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# The Survival of Braille Is in The Balance

# Speech given by

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## Venue

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## 200 E. Wells Street at Jernigan Place

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Introduction

During the time I was working for SightSavers International in the 1980s, my own braille upbringing and the reality on the ground came into sharp conflict. On the one hand, I enjoyed a very brilliant braille education which taught me to read contracted braille not only in English but in other European languages. On the other hand, the children I met in rural Africa and India had lives before them which would never involve reading or writing; like their peers, they would either work in agriculture or not work at all. This internal conflict came to a head at a school for blind children in Gangtok, the capital of Sikkim in North India, where the best braille graduates of the school were teaching the younger children to copy braille text using hand frames; and I was told that the best of these young children would, in turn, teach the next generation. The closest parallel I could think of was the skills transfer for manuscript preparation and illumination in a Medieval monastery. Except for the few graduates of each cohort who became teachers of the next cohort, braille had no effect on life chances.

At the other end of the spectrum, a couple of years ago I visited the best - well, at any rate the most modern and expensive - rehabilitation centre for blind people in the world. In one room, people with residual vision were sitting at work stations with large screens, synthetic speech and refreshable braille displays, operating simultaneously. In the next room, those whose residual vision had deteriorated so much that they needed to learn braille, simply had sheets of manila paper: no synthetic speech, no braille displays and certainly no screens! It was as if to use synthetic speech simultaneously with a refreshable braille display would somehow constitute cheating; that learning braille ought to be difficult.

That, in essence, has been the baby boomer problem. We, a generation largely blinded from retinopathy of prematurity, went to specialist schools which had nurtured the braille tradition whose two major, interlinked concerns had been the standardisation of code and the need to minimise input for manual document-making and plate making. It is important not to under-estimate the salience of these two factors; after all, it was only in 1915 that the United States formally adopted braille as its tactile code; and the economics of braille production were always prohibitive. The two issues inevitably became inter-twined: production required contractions and standardisation of contractions was essential.

But even after the Second World War, text had already lost its information monopoly to broadcasting and in the 1960s the cassette tape recorder further eroded the braille educational monopoly. Then, in the late 1970s, the first computer-driven braille production systems were developed. I wrote an article at the time for the RNIB's New Beacon saying that computerised braille production would allow end users to choose between capitalised and uncapitalised, contracted and uncontracted braille. I might as well have been writing in Martian. The monopoly of publisher imposed, contracted, hard copy braille persisted well into this Century.

Paradigm Shifts

What has happened in the last 70 years is that we have not noticed the paradigm shifts in the environment in which we work. I will mention three only briefly, not because they are unimportant but because their implications largely lie outside the remit of this conference:

First, the rising proportion of blind people with additional disabilities which impede braille acquisition should lead us to ask whether uncontracted, rather than contracted braille, should be the default teaching method; this is a question for educators, not for coders, publishers, or even librarians.

Secondly, the ability of blind people to produce print text raises important questions about whether it is as important for children to learn to write braille as well as to read it. It is, of course, wrong to extrapolate a general principle from personal experience but except for CD labels I have not written braille since I left school and with the Pen Pal I've even stopped using it for labels. The essential problem here is acquisition of duplicate skills which takes time away from the acquisition of other skills, a subject to which I will briefly return.

Thirdly, the competition first from analogue broadcasting and then digital information means that we can no longer take it for granted that braille will be the default medium in education or later life; in fact, we know that it isn't; and we have to look at braille tuition in the context in almost all countries, certainly all the ICEB countries, of falling public sector expenditure on education and social services.

Survival Criteria

Now, having got all the bad news out of the way relatively quickly, I want to spend most of the rest of my presentation on the good news.

If braille is to survive as a viable medium during the next half Century, it seems to me that it has to meet four criteria:

* Low production costs
* Low access costs
* Low learning costs
* Effective marketing.

Low Production Costs.

Since the advent of computer driven braille production systems, the output cost of braille to the public sector or philanthropic supplier and the end user has fallen very little:

First, many production systems double up as sheltered workshops which confuse the mission of the publishing house, increasing the work force and production times.

Secondly, analogue methodology is applied to digital systems, not least manual proof reading required in plate production but less required in digital production where error correction is much easier and cheaper.

Thirdly, an extreme reluctance to create a market in braille which relates quality to price, with inflexible output standards which require one output format with no price flexibility. What this ultimately means is that braille publishers and library authorities have made a decision, whether they know it or not, to opt for small, high quality catalogues instead of larger, lower quality catalogues. They have also completely ignored the communal simultaneity of the reading experience; braille readers are expected to read their books months, or even years, after their sighted peers have moved on. Maybe I want a novel popped through a scanner overnight, embossed on cheap paper without proof reading, to be read once before I pass it on or throw it away. But, in any case, we need to recognise that timeliness is one of the components of quality.

And this brings me to another piece of controversy. Scandalously, it took more than two decades for UEB to be accepted. What UEB offers, in the context of a global explosion of digital text, not only on the diversified internet but also through massive book holdings such as Gutenberg, Amazon/Kindle, Apple and Google, is a one-to-one print and braille symbol correspondence which eliminates the need for complex tables of rules about the role of braille symbols in strings. And, having worked so hard for this, we are now faced with a self indulgent controversy over the apostrophe and the inner quote. I have read all the documentation on this subject and I have only two conclusions:

First, the assumption that braille readers are somehow less intelligent than print readers, who deal with this ambiguity is, frankly, insulting

Secondly, the 'war' over coding during the past two decades has absorbed a massive amount of time, energy and, yes, money, when what we need to be focused on is the survival of braille as a viable literary option.

We are now in an age where it should be possible to produce unimaginable quantities of automated braille on demand at near zero cost on a braille display and at the cost of paper if people, or library authorities, are prepared to pay for hard copy. But we do need a market which allows the end user to decide; the two choices of perfect, hard copy braille and perfect real audio on offer months or even years after sighted peer access simply do not offer customer choice; they impose a high unit cost system which is only of benefit to producer work forces.

Finally on production, many organisations of and for blind people see braille and modified print in competition when, in reality, looking at the market sizes, braille is a natural by-product of modified print production which can provide a healthy cross subsidy from the widely used to the narrowly used medium.

Low Access Costs

Low access cost is the area where the news is currently best because it does not involve the need for a culture change in a conservative sector.

At Braille 21 in Leipzig in 2011 I promised that RNIB would lead a global initiative to produce a refreshable braille display which would cut the market cost by 90%. I was told, by people with a vested interest in the status quo, and by some of my best friends, that I was mad. RNIB funded some initial research into the approximately 65 projects around the world promising cheaper braille displays; and when we had the results we formed a global consortium, known as the Transforming Braille Group (TBG) LLC[[1]](#endnote-1), to get a product from the drawing board to factory production. The TBG Membership is largely made up of ICEB Members from Australia, Canada, New Zealand, the UK and the USA with further support from France, Norway and SightSavers International. Between us we raised $1.5 million to complete the project which is in budget and on time.

Tomorrow you will see in a Poster Session the Orbit Reader which, hardware included, comes out at $2 American Dollars per pin, or $12 Dollars for a standard refreshable 6-dot braille cell as the wholesale price for TBG Shareholders at a minimum output of 200,0000 cells. Our mission at TBG has not been to establish a major new access technology company but simply to prove that the piezo-electric cartel can be broken wide open. And I believe that this is only the beginning. Orbit[[2]](#endnote-2), which has produced this new reader can customise the units on a quality/cost basis; for additional money you can:

* turn the device into a simple note-taker
* choose between 6- and 8-dot cells
* double or even quadruple the number of cells
* alter the refresh rate
* tighten noise restrictions.

It contains a facility for an SD card carrying many books and Bluetooth for internet connectivity. It will not only be good for libraries wishing to expand user choice and catalogue range but it will also be vital in the literacy education of blind children in developing countries.

The idea is that over and above the simplest model, we are faced with a price per feature set of options instead of having to buy what the old cartel was prepared to offer.

And, again, this fits with my overall philosophy of offering choice. If RNIB was to say to me as a customer, we will supply you with unlimited hard copy braille library books, of course I would accept but, instead, I am faced with the depressing situation that I have read every book I want to in RNIB's hard copy braille library; so, under these market conditions I will be prepared to accept many titles in a file format for a braille display; it isn't quite the idyllic way to read a novel in front of the fire, but it's better than not having a novel to read!

At the same time, the whole page display for those who want it, is no longer a distant dream. Orbit is collaborating with APH to produce a whole-page display. BLITAB in Vienna claims that it will reduce the price of tactile output on a whole page display to under $1 per pin; and there are others in the field.

Low Learning Costs

For more than half a century there has been a huge amount of controversy about the use in the English speaking world of contracted braille. The arguments have largely evolved around space and reading speed. Interestingly, the arguments have not been very concerned with the width of access or the cost of transmission which exemplifies, in my view, incumbent, elite selfishness which accounts for the coding obsession.

As I have already indicated, the advent of computer driven braille systems means that the need to reduce the number of cells per string so as to economise in manual single document and plate making no longer applies. The argument about space saving is, largely, a misrepresentation of the origin of contractions. It is the case that contracted braille saves space but this will not be a serious issue with braille on demand and, actually, it's not really a serious issue for libraries shelving braille as the space saving is not significant.

As to the issue of reading speed, there is no doubt that the braille elite in the English reading world reads contracted braille faster than uncontracted braille but this raises some critical issues.

First, there is the philosophical question of whether the elite should design a system for the elite; but there is also the much more existential question of whether braille solely for the elite can survive in economically challenging times?

Secondly, as the technology now allows the cheap output of uncontracted and contracted braille from the same file, why should any system be imposed by the elite on everybody else? Just because a few people like contracted braille should not mean that everybody has to consume it.

Thirdly, to what extent does contracted braille prevent its use by the vast majority of the blindness population, those who go blind in later life? Why would anybody, coping with becoming blind, want to tangle with a code which bears no relation to their print experience?

Fourthly, in whose interest, other than that of the elite, is it for contracted braille to survive? On the surface, it's in the interest of those who are paid to teach it. I have faced extremely hostile, and sometimes abusive, audiences for saying this but the fundamental questions we have to ask ourselves are these:

* Is it in the interest of the blind child to spend more time learning to read and write than her sighted peers when she has so many other skills to acquire?
* Is acquiring complex braille skills the best use of time of the newly blinded adult who has so many other challenges to contend with?

These are not absolutist diktats. I am not going to make the same mistake as so many in the sector of imposing my preference on others as a monopoly supplier. But for blind children and newly blinded adults every hour they spend on acquiring complex braille skills is not being used for something else.

Effective Marketing

Over the years most braille authorities have had a committee concerned with the promotion of braille but it seems to me that the failure of most of their activities lies in the fundamental attitude of braille authorities and publishers to the medium.

Let me put it this way. What if I advertised a new phone app as follows:

*This extremely old fashioned app is very expensive to buy and extremely difficult to learn and can only be acquired through a professional intermediary.*

This goes as far against our culture as you can imagine.

In our new, self service world of online shopping and apps, it seems to me that the essential for braille is that it can be self taught, ideally with a braille display in tandem with synthetic speech and modifiable print; but, in any case, self taught.

If we continue to rely on professionals to provide tuition, then it is only a matter of time before braille dies.

Conclusion

Let me finish by saying again what I am saying and what I am not saying so that there is no room for accidental or deliberate misunderstanding.

The cardinal sin of the blindness sector is to adopt one point of view and to impose it rather than allowing for user choice; and so what I have said is not a set of dictatorial requirements but is, rather, a set of default options which should be tested by triage.

It may well be the case that totally congenitally blind lawyers will want hard copy contracted braille legal texts; and it will certainly be the case that congenitally blind children in high school will want their STEM subjects in hard copy braille; but that does not mean that such production is the default option for all customers. Just the opposite. We have to default to the simplest and cheapest methods, graduating to the more complex and expensive as required. If we persist with defaulting to the expensive and the complex, it is not a question of whether braille will die but simply when. If we grasp the opportunities we have now been given for cheap production of an almost limitless catalogue, cheap access through cartel breaking refreshable braille technology and uncontracted, self taught braille, then, the medium may survive.

2,837 words

1. [www.transformingbraille.org](http://www.transformingbraille.org) [↑](#endnote-ref-1)
2. <http://www.orbitresearch.com/> [↑](#endnote-ref-2)