach the young for being indifferent to social and political issues when these involve procedures they have never grappled with before.

Our basic aim, therefore, is to win the trust and respect of children. The main difficulty, naturally enough, is to approach children, to forge relations of trust with them and also to educate adults to do the same.

The essential element in our every conversation with a child is to make the child feel safe. Next, we try to lay down some ground rules for the discussions, which are decided on jointly.

We hear proposals that are out of this world, but

we are obliged to study them carefully because of the messages they may conceal. In addition, this is the way we show respect for our interlocutor. Children are part of the solution, not part of the problem.

Once a week, you carry out visits to schools, you have a broad communications network with children via letters and telephone calls and you are regularly adding to your website. What are children's most common complaints and how do you get them to provide solutions?

I meet pupils on their own ground so that they feel safe and they know that it's not just them addressing us but that we are interested in them. The most common problem I hear about at schools is the state of the school toilets! Kids are also particularly troubled by bullying at the hands of other children. Since this is a delicate issue, and direct intervention by an adult is not always effective, we try to explain in many different ways that this kind of behavior is wrong.

In the case of school bullying, we train teams of students to handle these kinds of situations properly, while we know in which cases they need to ask an adult to intervene.

In relation to the solutions proposed by children, I can only give an example. The sum of 3,000 euros was given to the children of a Welsh school as their yearly budget, and they were asked to spend it in the way they thought best. The children opted to

hire three more people to serve at the school canteen, thus cutting queuing times. By handing the initiative over to children, we ascertain that they are wholly capable of handling issues that concern them.

Guidance by adults is, of course, essential, as long as it's given with respect for the child.

You took up your duties as Children's Commissioner in 2001, and you were selected by a panel that included young people. What was the experience like?

Nobody is more competent to decide who will defend the rights of children than children themselves. A committee was set up to examine the six candidates. In the first room, a 12-member panel of children was waiting for us, while two adult helpers were present. The questions that were addressed to me were disarmingly direct and blunt, such as, "Do you like children?" while I was asked the predictable questions, such as, "If you got the job today, what would you do tomorrow?" When I was done there, I had to go into yet another room, where a six-member committee made me go through a hypothetical telephone conversation with a little girl who wanted to tell me that she was being abused, but was hesitant about talking to me. The children wanted to see how candidates would react to conditions of pressure and how caring and patient they were. The process may have lasted only an hour, but it seemed to me an eternity.

Independent authority

What are your relations with the State?

We are an independent authority, which facilitates our work incredibly, while it also lends us prestige.

Our role is usually not a pleasant one, since we systematically monitor institutions and organizations.

But the government wants us to be active, given that we were created in order to solve certain problems. I'm often in the position where I fire off pretty strong criticism, but cooperation with the government is good.

I have important powers, though I'm not answerable to anybody. I can't impose my opinions but I can make recommendations and express my disagreement publicly.



The Education Ministry hopes this year's university entrance exams will go smoothly.

Five thorny issues in education are seeking solutions from new gov't

By APOSTOLOS LAKASAS
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"We will implement New Democracy's policy on education to the letter," vowed Deputy Education Minister Marietta Giannakou in an interview with Kathimerini.

But clearly emphasis will be laid on those issues that urgently require solution, that will result in the improvement of the Greek educational system and bring it closer to European standards.

High on the agenda at the new Ministry of Education are increased funding, evaluation, redressing inequalities in compulsory education, overhauling curricula and teacher training.

Deputy Minister Giorgos Kalos (who is in charge of primary and secondary education) told Kathimerini the ministry's aim is to have this year's university entrance examinations conducted without problems.

As of next year, preparations will start for changes to the system for entering tertiary education.

Already, exams in the second class of senior high, which counted toward university entrance, have been abolished. (Subjects will be examined by the school.) From 2006, the number of subjects that will be studied in the third, final class of senior high will be cut from nine to six, after consultations with teachers over which subjects to ax.

Preparations for the next school year (hirings and transfers) will start immediately, while the huge question of unpaid wages for substitute teachers will be solved immediately, the deputy minister promised.

But funding for books, that permanent headache of educational planning, also promises to queer up the schedule. At the same time, Kalos said, primary and secondary school curricula would be revised and

improved. New technologies will be introduced in order to smooth out inequalities between schools, especially with respect to Internet use and the new technologies as a tool for learning and broadening schoolchildren's horizons.

Tertiary education, the aim is to create an integrated higher education system in Europe by 2010, which requires the convergence of Greek universities with their European counterparts.

Deputy Education Minister Spyros Taliadouros (in charge of tertiary education) says three factors will play a major role in the realization of this goal: sufficient funds, the level of administrative structures and ensuring course quality via a system of evaluation that would help Greek degrees achieve better recognition in Europe.

Taliadouros said the immediate priority is to push through a strategic plan with a four-year program for each university.

To implement it, universities' cooperation will be sought, while each university will make its own, programmatic agreement with the Education Ministry.

Another priority is to provide more student accommodation for students in regional universities.

As for technical colleges (TEI), priorities are strengthening infrastructure and boosting staff numbers, the deputy minister said. Today, in some TEI, 80 percent of lecturers are hired on an ad hoc basis. There is not enough money to pay them. In the current academic year, the TEI desperately begged for funds, since they had a shortfall of around 30 million euros due to pay increases for the extra staff.

Higher academic qualifications will be required of TEI lecturers, while an evaluation system will be introduced whose ultimate objective is to enable TEI to set up their own postgraduate courses.

The Children's Commissioner monitors institutions and organizations that deal with children, and lends a listening ear for children to talk about their problems. Schoolyard bullying is one of the most common complaints of children.

