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Italian science in space: technical attempts at communicating

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This study analyses the image of Italian space activities given by national dailies in the period from February 2001 to July 2002, in order to understand Italians' view of "Italy in space". It also considers the role that space scientific research can play in the communication strategies of Italian space activities in the upcoming years and the possible ways to improve its image through mass media.

Introduction

The communication of space activities to the public has always been linked to important events impressing public imagination, such as moon landing, sojourns on the International Space Station (ISS) and future exploration of Mars. Until now, such an approach has been enough to make contributors accept the considerable expenses of such activities. However, since space travelling has become a job — with more than five hundred men and women having orbited the Earth now — and one satellite launched as often as every other day on average, the communication strategy of the leading space agencies has also changed. Now, the most frequent topics of discussion concern the applications of space technologies (i.e. evening weather forecast, telephony), as well as scientific research receiving new stimuli from orbital laboratories, interplanetary probes and space telescopes.

For years, Italian industries and scientists have been rightly involved in major international space programmes. However, in Italy the communication of these activities to the public still seems linked to timely and extraordinary events, and there seems to be no awareness of the scientific and strategic importance of space research, as well of the national role in this context.

Data and analysis

Italians' impressions of space activities carried out in Italy can be understood by studying how often national dailies report articles dedicated to such events. The daily press review of the Italian Space Agency (Agenzia Spaziale Italiana, ASI) by the *Eco della Stampa* has served as a data bank. It takes account of 35 national, regional, provincial, economical and political dailies, together with their supplements, and it selects long and short articles relating to space, aerospace and astronomical activities, in all cases mentioning ASI.

This study makes a further selection. It excludes all articles dealing with defence space activities (i.e. star wars, military satellite launching), with astronomy from earth observatories or in laboratories (i.e. instruments and results from telescopes of the European Space Observatory, observation of falling stars and meteorites, the case of alleged alien life on meteorites), and with political-economical news about aerospace industries in general (i.e. share prices and appointments in Finmeccanica). This study also excludes all articles which mention ASI without talking about its activities (i.e. new headquarters planning, agency lists). Finally it excludes paragraphs (shorter than 700 characters) and, as far as supplements are concerned, weekly magazines (i.e. *Sette* of *La Repubblica* and *Io Donna* of *Il Corriere della Sera*), but not thematic supplements such as *TuttoScienze* (later becoming *TuttoScienzeTecnologia*) of *La Stampa* and *New Economy* of *Il Sole-24Ore*.

This study covers the February 2001 to July 2002 period. It is a period which includes two flights of Italian astronauts on the ISS, respectively in April 2001 and in April 2002, and for which there is reliable data. Making the above-mentioned selections, in these eighteen months Italian dailies published a bit more than 1500 articles, that is an average of less than three a day in all newspapers and less than two

and a half a month in each newspaper. These average values represent the general trend, but they are not very relevant, as the articles refer to timely events.

Before analysing their time distribution, I will classify the articles according to their subjects, because it is the relation between these two variables (time and subjects) which gives information about the newspaper readers' impression of space activities.

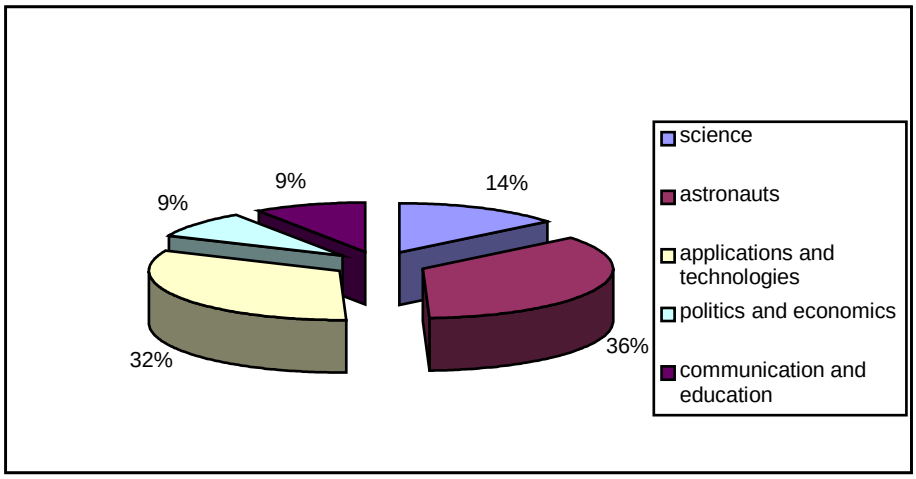
As this survey aims at understanding Italians' impression of national space activities, with particular reference to scientific enterprise, it is first necessary to separate articles focusing on Italian space activities or on Italian involvement in international activities from those dealing with non-Italian activities. This operation approximately halves the number of articles and reduces the average to a bit more than one article a month per newspaper.

Then I have divided articles about Italian activities into five categories according to their subject:

- *science*: construction of satellite instruments in order to study the universe and the Earth from space; results from the analysis of data coming from such instruments; results of studies carried out in orbital laboratories;
- *astronauts*: flights of Italian astronauts, their activities before and after launching; comments, interviews;
- *applications and technologies*: launchers (initially a category of its own, later eliminated because of the small number of articles); systems of telecommunication and of earth observation; technological developments;
- *politics and economics*: commercialisation of space activities; investment strategies;
- *communication and education*: conferences, exhibitions, activities for schools and universities.

Obviously this division into categories is not always clean-cut, and in case of articles dealing with more subjects, I have considered their main theme, as well as their title.

The results of this classification are summarised in the chart of **figure 1**, which shows the percentage of each category for all articles dedicated to Italian activities from February 2001 to July 2002. Neither has time distribution been taken into consideration

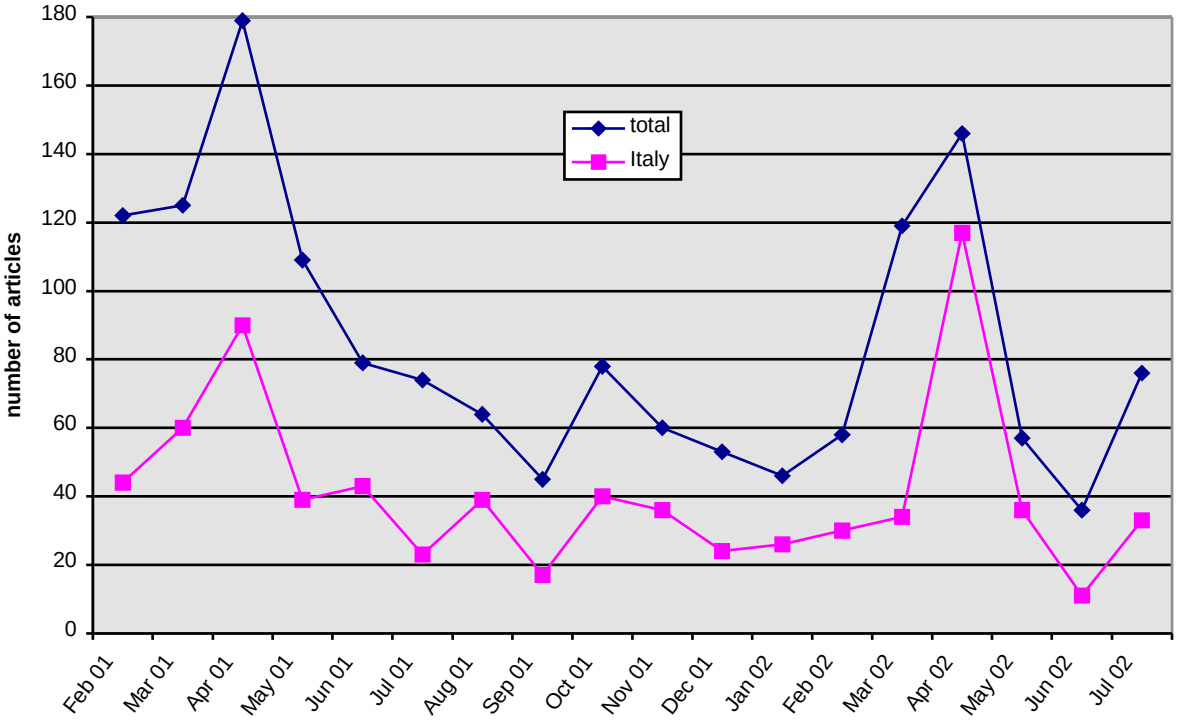


in this case, though it will be discussed further on. **Figure 1** reveals a clear predominance of articles regarding flights of astronauts as well as applications and technologies; science has slightly more articles than both politics and economics as well as communication and education.

Figure 1. *Italian space activities in daily newspapers from February 2001 to July 2002*

As far as the analysis of time distribution of articles is concerned, data has been collected on a monthly basis. The results are summarised in the following charts. The chart of **picture 2** shows time distribution of the number of total articles and of articles dedicated to Italian activities, and it clearly reveals two peaks in correspondence with the flights of the astronauts Umberto Guidoni — April 2001 — and Roberto Vittori — for the Marco Polo mission, April 2002 — on the ISS. In the first case, it was the first flight of a European astronaut on the ISS and the first employment of the Multipurpose Pressurised Logistics Module (MPLM), the major Italian contribution to the ISS. Nevertheless, only half of the articles deal with Italian-related activities and the others talk generally about the construction of the ISS and the first space tourist, the American Dennis Tito. Conversely, in the second case, most articles are dedicated specifically to Vittori's flight, and, unlike the previous year, there is a fall in the number of articles in the two following months. Time distribution also shows an amount of total articles above the average in October 2001, when newspapers talked widely about the flight of the French astronaut, Claudie Haigneré, on the ISS and about the American Odissey probe's entering into the orbit of Mars, and in March 2002, as approval was given to the Galileo European project and the NASA mission for the installation of new instruments on the Hubble Space Telescope.

In general, the difference between the two curves of **figure 2** is due to articles reporting press releases by the National Aeronautics and Space Administration (NASA)



and, less often, by the European Space Agency (ESA), most of which deal with scientific activities.

Figure 2. *Time distribution of the number of total articles and of articles dedicated to Italian activities*

The chart of **figure 3** shows time distribution of the number of articles exclusively regarding Italian activities divided into the above-mentioned categories. It reveals a clear predominance of articles dedicated to the astronauts Guidoni and Vittori. In addition to the two main peaks corresponding with the flights on the ISS, there are above-average values in the two following months (only in one in the case of Vittori), in August 2001 for the announcement of the Marco Polo mission, and in Februry 2002 for the press conference before Vittori's flight. As previously mentioned, the "astronauts" category only includes articles focusing on astronauts as public figures (i.e. articles and interviews with the protagonists and their family, accounts of their activity before, during and after the flight, meetings and conferences after returning to Earth), and not articles dedicated to specific activities carried out on the ISS, such as Guidoni's employment of the MPLM, classified as "applications and technologies", and Vittori's scientific experiments, classified as "science".

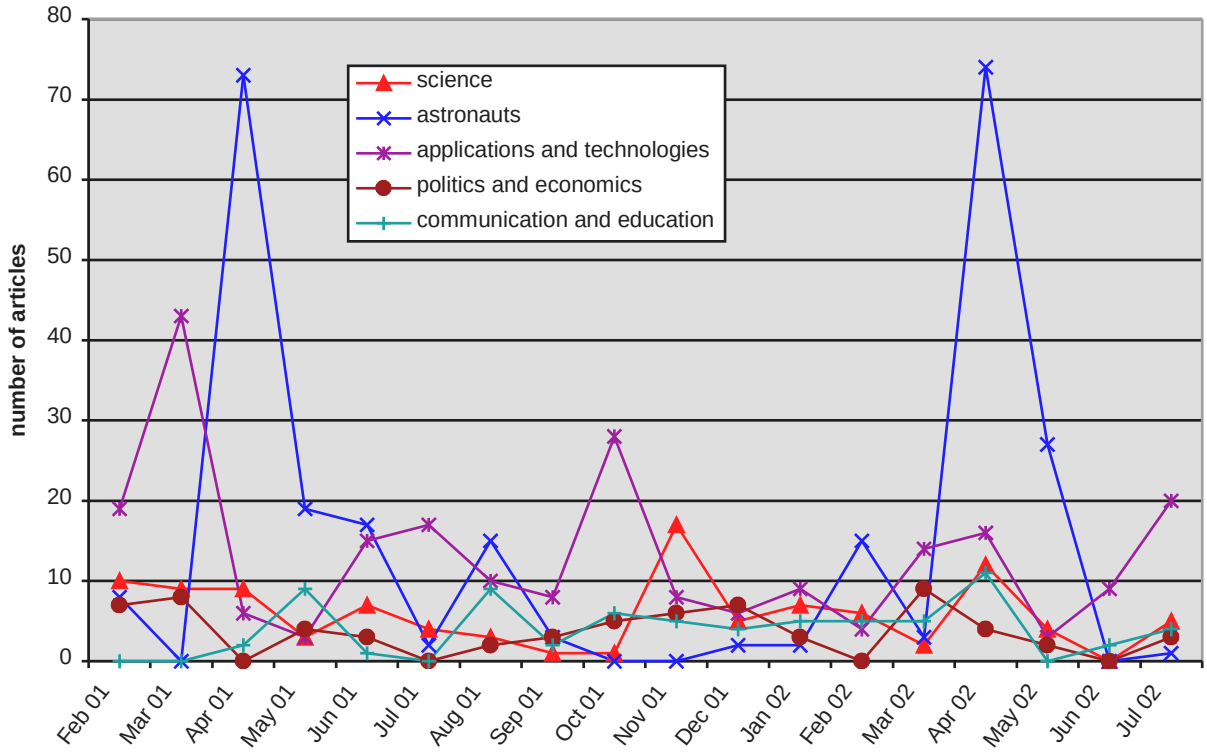


Figure 3. *Time distribution of the number of articles exclusively regarding Italian activities divided into five categories*

In addittion, as far as articles dedicated to applications and technologies are concerned, time distribution reveals above-average values, linked to precise events:

- March 2001: preparation for the first launch of the Italian MPLM on the ISS;
- June-July 2001: launch of the Artemis telecommunication satellite by Alenia Spazio for ESA and Telespazio's difficulties in putting it into the right orbit;
- October 2001: opening of the new wind tunnel for tests on space vehicles at the Italian Centre for Aerospace Research (Centro Italiano Ricerche Aerospaziali, CIRA) in Capua;
- March 2002: launch of the Envisat European satellite by Alenia Spazio;

Time distribution also reveals a general rise linked mainly to articles regarding the increasingly widespread employment of earth observation satellites for applications such as land and sea monitoring, weather forecasting, climate control, (improbable) anti-crime support.

As for articles dedicated to science, only in two cases are there more than ten articles a month:

- November 2001: delivery of the Ibis Italian telescope of the Integral satellite for gamma astronomy and Nature's publication of the results of a study, partially financed by ASI, on a protein causing serious diseases to the nervous system;
- April 2002, scientific experiments carried out by Roberto Vittori during the Marco Polo mission.

For the remaining period, the number of articles is very small (with a record of 0 articles in June 2000), though scientific instruments for important ESA missions are being prepared and the first Italian experiment was carried out on the ISS from August to December 2002. An analysis of these articles shows that:

- more than one third of the articles have no signature, probably because they come from an agency or from a press release;
- no author wrote more than five articles on this subject from February 2001 to July 2002, whereas a great many wrote only one, thus showing poor knowledge;
- only a couple of articles are written by scientists in this field;
- about 50 per cent of the articles are published in national dailies, namely *Il Sole-24Ore*; the remaining are equally distributed among regional, provincial and political newspapers.

In general, articles are written correctly and have no errors, but in the great majority of cases are limited to reporting news without discussing or analysing it, thus showing an underlying lack of both scientific and structural knowledge in the field of Italian space science.

Proposals

These results show that the impression Italians have of national space activities from newspapers is strictly linked to the flights of Italian astronauts. On the contrary, Italians know very little about the involvement of the Italian scientific community in international programmes of space research, regarding not only data studies from astronomical satellites, but chiefly physical, biological and medical research carried out in microgravity conditions in space laboratories. It would be interesting to see which combination of factors, among those contributing to the creation of such an image (i.e. ASI's will, journalists' filter, readers' interest), is responsible for this situation.

Since neither a communication plan, nor a simple list of ASI press releases are available, I will limit myself to suggest the employment of a few instruments in order to use editorial offices more efficiently: publication of newsletters, press releases jointly sent out by agencies (i.e. using the means of the National Research Council, which has recently and successfully developed the communication sector), coordination with ESA, which has been giving more attention to communication in the language of each individual country for some time.

Other more structural, long-term initiatives can be used to arouse curiosity and interest at first in journalists and then in readers, and to improve their rapport with the scientific community:

- the organisation of courses for journalists (in addition to scientific journalism in school programmes) to introduce them not only to technical and scientific aspects of space activities, but also to their economic and social implications, to enable them to play a critical role when choosing and managing space scientific activities and to encourage them in correct and thorough communication;
- the organisation of meetings on regular basis with journalists for their update on ongoing programmes and future projects;
- measures for the scientific community for training researchers in communication, not only by explaining communication mechanisms through mass media, but also by fostering awareness of the need for dialogue with society in order to continue research activities;

- creation of a register for scientists interested in presentations and available for speeches, interviews and comments for national or international news.

Conclusions

The results of this study show that the idea of space scientific activities in Italian public opinion is still strictly linked to NASA, and that “Italy in space” refers only to recent flights of the astronauts, Umberto Guidoni and Roberto Vittori, without mention of purposes and advantages, but almost exclusively stressing social aspects. This is undoubtedly linked to the decisions of the ISA, which has so much relied on these two events to build its image — whether by strategy or by chance. However, there are certainly other reasons for this situation (i.e. no awareness of the strategic importance of space research), which have to be identified to avoid complete lack of knowledge about such an activity and thus, considering the central role of communication, to avoid its complete decline. Now that (at least one hopes) the thrust of the military sector has died down and technology has developed so much that telecommunications can be completely attributed to the commercial field, it is increasingly necessary to keep space research activities alive. Actually, these activities are the only that can communicate important scientific knowledge, as well as encourage progress and technological innovation. Thus, an appropriate communication strategy can go a long way.

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