ROYAL ACADEMY OF DANCE | THE BENESH INSTITUTE

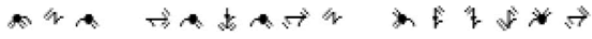
Introducing the Benesh Notation Editor

Congress 1999 saw the pre-launch of the Benesh Notation Editor computer software, arguably the most significant single advance affecting BMN since its launch in 1955.

Always the gadget king, Andrew had invested in a computer projector which meant we were able to demonstrate the software projected onto a huge screen. In the studio where many young dancers face the horrors of major examinations delegates faced banks of computer screens. More treckies than tutus - Beam me up Scotty!

After 5 years detailed and fascinating work in collaboration with Surrey University's computer wizards we were at last in a position to begin showing the fruits of our labours and to give delegates a change to 'play' this new computer game. It was a chance, too, for the Institute to pay tribute to the extraordinary work Adrian Grater had done in designing the specifications for the Editor and to illustrate the complexities that the Surrey University team, originally led by Nick Carter and latterly by Gillian Smith, had had to grapple with. For those of you who weren't able to be at Congress 1999 this report may give you some idea of the task they took on.

To begin with 4 types of signs were identified. Font characters for the notation's basic signs - simple shapes that can be combined, manipulated and qualified in various ways giving rise to extensive families of signs. Vector signs - signs of fixed shapes but of varying lengths (hairpins, legatos etc.). DIY freehand lines - an infinite variety of straight and curved linear figures and, finally, text.

Of these the largest group, and the one that took the most time to create, were the font characters. Only one font is required to produce all the letters of the alphabet and all the numerals and punctuation marks used in normal text documents using designs such as 'Times' or 'Aerial'. In the Benesh Editor 50 different fonts have been created and each font contains 250 characters. We could baffle MI5 with our secret Benesh code:  (The Benesh Editor in bnetmp02).

Adrian had to identify all possible signs, define their exact shape and size and express them in terms that Nick and Gillian could handle and then design user access to them.

First - identifying all possible signs - an unimaginably complex task. If we take a simple example, the basic signs including the oft forgotten 4th basic sign, the open dot. Each of these can have various other characters added to them; single contacts, double contacts, supports (supporting, supported), plus qualifications; flexion, the open dot, cross-outs, etc. Then there are replacement signs, all of which could, conceivably, have similar things added to them. But would the addition of all of these be legal or possible for each basic sign? Sign construction follows a fairly clear and obvious logic, but complications arise. For example, in usage an open dot with a contact sign added to it would be more likely to be read as a hand touching the back of the body – so this would give an 'illegal' sign in the hands and feet font. Other signs can also be logically constructed but physically improbable, if not impossible.

So, not only did Adrian have to identify all the possible signs, he also had to make sure that all were 'legal' and make sure illegal ones didn't enter the system to confuse the user.

Adrian then had to define their exact shape and size. Not as easy as one might think. It is amazing what variations there are between different people's scores and, depending on context, within the same person's score. Where there is a lot of information in a frame signs are often written smaller than at other times. Seldom used signs often seem to be written bigger than one would expect – subconsciously the notator is highlighting an oddity? Adrian even ended up deciding that it was necessary to produce two different sized body contact signs as signs written touching, or through, a stave line generally seem to be written bigger than those placed between the stave lines, something we do unconsciously in order to make sure that the sign carries the correct information.

Different types of curves had to be created because, for example, a support sign on its own can be bigger than one attached to a basic sign. A support sign attached to a basic sign, onto which another sign is also attached, needs to be a different shape and size if it, too, is to be legible. Hand written we make these adjustments automatically. The computer has to be told all sorts of things that we are unaware of knowing.

In defining a sign's shape and size, Adrian had to express it in terms that Nick and Gillian could work with, measuring signs in millimetres then magnifying them, often x10. He had to decide on line lengths and widths and exactly how big the gap needed to be inside open circles and exactly how different signs needed to abut to one another in magnification in order to give the best resolution at Benesh size.

The next task was to work out how the user was going to access the signs in as notator-friendly a way as possible. This has resulted in 22 different palettes. Adrian used as his model the pioneering work of Rhonda, Robyn and Arthur Ryman in designing the MacBenesh software that has been used so successfully in publishing single stave scores. But for him and the Surrey University team the complexities were multiplied many times over in designing and realising a program for multi-stave scores. It would take a book to describe them all.

So what are the advantages of putting our scores on computer?

The Editor program is designed to cope with all the complexities of multi-stave scores and has been produced specifically for professional notators. With it we will be able to produce print quality scores that can be edited at the touch of a mouse.

There are many features that will revolutionize score writing, not least the possibility of varying the distances between staves and inserting stage plans at will. We will also be able to print out individual roles, or just the corps de ballet, making it much easier to assimilate the relevant information when learning a piece and much quicker to check for details in rehearsals.

The initial time spent in transferring our hand-written scores onto computer will be amply rewarded in many ways. Using the Editor will enable us to input changes quickly and easily, save the changes as version 2, print out the updated version leaving the original unchanged. Thus both versions will be available and we will no longer have to cope with illegible amendments of obscure provenance. It will no longer be necessary to rewrite whole scores as they will be continually updated. It will also be possible to accurately trace the

development of a work over time, season after season, year by year, which will be useful for us and an invaluable resource for dance academics.

Storing, copying and managing our archives will be more secure. Our master scores will no longer be subject to light damage, beetle attack, or the other hazards that face paper documents.

Long distance communication on technical matters will become a truly viable proposition by e-mail. Access to scores around the world will be brought into the 21st century with transmission over the Internet and publication will become increasingly viable. These features will be particularly significant from the Institute's point of view as all the Academy's distance learning programmes come on line. The course materials and resources that we produce to service the Benesh modules in these programmes need to be in a form that can be easily transmitted internationally using the most modern technology available. It is essential that our materials are computer generated if we are to be able to do this effectively.

The Editor should also provide increased opportunities for employment as the Institute plans to offer dance companies computerisation of their scores as a service. BMN is truly entering the digital age with the BNE. As delegates discovered for themselves, there is nothing mysterious and difficult about using the program, it just takes a bit of training and some practice. One of the surprising spin-offs we discovered at Congress was how helpful it can be as a revision tool. Through the Editor you may even find that you rediscover useful theory that you had forgotten existed.

Liz Cunliffe

First published in Benesh News 1999