Multi-media
Creative potential

Digital audio
Putting visitors in control

Remote cameras
Wildlife upclose

Game On!
Museums online

the journal for Scotland's Interpreters

Interpret Scotland

A' Foillseachadh na h-Alba

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Technology and interpretation

Interpret Scotland

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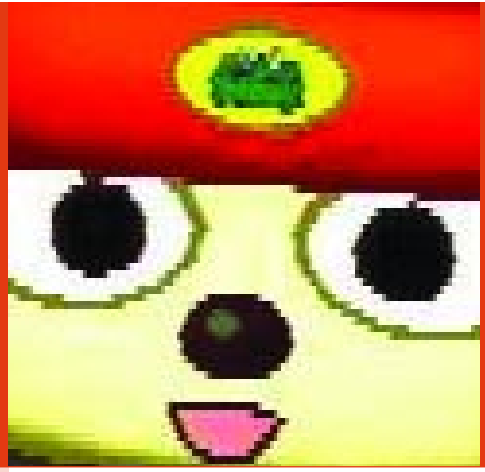
Interpret Scotland is an inter-agency initiative that seeks to:

- **Improve the quality and quantity of interpretation in Scotland**
- **Promote the co-ordination of interpretation at local and strategic level**
- **Share resources, expertise and experience to avoid duplicating effort**



Parappa the Rapper - © Sony Computer Entertainment Europe

Information technology *noun.* Technology that deals with the storage, processing and dissemination of information.

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Pandora's box

The Musician's Union once had a bumper sticker that said 'Keep Music Live', and I feel much the same way about interpretation. I'm old-fashioned enough to believe that many people spend too much time in front of a flickering screen; nor do they go to museums or exhibitions to watch TV or play computer games. However, putting my scepticism aside, high tech media can be very effective tools for delivering a message.

This edition contains a Pandora's box of high-tech interpretive goodies. The pioneering work of the Scottish Seabird Centre is a prime example. Using remote video cameras on islands in the Forth of Firth they are able to show visitors daily events within seabird and seal colonies. As well as being totally absorbing, this demonstrates a very responsible attitude towards wildlife, allowing close-viewing without disturbance. Of course, the whole experience is made more rewarding when live interpreters interact with the visitors who are watching action on screen.

Stirling Castle is a good example of a visitor attraction using the latest digital audio-guides. While audio-tour hardware has become increasingly versatile and sophisticated, it is arguably the software that provides the greatest opportunity for creativity. Adding sound effects, dialogue and historical characters can really stimulate the imagination.

Certain themes keep recurring throughout this edition – these will quickly become evident, and demonstrate the real advantages and disadvantages of high-tech interpretation. Other new media we feature include animated films, interactive DVD and a virtual archaeological dig. However, for me the most exciting innovation is the 'virtual conductor' at the House of Music museum in Vienna. Haven't you always wanted to get up on a podium and conduct an orchestra? Play is a great medium for learning, and what could be more fun that bringing the Vienna Philharmonic to a terrific crescendo - and then cutting them dead!

Ian Darwin Edwards, Director of Public Programmes, The Royal Botanic Garden Edinburgh

Interpret Scotland is published twice a year and is distributed free on request. **If you would like to join the mailing list** please contact Sandra Phipps at Scottish Natural Heritage on 01738 444177 or email: **sandra.phipps@snh.gov.uk.**

Next edition

The next edition of the journal will take a look at 'Meaning and Motivation: Linking Psychology and Interpretation'.
Copy deadline is 1 July 2003

"Any sufficiently advanced technology is indistinguishable from magic."
Arthur C. Clarke, writer and futurologist, (1917-)

brave new world?

In the right circumstances, high tech interpretation can be extremely effective.

Information and Communication Technology (ICT) and interpretation are potentially natural partners. They are both concerned with *communication*. This partnership can be made to work to our advantage, or it can become a costly entanglement of unreliable equipment and high tech 'gloss'.

ICT media encompass a range of digital platforms, including multi-media, digital audio, digital video, and the Internet. This article introduces some key issues to consider if you are thinking about using this new technology for interpretation.

Don't be cool, be smart

The initial danger of using new technology is that it seduces us into the "What Would Be Cool to Do?" paradigm. In this paradigm, coined by US interpreter Sam Ham, we begin by thinking about what's cool, and our minds are filled with visions of new gadgets and fab techie stuff. We think about what groovy sound effects, visuals, lighting and interactivity we can use to capture attention.

In this paradigm, the message comes second. It is made to conform to whatever the medium will allow, and in the worst case, the medium actually *precludes* communication. I've seen too many web sites that look good, for example, but take too long to navigate or download.

But there's a better way. Sam's alternative is the "What Would Be Smart to Do?" paradigm, which begins with the design of the message. Here, interpretive planning enables us to identify what messages we want to communicate first, before considering what media to use.

When the conceptual design of the message has been worked through, *then* we can think about media, materials and artistic design. Appearance does matter, but it matters most once a strong, consistent and meaningful message has been developed.

So why use new technology?

Once your message has been designed, why might you then decide to use ICT to deliver it? There are many good reasons[1]:

- Well-designed high-tech displays can be great fun, and do attract attention.
- Computer technology can provide your visitors with a flexible, non-linear platform that allows **them** to chose what interests them and how far to follow an individual story.
- The same digitised content can be carried by different media – like a web site, computer interactives and wireless PCs – and be linked with collections and curatorial databases.
- Computer technology can provide a 'virtual' platform for visitors to use at home or in school, or for a Virtual Reality tour of a sensitive or inaccessible site.
- Computer technology enables you to digitally manipulate images to show how something might have looked, how it worked or how it was made.
- Computer technology can be highly interactive and creative, with the potential only limited by your imagination (and budget).
- Computer hardware can keep track of visitors' preferences, thereby automatically providing you with evaluation data.
- Computer technology has good flexibility, with different content delivered for different audiences from the same piece of equipment.

This is a strong list of plusses, but there are potential drawbacks too:

- The hardware, programming and content can all be expensive.
- Computer technology dates quickly, and something brand new can be yesterday's news in no time.
- Computer technology can get in the way of experiencing the 'real thing'.
- Computer technology can be expensive to maintain, and when (not if!) it breaks down you can be left with no back-up and disappointed users.
- Computer technology can end up excluding people who are not comfortable using it.
- Specialist suppliers can go out of business, leaving you with a bespoke system that cannot be serviced or upgraded.
- The use of new technology can end up in the hands of technology experts, who end up driving the process instead of the interpretation manager.
- Additional security may be needed to protect from theft and prevent computer viruses and 'hacking'.

The cost of new technology[2]

The following budget ranges are a guideline for the use of multi-media (Lord & Lord, 2002, adapted from $ equivalent):

- Exhibitions with intensive use of multimedia £2,520 m2
- Exhibitions with moderate use of multimedia £1,800 m2
- Exhibitions with occasional use of multimedia £1,000 m2

Do also bear in mind that one or two well-designed and properly resourced ICT displays have more impact than a dozen poor productions.

Summary

Digital technology is an exciting and fast developing medium. But to get the most from it, let your decisions be guided by an interpretive plan that puts the message first.

David Masters, Editor. Tel 0121 441 1198

[1] Further advice on the specific pros and cons of audio and multi-media technology is given on pages 5 and 6.

[2] See Manual of Museum Exhibitions, Lord & Lord, 2002

"Where a new ENIAC calculator is equipped with 18,000 vacuum tubes and weighs 30 tons, computers in the future may have only 1,000 vacuum tubes and weigh 1.5 tons"
Popular Mechanics, March 1949

on yon bonnie banks

At the Loch Lomond and The Trossachs National Park Gateway Centre in Balloch, we have made extensive use of Information and Communication Technology in our interpretation.

Our brand new facilities include:

- A flat screen video wall showing an introductory film about the National Park.
- Computer touchscreens with interactive games about the wildlife, habitats and geology of the National Park.
- A version of the 'Who Wants to be a Millionaire?' game about managing the National Park.
- Listening posts and DVD-driven video monitors about the cultural and artistic significance of the National Park's landscape.
- An 'international email station' for visitors to send messages around the world and explore our web site.
- An innovative visitor information system called 'Vguide' which is relayed through several video monitors.

Is all this technology the panacea for all our ills, or does it present the same old problems wrapped up in another guise? The first few months of operation have identified a number of lessons to be learned in its use:

Fit the Technology to the Building One of the main issues is the relationship between the ICT and the building. The plasma screen video wall is a good example here. The concept of an introductory video is good, provoking attention when the visitor enters the building. In practice the effect is reduced because the wall is at 90 degrees to the entrance; the retail shelves restrict the viewing area; and bright sunlight reduces the image quality.

Links and Labels Interpretation is an holistic concept, and there have to be clear links between the technology and the other media. In the "Who Wants To Manage A National Park?" game, there are no clear labels or headers to link the interactive with the associated graphics on the surrounding walls.

Make it User Friendly "Who Wants to be a Millionaire?" is very good here. Visitors already understand how to play the game, therefore spend more time understanding the interpretative message than learning how to use the equipment.

Visitor Flows Individual touch screens are not ideal for dealing with large volumes of people. They are very much for personal use or family groups. So you must be certain that you have sufficient provision to cater for peak demands, or use other methods to cope with this. At the Gateway the outdoor promontory is used as a means of shedding visitor load at peak periods.

Out of Order! How often do we see this at visitor centres? It demonstrates a lack of understanding about the reliability of ICT systems. ICT must be available 365 days a year, and have an equipment life of five-ten years, which means all the hardware and software must be capable of delivering to that specification. You need software and hardware engineers who can support the systems for the life of the project. When the defect liability period is over, who picks up the tab?

Technical Problems All designers will test systems, but there is nothing like a real visitor to test every conceivable permutation in a multimedia system, and to test the hardware to destruction. A pre-opening evaluation period is vital if you are to have confidence in the reliability of your equipment, and to make sure that you know all the details regarding the operations of your systems, including the supporting technical documentation.

Data Collection ICT is great for collecting evaluation information. We can analyse the numerous logs that are collected by our web routing software to tell us how many visitors are using the web access and sending emails.

What Now? Having got it all working, and undertaken an evaluation exercise, we can address the problem areas and put them right. But in order to encourage repeat visits we need to be innovative and use the versatility of our ICT to develop new methods of use. For instance, using the video wall to show other areas of the National Park in real time, and using the Vguide information system to link with other Visitor Centres within the Park.

Summary Our ICT displays have had their share of teething problems, but are providing a good interpretive experience for our visitors. What is the secret to using ICT? Well, a good interpretive plan that puts the message first is paramount, and the client and designers must have a clear and mutual understanding of what the technology can do, how it can be modified, and the ongoing support required.

Bob Layden, National Park Gateway Centre Manager.
Tel 01389 722180

"I do not fear computers. I fear lack of them."
Issac Asimov, science fiction writer, (1920 – 1992)

imagineers at work

creative audio and visual technology

Digital audio puts the visitor in control.

Look and listen

Imagine you're standing on the battlements of Stirling Castle, looking east towards Abbey Craig. How else can you bring to vivid life in your imagination the momentous battle there 800 years before when William Wallace led his countrymen to victory over the English? Not by that boring old panel at your knees! Or, if you wish a different mood – perhaps birdsong, the snipping of shears and the clicking of bowls in the royal garden – that's no problem either. Audio guides add that magical ingredient - atmosphere.

The new digital audio guides enable you to control what you listen to, and when. If you press no. 14, you'll be offered a sound-bite on how the Queen's Presence Chamber was used. If you wish to hear more about the room or its elite occupants, press the green button; if you don't, simply move on. This technology puts the visitor in control.

But, audio guides will only work if they are first and foremost a *visual* experience. The visitor has come to see your site or exhibit; audio is the supporting cast. So always ensure that the visitor knows where they are and what they are looking at. Encourage them to engage visually before adding the magical audio ingredient.

Audio tour pros

- Engages the visitor with what they've come to see.
- Uses two senses (hearing and sight) at the same time.
- Can help with visitor flow and direction.
- Infinitely more captivating than panels.
- Virtually unobtrusive – unlike panels.
- Facilitates foreign language provision – unlike panels.
- Can address intellectual access.
- Can provide access for some physical disabilities (e.g. visually impaired).
- Can provide separate provision for children.
- Generates income – possibly/eventually.

Audio tour cons

- Does not provide supporting visual aids (e.g. portraits/reconstruction drawings).
- Not easy for the visitor to interact with others in their party.
- Not cheap by any means.
- Not easy – or cheap – to update.
- Mostly available only at sites with large visitor numbers.

Chris Tabraham, Historic Scotland.
Tel 0131 668 8600

Weaving digital magic

How can you tell the complex story of Scotland's forests to a family audience? How can you cram 10,000 years of woodland history into 5 minutes? How can you add humour without losing a serious message? Film and animation are providing Edinburgh's Royal Botanic Garden with the solution.

We first used animation in 1997 for a short film on the story of the Himalayan Weeping Cypress, and again in 2000 for the *Flora Celtica* exhibition. When the Millennium Forest for Scotland commissioned the *Return of the Natives* exhibition, the result was a superb short animated film that gave a fresh perspective on Scotland's woodland story.

This experience convinced us of the almost limitless potential of animation for interpretation. There are no boundaries, so it is possible to let your imagination run free. You can fly up in the sky or tunnel underground, go back in time or into the future, make animals talk and trees walk...

Many traditional storytellers admit that they see stories visually rather than learn them as narrative, a secret that enables them to hear a story only once and incorporate it into their memory. Children learn to understand and appreciate the world through stories, and we all love a good tale or cartoon.

Plantweave, the RBGE's major exhibition for 2002, was about basket making, and one challenge was to give craftspeople their own voice. Research revealed a range of views on issues from the importance of keeping old skills alive to the need to manage raw materials sustainably. We decided to adopt a video diary approach, and commissioned short films about some of Scotland's superb basket weavers.

The resulting video diaries formed a significant part of the exhibition, with longer versions available as a DVD catalogue[1]. The beauty of the DVD is its versatility. As well as giving the makers a voice, it allows us to explore the baskets in a novel way. You can see both outside and inside, close-up and distant, even turn them upside down. The downside, of course, is that not everybody has a DVD player. However, judging from the number on sale at Christmas, this won't last for long!

Ian Darwin Edwards, Royal Botanic Garden Edinburgh.
Tel 0131 248 2979

[1] Copies available from Alison Torrie, Tel 0131 248 2819; £10 including p&p.

"I can remember the exact instant when I realised that a large part of my life from then on was going to be spent finding mistakes in my own programmes"
Maurice Wilks discovers de-bugging, 1949

working with multimedia

Interpretive multimedia installations can range from a single interactive touch-screen kiosk to a totally integrated information environment with technology at its core. But what are the advantages and pitfalls of using interactive multimedia as part of your interpretive programme?

Advantages

- Multimedia allows an object to be presented within a much wider **context** – beyond chronology, function and so on – than is possible with traditional display material.
- Well-designed multimedia encourages **learning**. It involves and focuses the user, resulting in greater attention and better retention of information.
- Video footage and animated material demonstrate **actions and processes** far more expressively than static diagrams can.
- Database-driven multimedia can allow **access** to a whole museum archive, rather than that portion of it on display. And it can dynamically reflect a **changing** archive.
- 3D representations allow the user **unrestricted access** to manipulate and examine rare and fragile artefacts in detail, while virtual reconstructions, simulations and fly-throughs can bring historic sites and objects to life, or allow the user access to closed areas.
- Digital multimedia content can be repurposed for use on websites and retail CD-ROMS, producing **revenue** and creating a **wider audience** for the material.

Pitfalls

- Development and hardware **costs** can be high.
- Once installation is complete, **everyday operation** will invariably fall to museum or gallery staff, who may not have relevant prior experience.
- Underspecified hardware can make the **user experience** painfully slow, while poorly designed, difficult to navigate content can lead to user indifference.
- Depending on an application's design, **visitor flow** problems can arise, with users monopolising kiosks for long periods of time.
- Multimedia kiosks can often attract **noisy** groups, who can distract from an otherwise calm environment. Inappropriate use of sound within an application can also be intrusive.
- Both content and hardware are likely to require on-going **maintenance**, while **hardware malfunction** will render the system useless until an engineer can call or a replacement unit be located.

George Neill, Moriarti Design & Marketing. Tel 0131 620 8040

Keep on running...

After years of planning and much heartache in the realisation, your new multimedia visitor centre opens with a flourish of media interest. Your work is done.

...or is it? Your ICT equipment *will* require maintenance and it *will* break down from time to time. It needs to be fixed **as soon as it goes wrong**, unless you want to have complaining visitors and reduced entry fees on your hands.

The National Trust for Scotland has interpretive audio-visual and multimedia equipment at a third of its properties. A significant budget is allocated each year to maintaining this equipment. Here are some lessons we have learned:

- When preparing your initial budget, remember to factor in year on year expenditure on maintenance and repair. Work out what you expect to spend, then double it!
- Check the warranty terms with the supplier. Most equipment comes with a one year warranty, (providing it hasn't been tampered with), which can be extended at a cost.
- Arrange a service agreement for all equipment, including a a number of call outs for emergencies during a year, and a help-line for simple problems. Some providers will cover both AV and multi-media, but it can be cheaper to arrange separate cover for the latter.
- If you only have a few pieces of equipment, a service agreement can be item by item with the original supplier. Alternatively, organisations with many interpretive centres may prefer an inclusive agreement for all sites. This needs to be with a tried and trusted provider so no hidden costs are sprung on you, and you can be sure repairs will be dealt with efficiently.
- Site managers need to know who to contact in case of a breakdown – decide if it will be you or the maintenance company.
- Always keep a supply of spare parts, e.g. bulbs for projectors.

A little planning and forethought like this will keep your equipment running and your visitors happy.

Caroline Tempest, The National Trust for Scotland.
Tel 0131 243 9359

"It would appear we have reached the limits of what it is possible to achieve with computer technology, although one should be careful with such statements as they tend to sound pretty silly in 5 years."
John Von Neumann, c. 1949

game on goes online

© Nintendo Co. Ltd., 1980

Parappa the Rapper - © Sony Computer Entertainment Europe

On 18 October 2002, *Game On* opened at the Royal Museum in Edinburgh. It was the first major exhibition in Scotland to explore the fascinating past and diverse future of videogames. From the first ever computer game, Spacewar!, made in 1962, up to the latest not-yet-released products, *Game On* looked at the people and technologies that have revolutionised games and how we play them. In the 15 weeks it was open it attracted 46,000 visitors.

The exhibition revealed how some of the most popular games such as Grand Theft Auto III, Pokémon, The Sims and Final Fantasy were created. Original artwork, concept design and prototypes from developers were on display. *Game On* also included dedicated areas looking at sound, cinema and the games culture in Europe, USA and Japan.

With over 120 playable games throughout the exhibition, visitors were allowed to experience the best of new and retro games from around the world on vintage arcade cabinets, classic consoles, PS2, Xbox and GameCube.

Using IT to interpret and educate

To complement the exhibition an education programme was designed to encourage schools to use computer games as a stimulus for learning in key areas across the curriculum. This programme consisted of workshops, a conference, teacher training, an online resource and video.

The aims and objectives of the education programme were to:

- Explore the innovative use of computer games as a stimulus for learning.
- Encourage a critical understanding of the politics and culture of computer games.
- Inspire creativity through digital media and the development of skills across the curriculum.
- Encourage pupils to explore the creative technologies involved in games manufacture.
- Leave an ongoing legacy of knowledge and resources for schools.
- Provide links between the computer games industry and the education sector.

The online resource was funded by NESTA, the National Endowment for Science, Technology and the Arts. The resource has been developed to support the 5-14 National Guidelines at Levels C, D and E. In doing so it provides mainstream education with a mechanism for harnessing the learning power of computer games.

The resource allows pupils to design their own computer game, including creating characters, developing puzzles and composing music. This process enhances the pupils understanding of games and how they are constructed. It also encourages the development of skills in the use of new technologies and inspires creativity.

In order to ensure that the online resource would meet the needs of its users, extensive evaluation was carried out throughout its development. As the resource was created each new element was tested in six Primary Schools and with the National Museums of Scotland Junior Board. The Junior Board is a group of ten pupils aged 10 - 14 from across Scotland. They evaluated everything from the five characters that appear in the on-line resource to the games and worksheets.

The resulting resource provides users with mechanisms to:

- Explore existing computer games through deconstructing their content and form.
- Examine the processes involved in producing a new game.
- Design and develop their own game.
- Explore the use of ICT as a tool for realising pupils ideas.

The online resource has added depth of knowledge for pupils visiting the exhibition. It enables them to understand the processes behind the development of a computer game. It also helps them express their own ideas through the use of new technologies. Importantly the resource also stands alone and can be used by schools not visiting the exhibition. This allows the National Museums of Scotland to fulfil its national remit and extends the 'virtual' life of the exhibition.

It is also hoped that through exploring this resource pupils may as a result be inspired in their career choice and pursue a job in the games industry. The online resource is accessible through the National Museums of Scotland web site at **www.nms.ac.uk/gameon**. A supporting video can also be ordered free of charge.

Annette MacTavish, National Museums of Scotland.
Tel 0131 247 4046

[1] The exhibition was organised by the Barbican Gallery, London, in collaboration with the National Museums of Scotland, and was sponsored by Shepherd and Wedderburn.

"If computers get too powerful, we can organise them into a committee – that will do them in"
Anon.


© Cavan Convery

Creative close-ups: nature through a digital lens

research review

Museums' interpretation

Over the past four months the Scottish Museums Council has conducted a sample survey of its members to examine the state of their interpretation.

Museums across Perthshire, Dumfries and Galloway, and Highland region were questioned about their experience of interpretive planning, interpretive standards, evaluation, funding and barriers to change.

The results show there is considerable scope for improvement:

- Only 68% understand the term interpretation at least in part, leaving 32% who do not.
- Only 8% have an Interpretive Strategy and few plan for their interpretation beyond display themes.
- Interpretation is ranked as high priority by 32% of museums; 20% rank it as low priority.
- Although 72% are aiming for standards, only 48% are actually implementing them. Standards relating to physical access are more widely known than standards in intellectual access.
- Local authority staff have better access to support material than those in independent museums. Few are actively using reference material when developing interpretive provision.
- Evaluation methods are too imprecise to prompt change. Few museums really understood their visitors or evaluate their interpretation.
- There is little sustained input of funds into interpretation. Exhibition budgets are small and only 52% have sought funding from external sources.
- The main barriers to change are lack of time and resources, attitudes of staff or governing bodies, and lack of technical skill. Lack of skill in interpretive planning and production is a further concern.

SMC will now explore practical support and advice solutions to help bring about change. **Further details are available from Emma Morehouse, Museums Officer with SMC, Tel 0131 476 8594.**

Creative Corner


© Cavan Convery

A cold, wet wood in winter is the last place you would think of taking a school group on a photography workshop. But on a recent trip with Dalwhinnie Primary School, a tree covered in tiny mosses and fungi yielded so many colourful images that the kids quickly forgot the miserable conditions. Armed with magnifying glasses, they investigated an alder wood, then, using digital cameras capable of focussing on objects close to the lens, they took stunning close-ups of a normally unseen world.

I design new media workshops that engage young people with the environment. Some of the techniques I have developed, such as rocket-borne video cameras, are technically quite advanced. However, there are some processes, such as utilising the macro function on digital cameras, which allow novices to achieve amazing results.

Using a desktop scanner as a camera is another simple technique that produces exciting images of tiny worlds. Material collected from a field trip can be placed on the scanner, scanned at a high resolution, then scaled up and printed out. This works well with small items, particularly plant material. Objects such as cones and fruit can be cut in half and faced down on the glass to create beautiful cross-sections.

Some of my more advanced workshops use tiny security cameras. Combined with a portable video monitor, they are ideal for investigating inaccessible places such as burrows and nests. I've also attached these small cameras to helium balloons, kites and even model rockets. The resulting aerial views provide a great way for kids to relate to and chart a particular site. This approach worked well for SNH's *Freeflow* project when we sent a rocket high above Loch Lomond. Suddenly the shape of the landscape that we had studied on our maps was revealed.

Using new technologies to investigate the environment works by literally providing a new perspective on the familiar, encouraging children to look again. The trick is to ensure the media isn't so complex or novel that it becomes a distraction.

Fortunately, computers, scanners and digital cameras have become increasingly available in schools and youth groups, and many children and young people are familiar with them. Lack of technical support, however, is an issue that needs to be addressed if the children are to exploit the full potential of this exciting new approach. And get the most out of those wet winter workshops!

Cavan Convery is an artist and freelance designer and illustrator, www.artsci.co.uk/cavan/

"Technology is dominated by two types of people: those who understand what they do not manage, and those who manage what they don't understand."
Putt's Law

letters

Mind your Language

Annwyl Olygydd/Dear Editor

Caroline Tempest of the National Trust for Scotland (see 'Mind Your Language', *Interpret Scotland*, spring 2002) poses the question 'Is Gaelic interpretation an essential service to the Gaelic speaking community . . .?' but not the equally absurd question 'Is English interpretation an essential service to the English-speaking community?' It seems the rights of the English-speaking community are taken for granted, but not those of the Gaelic-speaking community.

Angus Peter Campbell, author of *The Blood is Strong* (1988), a booklet published to accompany the Grampian Television three-part documentary on the Gaelic Scot, was surely correct to assert that, 'A language is not just a means of communication: it is a vehicle for an entire world view, and it encapsulates the definition of culture. A language that dies takes with it a way of seeing, and a way of thinking.'

But, clearly, this is not a view shared by the NTS, who are only prepared, or so it seems, 'to provide *translated* interpretation' thereby ensuring that the English speaker's 'way of seeing and thinking' is maintained at the expense of a Gaelic world view. That language may be displayed, but its speakers are denied a voice. An English language world view rules, even in those places where 'The National Trust for Scotland . . . *attempts* to provide *translated* interpretation at properties where there is *a perceived need* for it' [the highlighting is mine].

On the question of policies relating to the use of languages other than English (of course!) in interpretation, the author is under the erroneous impression that the situation in Wales '. . . is much more clear-cut, with full Welsh translations required by law'. We, too, more often than not are force-fed translated Anglocentric texts but 'full Welsh translations required by law' are a far cry from reality. To quote the Welsh Language Board: 'What does the law say? In 1993, the Welsh Language Act was passed, which says that public bodies [but not those in the private sector] must develop ways to treat the Welsh and English languages on an equal basis in their services.' To this end, every public body is required to publish a Welsh Language Scheme.

So how, for example, does the Pembrokeshire Coast National Park Authority ensure that the Welsh and English languages are treated on an **equal** basis in their interpretive publications? To quote their *Welsh Language Scheme*: 'Saleable interpretive publications will all have bilingual covers and will make reference to the Welsh Language wherever relevant . . .' To suggest that Welsh speakers, like myself, who live their lives through the medium of Welsh should be satisfied with 'bilingual covers' is deeply offensive. And I invite the English-speaking community to ponder the relevance (or irrelevance) of their language by substituting 'English' for 'Welsh' in the above quotation.

Finally, perhaps Caroline could be persuaded to write to the National Trust in Wales and impress upon them the importance of 'good quality translation'. To coincide with last year's National Eisteddfod, held on the site of the disused St David's airfield, the Trust published a bilingual leaflet entitled *Yr [sic] Rhostiroedd Maes Awyr Tyddewi / The St. David's Airfield Heaths*. The translated Welsh-language text is littered with typographical, spelling and syntactical errors, whereas the English-language text is error free. Sadly, the leaflet in question is not an isolated case.

Until interpreters eschew the tokenism typified by 'bilingual covers' (*A' Foillseachadh na h-Alb*a beware!) and 'a [word] of welcome and an introductory sentence or two' in the vernacular for the 'natives'; abandon translations in favour of original texts; and grant indigenous language communities the same rights as the English-speaking community, Gaelic speakers in Scotland and Welsh speakers in Wales will remain second-class citizens in their own countries.

Yn gywir / Yours truly,

Dr Dyfed Elis-Gruffydd
Ysgol Daearyddiaeth a Gwyddor Amgylcheddol / School of Geography and Environmental Science
Coleg y Drindod / Trinity College
Caerfyrddin / Carmarthen
Cymru / Wales

The author replies

Dear Editor

Whilst I thank Dr Elis-Gruffydd for his interest in my article, I fear that its general point may have been mis-interpreted and unfortunately my quotations have been taken out of context, changing their meaning. My article raised issues about catering for a variety of non-English speaking audiences, not just Gaelic speakers, and raised the broad point about improving standards in translation. I understand Dr Elis-Gruffydd's pertinent point regarding interpreting a culture from a potentially differing world view, and I'm sure he shares with me a desire to see more lively and informative discussion on this subject.

Yours sincerely

Caroline Tempest
The National Trust for Scotland

"The only way to discover the limits of the possible is to go beyond them into the impossible"
Arthur C. Clarke, writer and futurologist, (1917-)

what's up elsewhere

© Ename

VirtualArchaeology

The Ename Center for Public Archaeology and Heritage Presentation is an international study and research center in Oudenaarde, Belgium. A non-profit organisation, it is dedicated to developing techniques of heritage presentation, education and public outreach.

The Ename Center grew out of the experience gained by the Ename 974 Project, a programme of archaeological excavation, architectural restoration and historical research at an important medieval site. A key challenge in interpreting archaeology is to make complex and poorly preserved remains comprehensible to the general public. However impressive or picturesque they may be, archaeological remains are rarely recognisable as specific structures (like a house or church), and can therefore fail to capture the fascination of visitors.

Ename contains a labyrinth of the partially preserved remains of the foundations of a medieval Benedictine abbey. Our solution was to offer visitors a picture of ancient life at the site through Virtual Reality. A prototype system, called *TimeScope 1*, opened in September 1997. This superimposes a 3-D model of the abbey over a real-time video of the exposed foundations, allowing visitors to see the church as it appeared in its original state. An accompanying multimedia presentation offers additional interpretation about the site and the people who lived there.

A second installation opened in 1999, interpreting the nearby Saint Laurentius Church, which is closed to the public. *TimeScope 2* permits visitors to monitor the progress of the excavations and restoration work. An accompanying multimedia presentation highlights the historical importance of the church and explains the rationale and stages of the restoration project. The VR reconstructions, multimedia presentation and excavations are also accessible on the Internet.

The latest development opened in September 2002. *TimeScope 3* allows visitors to create their own personalised explorations of the restored church through clickable 360° virtual panoramas. A large database of historical and archaeological information has been embedded in "hot spots" in these panoramas, allowing the visitor to discover more about the archaeological features and historical subjects of greatest personal interest.

Details at www.enamecenter.org or from Neil Silberman at neil.silberman@enamecenter.org

Conducting **the** Vienna Philharmonic

Vienna is the world's capital of classical music, and its *House of Music Vienna* museum offers some of the most exciting new media interpretation in Europe. The Virtual Conductor is one of their most popular innovations, allowing visitors to conduct the Vienna Philharmonic playing a range of popular melodies. This is how it works:

Visitors stand in front of a large video projection of the orchestra in the Musikverein theatre. They pick up the baton, choose a piece and start conducting. The orchestra follows their movements precisely - the larger the gestures, the louder the orchestra plays. If visitors conduct towards certain instruments, they play louder than the rest. And the players follow tempo too - the faster the conducting, the faster they play.

The specially modified baton sends infrared signals to a receiver below the screen that relays the baton position to a computer. Here, a special gesture-recognition algorithm calculates the tempo, size and direction of the conducting gestures. A second computer then uses this data to control the playback of the digitised orchestra. To raise instrument voices, audio channels are processed in parallel and mixed down in real time.

The system uses Apple computers, and more than 20 gigabytes (or 500 hours) of audio and video material were recorded at the highest digital studio quality. The result is the world's first fully conductable, realistic "personal orchestra".

The museum also provides a range of other intriguing high tech interpretation, including the **Instrumentarium**, where visitors discover larger-than-life instruments, the **Polyphonium**, which contains a collection of the sounds from around the world, the **Futuresphere**, which explores the future of music, the mysterious **Brain Opera**, developed by the Massachusetts Institute of Technology, and the **Mind Forest**, which visitors play through voice, movement and touch to create a unique set of music, tones and moods.

Phew! The only way to really understand all this stuff is to visit the museum. **For information please contact Katharina Springer on (+) 431 516 4840, pr@hdm.at, www.hdm.at**

Advice on **new technology** in museums and galleries

A government sponsored study into the use of technology in the museums and galleries sector has been published. The report contains advisory guidelines into matters such as how to overcome an ICT skills gap, project management, and writing and designing content for the web. **The report is available at www.peoplesnetwork.gov.uk/content/itcfguidelines.asp**

news & events

Award winning Interpret Scotland!

Interpret Scotland has been awarded an Interpret Britain Commendation Award for *'an excellent publication which takes forward the interpretation debate and showcases good practice'*. The judges noted a number of shortcomings that precluded a full award, all of which we had brought to their attention and were planning to address (e.g. a large print version is now available on our web site: **www.interpretscotland.org.uk**).

Knockan Crag interpretation also gets an award

SNH's geological interpretation at Knockan Crag in Assynt has also been awarded an Interpret Britain Commendation Award. Knockan is famous amongst geologists as the place which inspired some of the first scientific theories about the geological history of the Earth. You can explore the interpretation as a case study on SNH's guidance notes about interpretation at **www.snh.org.uk** Other Interpret Britain awards were given to a range of interpretive projects throughout the UK, with a special category for 'interpretation and volunteers'. Visit the AHI website **www.heritage-interpretation.org.uk** for details.

Scotland leads the world in sustainable tourism

The Scottish Tourist Guides Association hosted the 10th Convention of the World Federation of Tourist Guides Associations at Dunblane in January. More than 200 professional guides from around the world attended the Convention, *Sustainable Tourism the Guide's Role*. Speakers included Sandy Dear from Scotland and the Environment and Geoffrey Lipman from Green Globe, as well as speakers from several Interpret Scotland member organisations. STGA is regarded as a world leader in the training of tourist guides and is currently developing new materials with the University of Edinburgh and supported by Scottish Natural Heritage to improve the interpretation of Scotland's natural assets. **For details contact Info@stga.co.uk or visit www.stga.co.uk**

Disability and access toolkit

Resource, the government's support agency for museums and galleries in England, has published a 'do-it-yourself' toolkit to help museums comply with the Disability Discrimination Act. The toolkit, along with Resource's Disability Action Plan, is available at **www.resource.gov.uk** It identifies 13 areas that 'accessible museums' (and other heritage attractions) should be addressing, including physical and intellectual access, policy, training, audit and consulting people with a disability

Events

Tackling Vandalism through Interpretation
Organised by Interpret Scotland
29 April, Drumpellier Country Park
Leader: Doug Gleave

Planning, Design, Production and Evaluation of Interpretive Media
John Veverka and Plas Tan y Bwlch
7-9 May 2003
Contact plas@eryri-npa.gov.uk

Visitor Centres and Visitor Attractions - ground breaking architecture but where does Interpretation fit in?
Organised by Interpret Scotland
30 September/1 October, Battleby Centre
Leaders: Ron Zimmerman and Michael Gross

Publications

Interpreting Historic House Museums
Edited by Jessica Foy Donnelly (2002)
Altmira press
ISBN 0 7591 0250 3, 272pp, $24.95/ £tbc
This thoroughly comprehensive book explores all the key issues involved in interpreting historic house museums. Specific topics include interpretive planning, interpreting the whole house, living history and effective guides, and the interpretive considerations of access, gender, the landscape context, and interior furnishings. Although written for an American audience, it deals with both the big picture and the detail of historic house interpretation in a way that is highly relevant to the UK. A series of interesting case studies and practical guidelines add to the value of this thoughtful and very informative book.

watching wildlife

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The Scottish Seabird Centre (SSC) is a custom-built visitor attraction at North Berwick Harbour. The Centre opened in May 2000, and its principal attractions are four wildlife cameras located on nearby islands (Bass Rock, Fidra and the Isle of May).

Visitors control the cameras to watch amazing live pictures of birds and seals without any disturbance - an excellent example of sustainable tourism. A huge variety of wildlife can be seen at different times of the year, including seal pups (winter), gannets returning to nest sites (early spring) and seabirds (puffins, gannets etc) throughout spring, summer and autumn.

Making it work

A wide variety of technical and logistic issues had to be dealt with in developing the video displays.

The most efficient way to **transport** the equipment out to the islands was by helicopter: it only took a few minutes and could drop heavy equipment exactly where required.

The **camera positions** on the islands were chosen for various reasons:

- They had to give both close up and panoramic views of the gannetry, seabird cliffs, seal breeding beach etc, and also views of the surrounding landscape so visitors could orient themselves to the island's location.
- They had to be near a **power supply** (in the case of the Bass Rock and the Isle of May - generators and solar panels in the lighthouse buildings).
- Microwave dishes have to have a clear line of sight to the dish on the roof of the SSC.

In the case of getting a **signal** to and from the islands, a microwave link was chosen as the preferred method. A dish on the island receives and sends signals to a dish on the SSC roof (similar to mobile phone technology).

The equipment

The cameras used on the Bass and Fidra were broadcast quality, but did require quite a lot of maintenance. After the Bass cameras were installed, new technology more suitable to this type of use became available. In partnership with Scottish Natural Heritage (SNH), a 'Big Brother' camera (so called as they are used in the TV show) was installed on the Isle of May, and has been so successful that it is intended to replace all the cameras with this technology. These can focus to a distance of less than 1 metre and have a 20x zoom lens. They are waterproof and can withstand high winds (over 100 mph) and salt spray. Most importantly, they also have a washer-wiper on the lens to deal with the inevitable 'direct hits' from our feathered friends!

Interaction and interpretation

The public see the live images on large screens, and move the cameras by using joysticks mounted on a plinth situated in front of the display. The cameras are auto focus, which makes them simple for the visitor to use. Visitors get the most from the interactive experience by having a live interpreter to show them how to use the camera and to interpret the images on the screens.

The result

The Centre has become established as a major tourism success story. Specific achievements include:

- Over 500,000 visits since opening.
- A long list of awards (including 5 stars from VisitScotland and the 2002 Thistle Award for Tourism and The Environment).
- More than 5,000 members.
- Over 10,000 children have taken part in the formal education programme.
- Very high visitor satisfaction levels (85%).
- A large number of repeat visits (29%).
- Job creation (56 FTE directly and indirectly).
- A major boost to the local economy (over £1 million per annum).

The Scottish Seabird Centre is a tourism success story that uses the latest technology and effective interpretation to create a unique and memorable visitor experience. The Centre is continuing to build on its initial successes, and recently announced a partnership project with the The National Trust for Scotland and SNH which aims to establish a live interactive satellite link between the Centre and St Kilda in the Western Isles.

Tom Brock & Gregg Corbett, The Scottish Seabird Centre, Tel: 01620 890202,

Guideline costs for CCTV hardware
'Big Brother' camera - £4,200 each
Microwave transmission system - £12,000+
Independent power source - £6,000+
Control panel and plasma screen - £9,000+
A simple system, using mains power and cable transmission over 2km, can cost £20,000