Voice
Information Technologies for
People with Special Needs

eAccessibility Conference

Barza/Ispra

24-25 November 2003

Presentation by Giuliano Pirelli
European Commission Joint Research Centre
Institute for the Protection and
the Security of the Citizen

◆ 25% of EU elderly or disabled (hearing loss increasing with age)

◆ 5% of EU deaf or hard of hearing

Just imagine being one of Europe's...

◆   300,000   deaf   (0.1% of the population)

◆   3,000,000   partially deaf   (1%)

◆ 30,000,000   hard of hearing, disavantaged and foreigners(10%)

…and try to *read* my lips.

Helping European citizens overcoming languages gap

Dubbing in other languages
- very expensive and long delay (copyright: voice in the film)

Subtitling in the original language:
- simple, quick, un-expensive, (rights, ?copyright: added text) (+ language training)

all users, seeing subtitles, even in the original language, helps understanding; for the hearing impaired users, this is the only means of understanding

Subtitling is one of the most powerful learning and training tools of any language: by reinforcing what is being learnt by hearing, enriching the vocabulary, in context

DEAFNESS: a disability concerning the SPEAKER and his control of the communication (*visual*) channel

We may help a person with physical impairment by pushing,
We may help a person with visual impairment in crossing the road,

We, the *able*, help him in HIS disabilit

DEAFNESS implies a communication limit

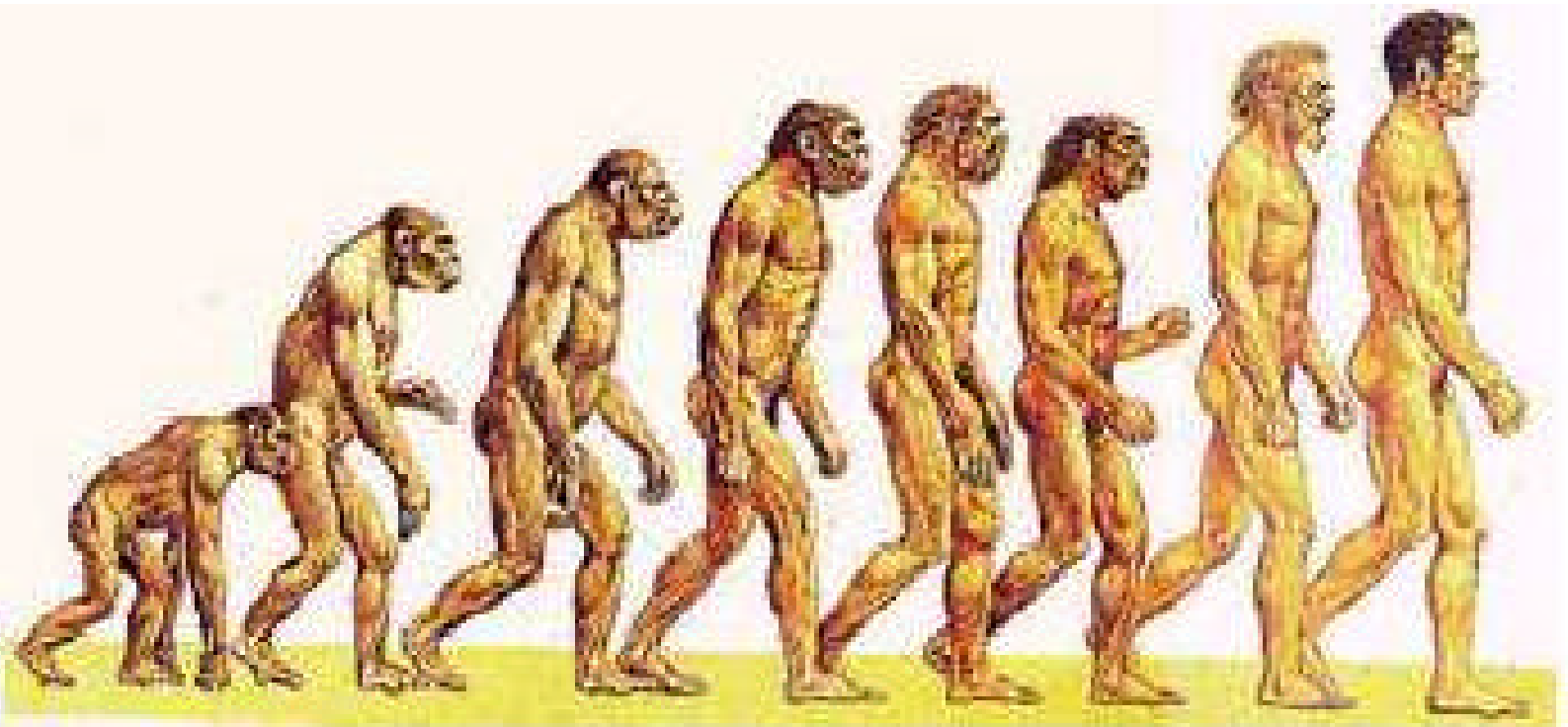We must help a person with hearing impairment in understanding our message:

from spoken VOICE to visual TEX
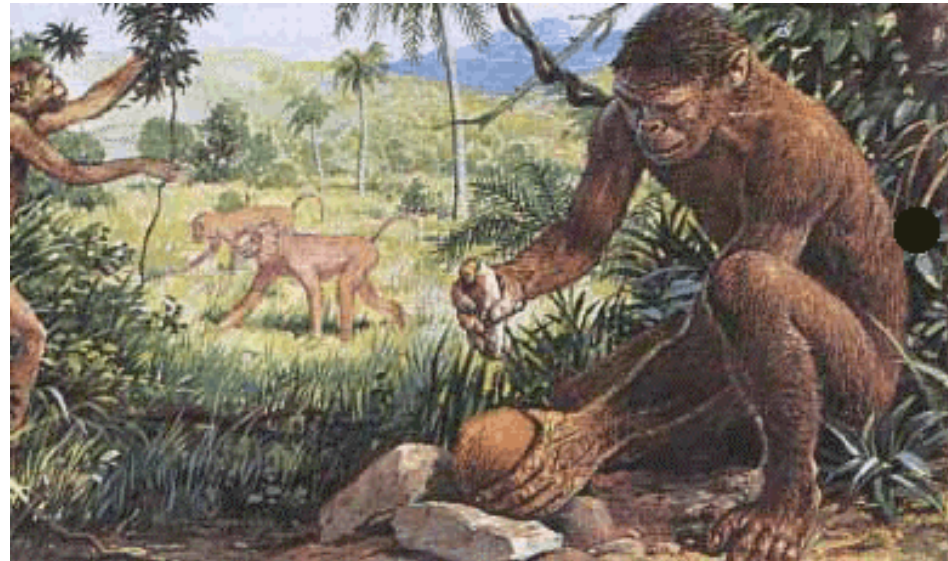
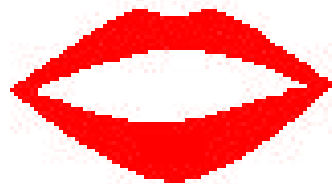HIS communication problem becomes OUR disability

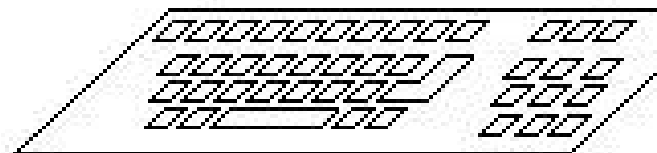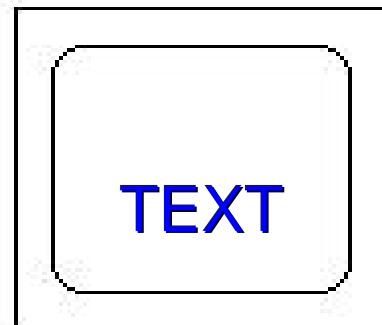To promote the use of voice to text recognition systems for the deaf.

Example: words may be recognised by a PC and converted into text, enabling a deaf person to *read* off a monitor what is being *said*.

Subtitles for:
- school
- conferences
- TV transmissions
- telephone conversations

VOICE

TEXT

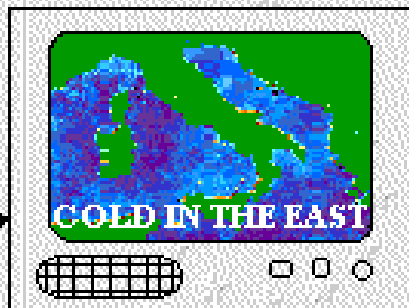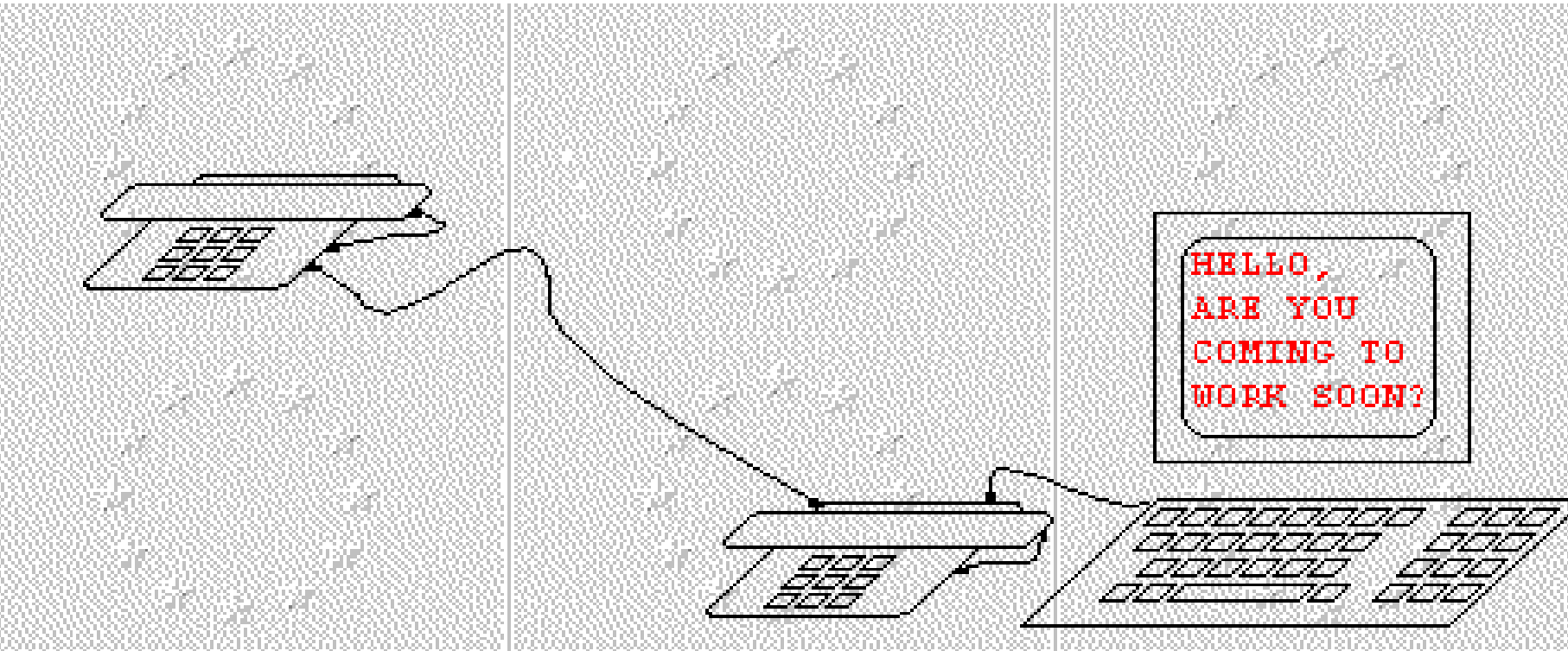# TV Subtitling

News Broadcasts, Live TV shows, weather reports, ...

VOICE TO TEXT Recognition

Video and audio managing device or program

COLD IN THE EAST

Telephone Recognition

HELLO,
ARE YOU
COMING TO
WORK SOON?

VOICE Accompanying Measure:
Giving a VOICE to the deaf, by developing <u>awareness</u> of VOICE to text recognition capabilities

◆ Objectives:
  - develop prototypes of voice systems for the deaf
  - demonstrate the prototypes to relevant organisations
  - use a VOICE Forum on the Internet as a Project tool
  - organise meetings / workshops using the prototypes

◆ Partners
  - JRC-ISIS, Kepler University of Linz, SoftSol-FBL, ALFA, CECOEV, IHSB

◆ Duration: 2 years

A slide is projected on the left screen by the speaker: the text generated by the speech recognition system is converted into subtitling lines and projected on the right wall-screen, under the speaker's image taken by a video-camera.

A deaf user communicates with a colleague: the text generated by the speech recognition system is converted into subtitling lines and overlaid onto the correspondent's video image.

btitled videoconference

voice@jrc.it
http://voice.jrc.it

- 100 workshops, 6000 participants, Web Site & Associations Forum
- Tests at schools
- Broadcasts RAI, RTBF, TV5, contacts TV Europe and Canada.
- Portable PC with glasses

Subtitled worksh

Development and harmonisation of subtitling in European television broadcasting

1/3 population: languages/communication difficulties

◆ living or travelling in other countries
   (news, education, amusement)
◆ hearing impaired and elderly

ocusing the aims and define the balance between technical and social aspects

- ◆ subtitles quantity: from 30%(?) to 100% of broadcasts
- ◆ quality: validation by (weak) user groups
- ◆ audience: lack of indicators on teletext pages' users
- ◆ style: differences in different countries
- ◆ DVD: uncertainty in a new area

◆ lack of awareness and co-ordination

- ◆ **There are technical solutions and pre-standards**
  - ● work to be done to promote them at a European level

- ◆ **Harmonisation as a *catalyst* to encourage the market**
  - ● ensuring links to (or defences from) USA and Canada
  - ● >90% subtitled broadcasts USA/Can, 60% UK, 30% D, I,
  - ● *design for all:*
    extending to all users the experience of specific users

- ◆ **Increasing in television subtitling + DVD and Web**
  - ● large distribution, translation easier by common formats

- ◆ **Risk of missing an important opportunity**
  - ● it is time for establishing a reference starting group
    for TV, digital TV, DVD
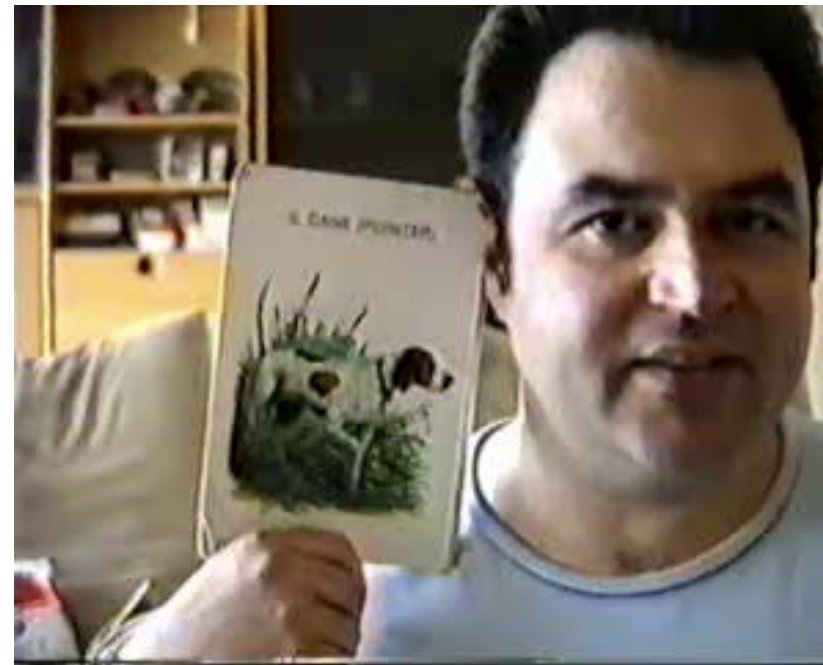
Let's pause a second...
Is this just a dream?

The most modern technological means 20 years ago

GOOD MORNING AND WELCOME TO EVERYBODY

RONALDO ARRIVED THURSDAY IN MILAN

Video-telephone subtitling

Multimedia
- television, digital television, digital radio, film/cinema
- video-cassettes, CD-ROM, DVD

Synchronisation
- on line: news, live broadcasts, sport
- off line: films, documentaries, games; time-code: in & out

Style
- open caption (visible for all users)
- closed caption (teletext page with subtitles)
- full text or resumed/simplified text
- number and position of lines: fixed or scrolling
- colours' schemas and characters' font and size

Users:
- normally hearing users: subtitles only of voice
- hearing impaired: subtitles of voice and of sounds (colours)
- audience: statistics on teletext pages' users; advertising

Tools: voice recognition, stenotype, manual keyboard

New tips: subtitles' indicator, sounds level meter, tele-command

Tables on http://voice.jrc.it/tv

	A	B	C	D	E	F	G	H
	Albania	RTVSH		Radiotelevizioni Shqiptar	http://rtsh			
	Algeria	ENTV		Entreprise nationale de Télévision	http://ww			
	"	TDA		Télédiffusion d'Algérie				
	Austria	ORF		Österreichischer Rundfunk				home@o
	Belarus	BTRC		Belaruskaja Tele-Radio Campanija	http://ww			tvr@tvr.b
	Belgium	VRT		Vlaamse Radio- en Televisieomroep	http://ww	no	yes	info@vrt.
	"	"	TV1	TV1	http://ww	"	"	info@tv1
	"	"	KETNET/C	Ketnet	http://ww	"	"	info@ket
	"	"	"	Canvas	http://ww	"	"	info@can
	"	RTBF		Radio-Télévision Belge de la Communaute	http://ww			mediation
	Bosnia-	RTVBH		Radio Televizija Bosne i Hercegovine				_
	Bulgaria	BNR		Bålgarsko Nationalno Radio	http://ww			http://ww
	"	BNT		Bålgarska Nationalna Televizija				
	Croatia	HRT		Hrvatska Radiotelevizija	http://ww			hrt@hrt.rh
	Cyprus	CY/CBC		Cyprus Broadcasting Corporation	http://ww			rik@cybc.
	Czech Republic	CR		Cesky Rozhlas	http://ww			
	"	CT		Ceská Televize	http://ww			info@cze
	Denmark	DR		Danmarks Radio	http://ww			dr@dr.dk
	"	DK/TV2		TV2 / Danmark	http://tv2.			
	Egypt	ERTU		Egyptian Radio and Television Union				
	Estonia	EE/ETV		Eesti Televisioon	http://ww			etv@etv.
	Finland	FI/MTV		Oy Yleisradio Ab	http://ww			mtv@mtv
	"	YLE		Oy Yleisradio Ab	http://ww			fbc@yle.fi
	France	GRF		Groupement des radiodiffuseurs francais				
	"	"	TF1	Télévision Française 1	http://ww			telespec
	"	"	FT	France Television	http://ww			
	"	"	FT2	France 2	http://ww			contact@
	"	"	FT3	France 3	http://ww			
	"	"	C+	Canal+	http://ww			http://esp
	"	E1		Europe 1	http://ww			http://ww
	"	ARTE		ARTE	http://ww			http://faq.
	"	A5		M5	http://ww			

VOICE Project and Year 2003, EURO-CIU Symposium Berlin, 3 May

Dovresti essere felice per Wilson, non è più solo !

- Una volta mi ha pagato da bere.
- Anch'io. Questo che significa ?

Bussano alla porta

Canta in inglese

Di questo parleremo con Luigi Baldelli...

..un fotografo che conosce bene l'Africa.

..dove la presenza della morte e della sofferenza è così grande...

◆ Subtitles' indicator

◆ Remote control

◆ Sounds level meter

◆ Teletext audience measures/surveys

◆ Zapping (hearing):

◆ Zapping (hearing impaired):

◆ remove Teletext

◆ > +1 (increase channel's number by 1)

◆ insert Teletext (page 100)

◆ goto 777

◆ sorry 888

◆ wait + doubts

THANKS FOR YOUR ATTENTION !

voice@jrc.

http://voice.jrc.

THANKS FOR YOUR FUTURE COLLABORATION

Che fai tu, luna, in cielo ?
dimmi, che fai, silenziosa luna ?
Sorgi la sera, e vai,
contemplando i deserti.

dal Canto notturno di un pastore
errante dell'Asia,
composto tra il 22 ottobre 1829 e il
9 aprile 1830,
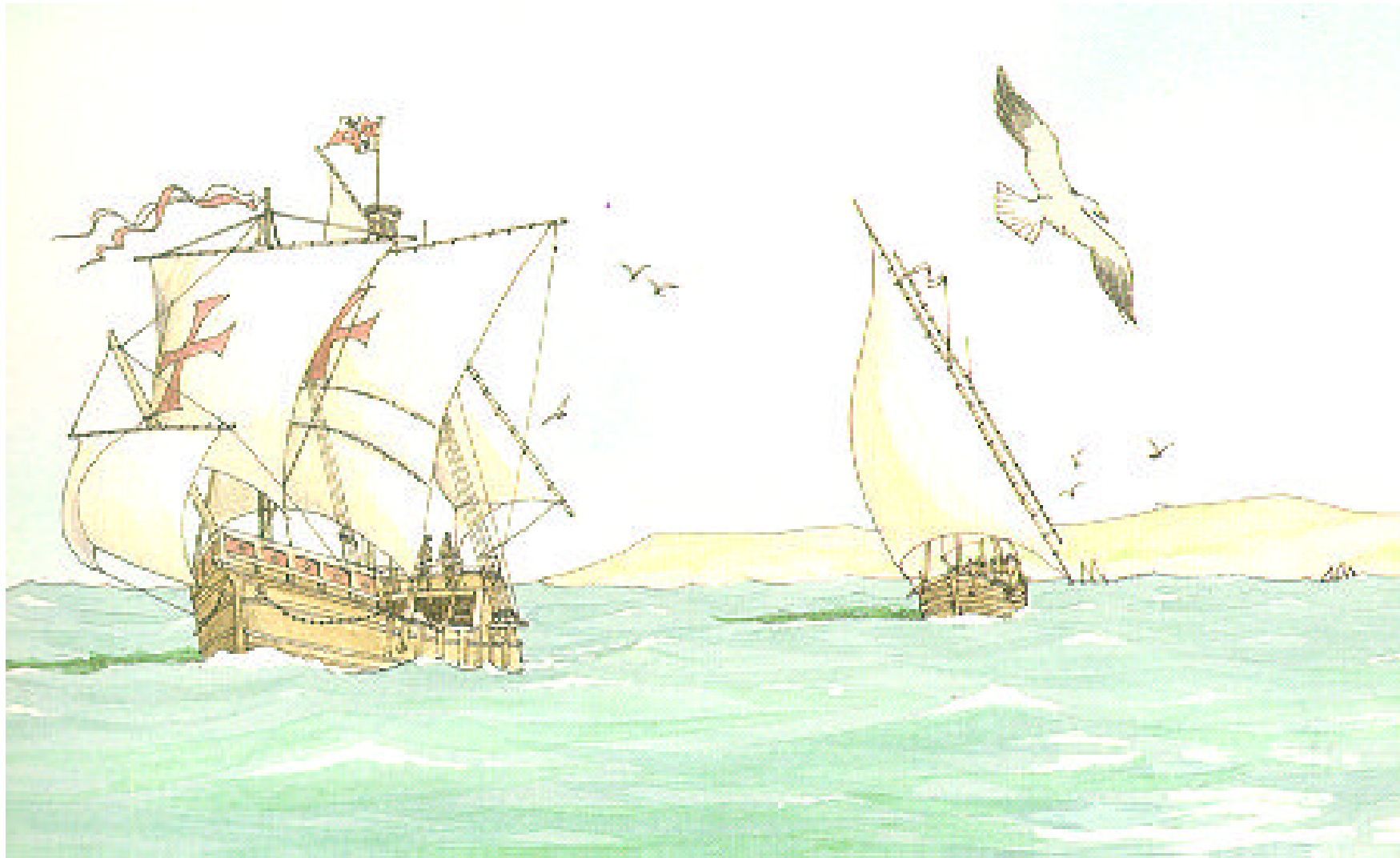pubblicato la prima volta nell'
edizione fiorentina del 1831.

Geografia spaziale

Gli astronauti si spostano su una piccola vettura lunare.

Modulo lunare Apollo
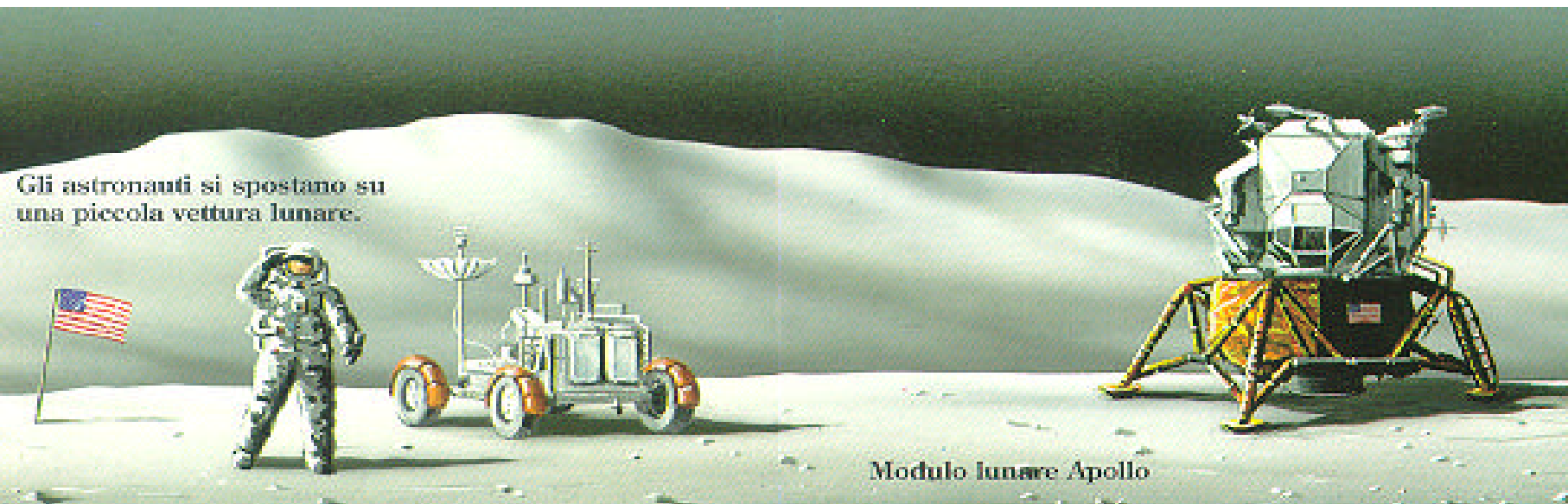
Navigando verso l'ignoto

The partners exchange and information via a VOICE Forum on the Internet and spread the results and best practices via a VOICE Web Site:

http://voice.jrc.it

Council Decision of 3 December 2001

on the European Year of People with Disabilities 2003

(h) to pay special attention to awareness of the right of children and young people with disabilities to equality in **education** so as to encourage and support their full **integration** in society … in the education ..., in order to improve the integration of pupils and students with special needs in ordinary or specialised establishments

3. Other actions: ... Cooperation with broadcasting and media organisations as for using new tools allowing easier access to this information (such as **subtitling** for the hearing impaired and **image description** for the visually impaired)

Bari: Year 2003 Italian Launching Conference
   2000 participants, authorities, ministers

Statistical data in Italy:
- 2.800.000 people with disability   =   5% population
- 2.500.000 families with a disable   = 10% population

We should make an effort to see the positive potentialities of
   people with disability instead of looking only at their
   disability.
A clear example is how we look at the **Pope**:
   we don't consider him as a person with disability,
   but as a very important person who is holding meetings
   to avoid the war in the world,
   even if he has some physical problems.

◆ Italy is a significant example of **integration** of people with disability in the **school** system and in society: the **youth** see not only elderly people with disability, but also young school-mates with disability in the classroom, source of friendship with them and their families during the school period, often continued after it, in the adults' life and at work.

◆ This approach may also be considered as a very good **investment**, since it allows a real integration at work.

◆ Moreover, the pedagogic approach developed for the needs of pupils with disability are **extended to all** teachers for all students.

Writing a decalogue,
10 basic rules in 10 different fields:

1) meeting a person with hearing impairment,
2) at the counter desk,
3) at a conference,
4) at school or university
5) for cinemas' managers,
6) for theatres' stage-managers, for the musical aspects,
7) for the TV broadcasters,
8) for the museums' super-intendents,
9) for the hotels' managers,
10) for people with hearing impairment.