

# Where is all this reading and writing taking us?

**Geoff Bateson**

As part of the 2005 Birmingham Book Festival, Geoff Bateson gave a talk – in his usual style – looking at recent activity across the city and projecting some puzzles for the future. What follows is an extended version of his talk.

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The sessions at this year's Birmingham Book Festival include an amazing variety of inputs about specific books, or particular writers, or focus on unique genres. This talk is slightly different in that it takes a broad sweep across a wide set of ideas and practices, covering all age ranges across the whole of Birmingham, over a broad time span.

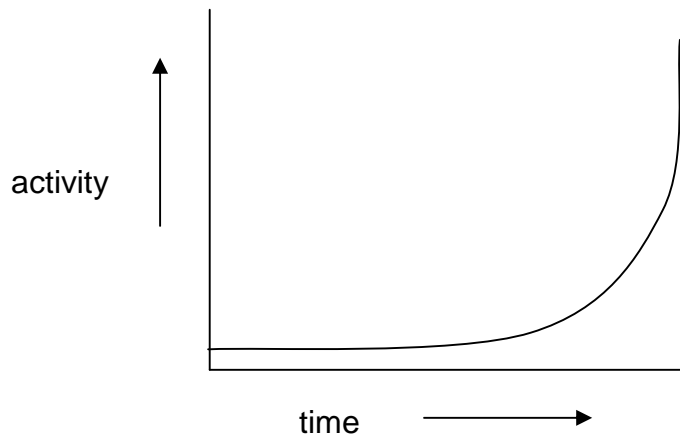
Whilst skating across ideas and statistics I will be on the lookout for any linkages that might be made or puzzles that might be pulled out. It sticks to reading and writing – not because those are the only important things in the world, but because language/literacy is central to the function of the Core Skills Development Partnership in Birmingham and has formed the bulk of my work over the past ten years.

To know where anything is taking us (or we're taking it) it is always useful to look back at where it's all coming from. Not so much 'Where's all this reading and writing taking us?', more 'Where has all this reading and writing got us?'

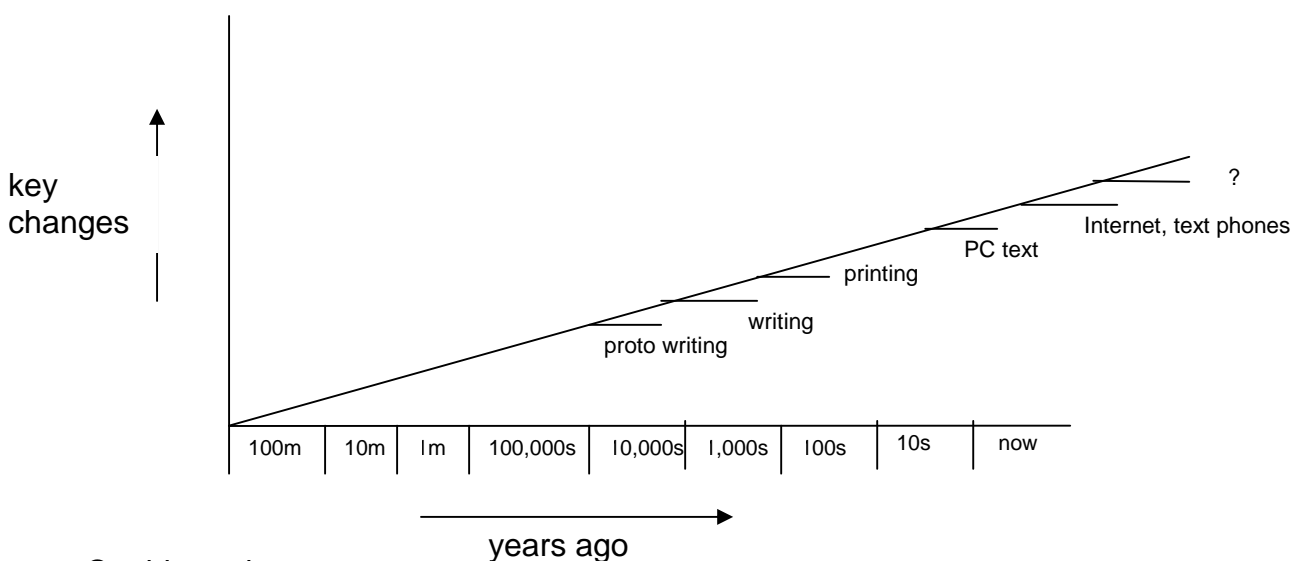
We can think of history as a sequence of events; things that happen in order (above the surface): History then being just 'one damn thing after another' and if we can only remember the names, places, dates in order then we can do history/be historians. So 'all this reading and writing' could simply be described in terms of a historical sequence of writers or novels; or a series of education acts or school developments.

Or we can think of history as the deeper (below the surface) structural changes – the deep churnings of social, economic, technological advances – all those long term things that throw up events for us to count as 'history'. Taking this long-view of change is to consider the broad volume of human activity – any graph of which rises exponentially/asymptotically. (As an aside here it's worth thinking about all the wonderful words that have aggregated into the English language as it now stands – 'exponentially'; 'asymptotically' – wonderfully lyrical words and so many of them that we almost have far more words than we will ever need. It's such a wonderfully diverse language. How can we ever be stuck for words? How can we ever get to a position where we

have nothing to say or to write? How come that some people can't find the right words?)



With this kind of chart, where everything gets piled up at one end – you know the kind: ‘if all human existence were a day, all of this reading/writing activity would be crushed into the last hour’ – the problem is needing to stretch that last crowded part out to be able to see what’s going on. One way is to use a logarithmic scale for time – one where one division = 10 years, the next division =  $10^2$  years (100 years); the next division =  $10^3$  (1,000) years; then  $10^4$  (10,000) years, and so on.



On this scale:

- tens of thousands of years ago:  
Proto writing. All the squiggles and smudges that accompanied cave paintings in Europe; rock art in African deserts; shapes poked into drying river beds. There's no way of going back into the minds of those early mark-makers.
- thousands of years ago:  
Writing as we might recognise it. Those early discoveries of pigments that would permanently stain papyrus or flattened leaves or early paper when applied with a brush or a quill or a pointed stick.

Writing that allowed for codified forms, alphabets, symbols across a whole culture – but which also carried the style of the writer.

The culmination of this might be the image of the monk working laboriously over years on an illustrated manuscript. The laying down of ideas into set forms that people would come to refer to – that would be lodged in secure abbeys and certain people allowed access via approved intermediaries.

- hundreds of years ago:

Printing. Set pieces of writing, with set order, punctuation etc. The difference now being the idea of portability – that people could run off their copy and carry it round with them, can refer to it anywhere, at any time. The idea that texts would go to people (not people come to the text). That text could be quickly done in large volumes – that reading (and to an extent writing) would be popularised.

Even more recent inventions such as the typewriter can be thought of as belonging to this part of the spectrum. A typewriter, after all, is simply a portable printing press where each letter can be called into place at a time for it to print its shape into paper. Electric typewriters simply provided a less energetic means of doing this. This stage of development covered the period from the late middle ages up to very recently (almost at the stroke of midnight on our 'if all of this were one day' chart).

- tens of years ago

In the 1960s I was programming a computer. This involved writing hundreds of lines of simple instructions, typing these one-by-one onto punched cards – taking the stack of cards (carefully keeping them in order and out of the rain) to be handed in to a receptionist hatch on the outside of the air-conditioned room set aside to house the valve-operated computer. Three days later I would go back to collect my print out which all too often was not the hundreds of sheets I expected but a single sheet saying 'error at line 43 – retype programme and resubmit'. Hardly a means of writing large volumes of text!

By the 1980s I was using a home ZX81 – a computer with the memory space of a not very bright ant. Every time you wanted to use it you could load a programme on from a tape cassette. It's ultimate achievement was being able to play a slow game of tennis where a white dot could move across the screen and ricochet off a vertical line that served as a racquet.

In terms of writing, the first real 'writer's machine' was the early Amstrad – with its green text on screen and a system of saving work on floppy disk (except that even the shortest piece of writing seemed to produce a 'disk-full' message).

Nowadays I can produce text that will work on almost any other machine in the world; can change the size, layout etc with one click of the mouse; can store all the writing I've ever done on a memory stick that will fit into my

pocket. I can cut and paste bits of one document for many different purposes. The computer will automatically check my spelling, my grammar and (if I wish) will auto correct. There is predictive text that will guess what I want to say and type it out in full as I put in the first few letters. This isn't just a form of printing – the print out is a physical form of the qualitatively different set of text manipulations.

- over the last few years:

Ten years ago, in 1995, no one I worked with used email or the internet. Now almost all of the people I work with communicate electronically and feel comfortable searching or downloading from a huge 'library on the web'; onto any computer, laptop, phone, ipod; on demand; text and pictures; written formats/spoken formats. With recent protocols re accessibility, this is now available to almost anyone. With the growth of access points (internet cafes; terminals in every library and in many other community venues; with more than 60% of homes in Birmingham having PCs and internet access ...) it's becoming easy for anyone to get knowledge on anything at any time. With agreements being worked on to put digital copies of all books within people's reach there must be some compelling reason why people will want to wait until a local library opens to see if a book they have is on the shelf or not.

There are gender differences in all of this (of course). 61% of American men go on line each day and tend to use the internet for information (particularly those more middle-aged early-adopters of the internet). 57% of American women go online each day (and since there are more women than men, this works out at a greater absolute number of women than men using the internet) predominantly for formal and informal communication and the exchange of ideas.

In terms of downloading information, online communication (which includes online communication with public and private service agencies), and real-time chatting, the internet's use has grown enormously over a relatively few years.

As well as downloading and exchanging, we can also upload – on impulse; with ease. Anyone can put anything in the public domain – in great volumes, at great speed – and they do. As an example, it is estimated that one third of all young people (aged 14-21) operate their own webpage and /or write their own weblog, full of information and views that has meaning to them (and their friends) even if it is considered to be rubbish by others. These young people spend on average an hour a day chatting/instant messaging/sending emails – a large 'word of mouth' (or is that 'byte of text'?) community of communications via written/read words. At the same time 60% still read newspapers – it's not that the web is replacing other forms of reading/writing, it's more that it's extending them – and amongst all of that messaging there's likely to be some beautifully written stuff.

It's not only young people, it's being developed across the age-range. This is why there are now 75,000 blogs created every day – a new one

posted up there every second of every day. Nearly 15 million bloggers are still putting contributions on their blogs after three months – it's a long term thing in internet terms.

And in case we felt that blogs and other internet communications were only transient 'chatter' between people it should be remembered that:

- 'quality' newspapers are increasingly supplementing their news coverage with quotes from blogs as a kind of 'vox pop' balance to their own reporting.
- thousands logged on to the blog of an Iraqi who charted the reaction of everyday people in Baghdad in the run up to the invasion by coalition troops.
- some blogs are being put forward for recognition in an award for internet writing – any writing which started life online (and thus doesn't need to have been 'published' in the traditional sense).
- there are more than 60,000 Iranian bloggers online – many of whom run the danger of being arrested for dissent.
- in America, widely read political bloggers have claimed credit for some political outcomes.

It is clear that there has also been an extra dimension, recently, to text and literacy developments (beyond the accessibility, quality, transient etc aspects talked about earlier).

Until very recently almost all text was linear, read in sequence, across/down a page etc. Increasingly documents are now accessed at one point, jumping off to a number of other linked points at the click of a mouse – with maybe several bits of pages on screen at any one time. Readers find their own routes through the range of text–fragments, shifting between graphics, video, text, and sound. Learning to 'read' in this format is sufficiently different from reading linear sentences for it to be seen as a 'new' literacy. At root, however, each fragment of written text is dealt with in the 'old' way – what is new is simply more of the fragmentation/choice/individualisation that we have seen as the feature of developments across the years. New literacies seem to me to build on – more than that, rely on – established literacies.

History, we have seen, has – in terms of reading and writing – been driven up a number of levels by technological shifts that weren't just improvements/adaptations of what had gone before, but real qualitative leaps in what was possible. Each technological shift of gear made both the production of writing and its consumption more available, to wider groups of people, in greater volumes, customised in a variety of ways, anywhere/anytime etc.

The next step in technology (which on our exponential scale should be due in the next few years) could well continue and build on all of these developments, making it easier for anyone to create complex, multi mode 'text' and to more immediately access the thoughts, ideas, opinions of others – all needing ever more sophisticated tagging, search-capability, sifting and

sorting tools or a heavy reliance on people signposting each other to fragments of interest or it could be one of those quantum-leap changes.

If we are now about due for the next big leap forward – where do we go from here? Some people are talking about new forms of the internet but maybe that's just a refinement of what exists now (in the way that typewriters were a refined printing press). What is unknown is what the next really new development might be (something as different as computers and the internet were compared with traditional printed type). It is one of those unknown unknowns – so who knows where it's all going to take us if there is a new 'next step' in development (and can they really keep getting faster and faster – more exponential – more asymptotic?) – or are we left guessing, only able to think in terms of what exists now?

In reality, it's not so much about simple technological advances. It's more about new concepts (around which different technologies can be developed). The job currently is to patrol the ideas boundaries, alert to the possibilities of looking beyond the 'now' to the 'potential'. This is about thinking/creativity – but it is also about being able to communicate and use language for things we don't yet know.

If we are on an exponential upward curve, if the volume of produced and consumed text increases at an ever faster rate, (leading to wider access to some excellent writing – but also creating open access to mediocre content) - this may create more discussion about what 'counts'; what is 'worthwhile'; what should (if anything) be 'disallowed' (and by whom); questions of what all this reading and writing is for – what the point of it all is.

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Maybe now is the time for a change of direction within this presentation – time for a little spell of 'what if' thinking. We have seen how the basic typewriter printing concept was transformed into word processing – the changing/processing of documents in real-time, not only changing style, appearance, layout etc but having auto-corrections (to leave the writer free to think about content) and having 'predictiveness' based on short cuts and past usages. We have seen how this can be uploaded/downloaded/shared across/mixed with other content from the web.

And we may think that all of this is exciting enough – but consider how that simple ping/pong action of the early tennis game has become the current generation of online, group games with superb graphics etc. Think of all the creativity and brain power that must have gone into game development. What if the games-brains had been applied to writing software. Where would it have taken us by now?

The basics are there:

- The early 'adventure' programmed books where the reader made choices at the end of section and was sent to a different strand of the story based on that choice. An adult version being e.g. 'State of

Emergency' by Dennis Guerrier and Joan Rivers where the reader gets embroiled in a civil war.

- Does this then become the ability (on the web) to paste yourself in as a character in an unfolding on-line story; to interact with other characters in ways that writes and rewrites multiple versions of the story which get pasted on the internet for readers to download/interact with ...?
- Software exists to support individual writers, as very basic plotting aids or character-defining aids – leaving the writer then to build on these in traditional ways, but always constrained by the restricted nature of the software.
  - Would the 'games brains' have by now created much more sophisticated multi-character; multi-plotting software, producing lots of options that get sifted out/edited on at each stage?
- Voice recognition software – eliminating the need to type. Even explorations of brain sensors that might interact directly with a computer.
  - Would it now be commonplace for ones thoughts to get directly stored, worked on, typed out during those creative, half awake times, or as you drive along (maybe based on earlier spoken 'conversations' with the computer)?
- We have software that recognises and copies styles of writing; sentence length and complexity etc and can complete lines of thought once given the first few steps.
  - Would the 'games brains' have taken this as far as computers formulating whole chunks of tentative writing 'in the style' – drawing on a wealth of past writings - from a few predictive clues?

If the intelligences and creativities that got applied to games had been applied to these rather basic software supports for writing where might we be now? Let's imagine: Would the following be too far fetched:

As a writer I come down to breakfast. A sensor under one of the stairs switches on the plasma screen next to the breakfast table with a 3 minute delay – long enough for me to get coffee and sit at the table. The screen slowly lightens and the selected editor-of-the-day is there. It's still Irina. I've used her for the past couple of weeks. I could select any of the others I've created over time but, at the moment, I like Irina. I've put her together to create someone who is female, dark fringe (slightly intellectual look behind it); Estonian (so good English but with a 'different' Eastern European accent); literature degree from Leningrad University (so brilliant at linguistics etc); challenging – but not overly so, ... and so on.

She starts the conversation. 'So, what's your big idea of today Geoff?'

I talk out loud – knowing that she's taking it all in. 'Maybe I should write something set around the time of the Good Friday agreement in Northern Ireland – rooting back into the Troubles – civil servants

negotiating/manoeuvring/almost dancing round the discussions. Beyond them leaders of two communities skirting round each other ... and within each family there will be family members who position themselves in relation to each other – all as some kind of movements within movements – a kind of ‘music of the spheres’. Maybe Mo Mowlam should put in an appearance in the story ...’

Irina interrupts:

- ‘and would the action be just in Belfast or would it spill over into Dublin, London – maybe some American politicians?’
- and could there be a ‘thriller’ strand – maybe some girl out to bomb the talks? You once had a character, Detective Sergeant Doyle, maybe he could be given a few hours to track her down. What do you think Geoff?’
- and what about pace and sentence length – same as before? Is there anything you’re unhappy about with what you’ve written over the last 3 months? Anything you might want to change? Less description – fewer adjectives, maybe?’

Voice recognition software makes it appear that I’m having a conversation with a friendly editor – but one who whilst I’m talking can already have trawled the internet – Good Friday Agreement newspaper reports; Mo Mowlam’s writings; other world events at the time; my last books featuring Detective Sergeant Doyle ... and can have put relevant sections together in my writing style – all behind the scenes of our simple ‘conversation’.

Irina again: ‘Geoff, I’ve sketched out some predictive texts and checked them for style. They outline various options/ways it could go ... 10 draft pages ... see what you think.’

I read them through over another coffee as Irina fades to shadow – to reappear once I start talking about the bits I like/don’t like; as I comment on some key sentences/descriptive passages; some strong bits of dialogue etc. ‘She’ does the research. The basic sketching of ideas. The initial slog of typing. All of this leaves me creatively free to do those writerly key tasks of decision-making; imagining; redrafting – to take on the tasks associated with being a writer.

By the time I’ve nipped to the shops – Irina has done a first draft for me to work on. A few days of this and there’ll be a credible text up on the internet and selling well via set of email alerts to my growing fan base across the world.

How far-fetched is this? All of it is already technically possible – all could be developed now.

And if that is possible for writers what would the world be like for readers?

We have seen how printed text has shifted to popular/on-demand/variable format ... but we might still have a mindset that thinks in terms of ‘print’; ‘paper’; ‘delivered’ etc ... what would this look like in future?



Imagine a thin sheet of plastic able to show print as clear type, with its own in-built chip able to receive text (like a phone). The sheet could be crumpled to fit in a pocket and, when shaken, would go semi rigid to make the text easier to read. Squeezing pressure pads, or running my hand across the sheet would enable me to flip forwards or backwards through the 'pages'.

This would allow my daily order of newspapers to be delivered directly to my reading screen – and to be updated constantly through the day – and my standing order at the e-broker needn't be for full newspapers, but could be for different sections from different papers/sources i.e. fragments of news/articles, single items, combined to suit my interests, sent to me against a menu of topics I have specified – which I could read or listened to via my earpiece.

Again, this isn't the future, it's being prototyped now. It's not part of our everyday reading yet but it soon could be. The innovations are already being described: Thin transparent coating on cereal packets could carry news broadcasts, interspersed with adverts of course; flatpack boxes where the instructions can be watched as video on the lid of the box rather than struggling with diagrams or written instructions; cinema tickets carrying trailers for future films.

The internet itself is creating different forms of usage. Whereas many (those older men, predominantly) see it as an access route to hard information – as relatively static content to be searched for; others (those predominantly younger people) are already using tools to create changing networks of knowledge that are more transient, more interactive with each other, more dynamic – as 'process frameworks' in which anyone else's content can be dropped and made use of. Content is generated by users writing blogs; viewing each other's photos; exchanging views – content that is cursorily checked to ensure it complies with a few simple rules and legalities.

Most people of my age are used to set categories – photos in an album; stories in a book; video on a TV set; words from one song or story staying in its place. With different 'technological' thinking we can imagine cutting maps from one source; with statistical data from another; with photos from a third; linked to text from reports – mashing things up together.

There is now an increasing variety of collaborative, social software. This is functioned around people coming together because of common interests (and thus, maybe, an assumption of shared values), interacting with each other, developing online relationships and reputations. On-going groups of communicators can establish their own norms and expectations, can fall out with each other or support each other, and can have strong views about any attempt to control by outside authorities. Through such relationships people can recommend other sites to visit, can edit each other's web content (to get a fuller set of opinions) and be less interested simply in site-visiting as in contributing to content in order to extend common understandings.

The software now learns from its users (checking what most people click onto and prioritising this, putting the popular preferences in front of others) and, in many ways, since all of the users are potentially linked to each other – we all have access to each others' preferences and choices. Where we have reached is the capacity for collective intelligence (drawing on the combined wisdom from across the world) or collective unintelligence (or even collective stupidity?)

There is a growing number of sites to which people upload their own writing (or photography; or social comment etc) and comment on each other's contributions. Once people feel comfortable with online writing and know the various most-feasible (for them) routes in, writing can be done without any recourse to writing classes, writing groups, publishers, printers, agents, bookshops, magazines, newspapers etc, by-passing much of the infrastructure that we have tended to associate with being a writer.

Putting tags onto their uploaded writing means that this work can be 'automatically' brought to the attention of others with common interests, without each one of us having to trawl endlessly through new content to find things we may be interested in. The tags don't need to follow traditional categories (not 'fiction' or 'poetry' but labelled 'interesting' or 'radical' ...). So people are not only adding content, but are also deciding on accessibility, on labels and on values.

There are blogs; there are blogs summarising the blogs of others – there is so much stuff out there at any one time that 'blogosphere' has started to be used to describe the outflow of text. From a standing start in 2002, this blogosphere is running at around 1.2 million blogs posted per day and is doubling in size every five months (we could estimate that it's worth describing as 'exponential'). Even if half of the new bloggers have faded away after 3 months this is still a huge and rapid change in the way people are communicating. Most of the new blogs are now in Japanese and other Asian languages rather than in English. Much is now of a short, 'conversational' mode rather than longer 'article/essay' type postings.

This raises questions of the qualities of much of the content. (Does it inform? Does it lift the soul?); about values expressed (who is responsible if content if issues of libel arise? Who ensures compliance with any laws – and do national laws apply in cyberspace? etc); about the purpose behind it (Is all of this a new and exciting form of social interaction in groups, at a distance; or is it just isolates spending time online – gossiping and posting the equivalent of the traditional 'letter to the editor').

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All of this, of course, presumes a community out there who have the skills enabling them to write and read to a reasonable level (even with voice activated software and text-to-speech software).

We need, for a while, to go back to the question of ‘where might all this reading and writing be taking us?’ but tackle this at the level of Birmingham – real people, in real families, over a very recent timescale.

Again, this gives us the chance to look back over our shoulder; to take stock of the here and now; recognising that Birmingham’s motto is ‘Forward’ – so that’s where we are going to have to be facing at the end of any explorations.

Looking back, e.g. two centuries ago, Birmingham had (at the top of the hill) the thinkers of the age – the elite vanguard of readers, writers, thinkers and do-ers – and (at the bottom of the hill) the mass of navvies and labourers – all those ancestors of ours who put an ‘x’ on legal documents.

Just over a century ago (‘at the stroke of midnight’ on our asymptotic curve) we had new Education Acts; primary education for all; adult literacy breakfast reading groups for working men; private investment in a network of public libraries across Birmingham. The century since then was a struggle for families and communities (given all that they lived through) supported increasingly via civic pride; national legislation and – above all – a dogged determination by families and communities that their children would do better than they themselves had had the chance to do.

There was schooling to 14, then 15, then 16 – and an expectation now that young people might still be in education or training to 19 years old and beyond. The volume of education has increased, but what happened in terms of content?

In my own experience reading and writing (as a ‘subject’) was characterised by set plays/poems; round-the-class readings; Friday morning spelling tests; red ink corrections to be written out three times; secondary school remedial departments with a full quota of staff and worksheets.

In this context, reading/writing for so many people was associated with low enjoyment, low status and narrow exercises – with inspiration for others coming from what they themselves brought from their home environment; or through special contacts; meeting ‘my best teacher’; or chance factors connected with where one lived/the school gone to etc.

What changed, nationally, in the 1990s (with Birmingham playing a strong part in this) was an attempt to get to the bottom of the what and the how of language learning in order to work out what should be in every child’s experience, in every classroom, in every school – whilst leaving the class teacher professionally in control of the teaching and learning; and avoiding the sterile either/or trench warfare of debates around real books/phonics etc.

The context in Birmingham in these early 1990s was:

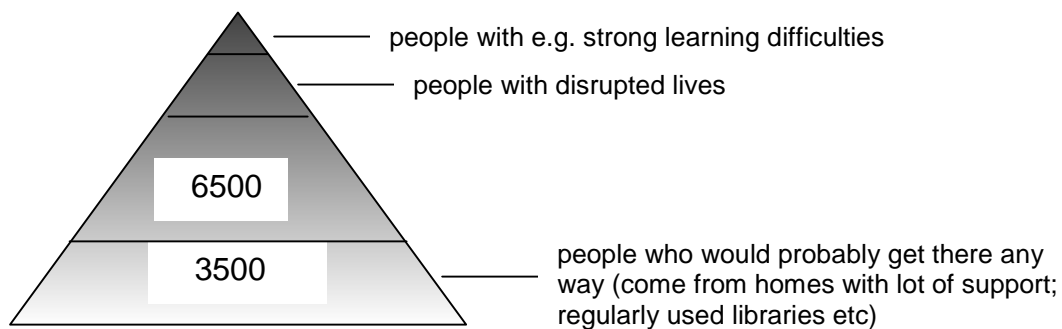
- just over one third of 11 year olds having the reading/writing skills and motivations that might be considered to form a solid platform on which to move forward (compared with having a shaky skills platform, and wobbling uncertainly through secondary school learning).

- only 25 % of school leavers expected to have a platform of skills and attitudes (to reading; to written things; to learning in general) that would sustain a learning development on into adult life.
- 1 in 5 adults not able to operate functionally in situations that needed interaction with text.

Birmingham invested substantial time, energy and development resources over a sustained ten year period (and is still doing so) to bring about wholesale shifts in levels of achievement of large numbers of children, young people and adults – through pre-school activity; through schools; through libraries etc ... - and it worked. Skills levels rose in Birmingham faster than in other comparable areas, closing down on national averages, with many people reaching a high skills level.

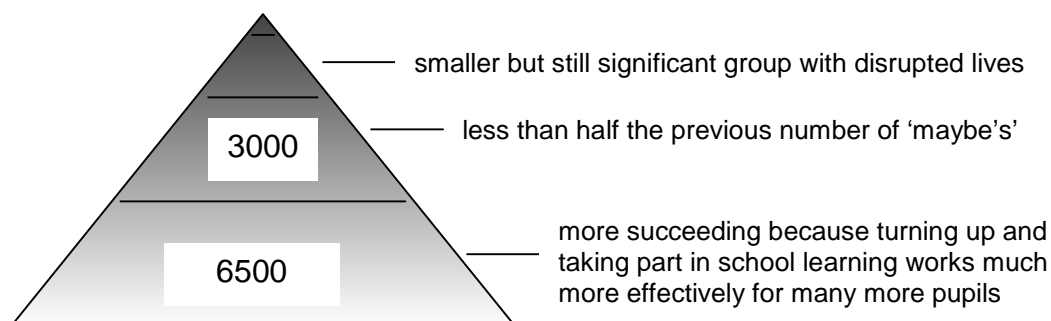
Even when other areas did the same and began to catch up with Birmingham's early lead over a 5 year period, we had still managed to improve the skills of 3,000 people/year i.e. a permanent gain for 15,000 young people over the 5 year period.

Ten years ago, at the end of primary school, we had a distribution across any one year's cohort of pupils that (for writing levels) looked like:



The 6500 middle band were a bit of a puzzle – were ‘maybes’ – people for whom success hinged on the characteristics of the school; the teachers met etc. – pupils whose futures were uncertain/contingent/variable.

Now (ten years later) one year's cohort of pupils – in terms of writing skills – looks like:

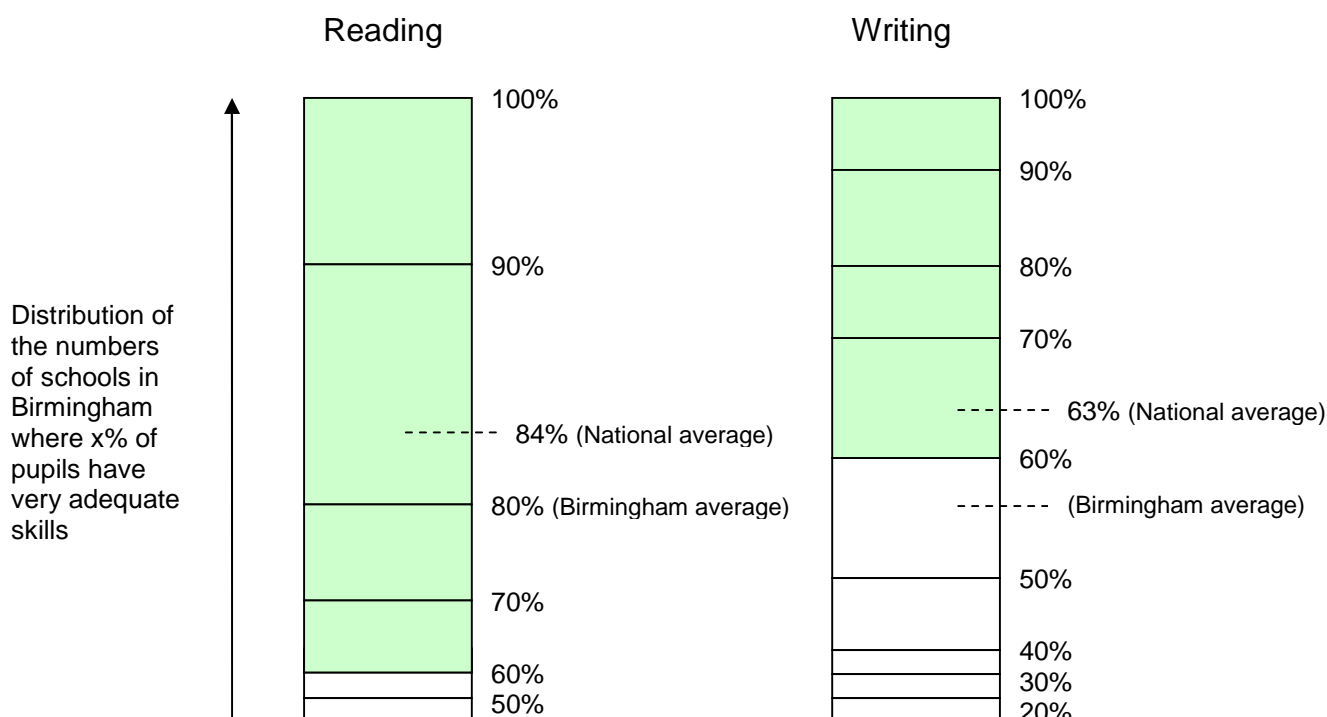


If Birmingham goes on as it is doing now – there is enough improvement momentum in the system to ensure that we will continue to make more progress. Things seem as if they can only get better.

There is a need to work on some background issues of behaviour, attendance, well-being, feeling safe, attitudes to learning for these ‘maybes’ etc and there is still more to be done in those schools where more than 60% of pupils are able to read and write perfectly well.

Looking at the ‘chart’ of reading and writing levels (at the end of primary/beginning of secondary schools) there are whole chunks of schools where 90% read very adequately, other substantial chunks where 70/80% read well – in fact there are only a handful of schools where less than 60% of pupils read very adequately.

With writing, however, it is only in half of all the schools that more than 60% of pupils write adequately.



There isn't a terribly bad reading issue in the city (overall – although it clearly remains an issue for some individuals) but there is a clear and substantial writing issue.

And yet there is a bit of a puzzle. The issue for the city is one of ‘writing’, and yet looking back over the developments of the past 5 to 10 years there has been a disproportionate focus on reading development and a paucity of writing development activity.

We seem to need to take books (that others have written) as the starting point rather than the recording of one's own mark on the world as a starting point. We encourage people to be readers but to do writing (i.e. have a self image as people who have a love of books but little or no social image of people as writers ...) – and (one could argue) even less of a social image these days of people who can be orators, spokespeople, people with a right to say things (active speakers, not passive listeners ...) although there is more of a focus now on writing (and on speaking and listening).

We can map out the 'hotspots' where writing levels are lowest; we can suggest what families and communities can do to promote the early development of writing. As a city we can do more to foster a community that feels comfortable writing and which feels that it has something worthwhile to write about – and a community that feels comfortable with people speaking up/speaking out, in a context where people are better able to work out what is/is not worthwhile speaking about in public.

Just now I threw in various figures based on assessments of school pupils. There are always going to be problems with assessments – whether peer assessments ('What do children know about standards; and won't they score friends highly?'); teacher assessments ('Don't teachers score more highly pupils they have certain perceptions of?'; 'Won't some teachers elevate scores to give a better image of their own teaching?'); or via tests ('Won't people simply teach to the test?'). Some of these problems are validly linked to issues about what skills tests really do test, cultural bias in test language etc.

Nevertheless there is a consistency underlying the assessment system which, even if the percentages are out by a degree of error, enables us to be confident in saying that literacy skills levels (comprehension, spelling, constructed writing, punctuation, grammatical correctness, vocabulary range and depth, etc) have increased substantially over a ten year period – children aged 5 to 15, overall, have never been this good with words!

The criticism, including from some famous writers, has been that this improvement in skills has been at the expense of creativity, imagination i.e. all this development activity has improved 'doing writing; doing reading' at the expense of 'being writers; being readers'. From a relatively privileged position it is possible to decry the skills-based approach – but if a small number of already competent children are not stretched and the 15,000 mentioned earlier gain substantially then it may not matter that much, since the under-stretched few are likely to have strong out-of-school/home support that will carry them along anyway. In any case schools are now more aware of their responsibilities to stretch all children's abilities. Creativity and skills are far from being mutually exclusive.

At the same time we do have an educational/philosophical/linguistic puzzle – both for adults and for young people. If we have this wonderful English language – with more words than we will ever need; with its rich complexities

of pronunciation and spelling; with its homophones, synonyms etc that allow for a delightful range of puns, jokes and allusions – and we break this richness down into its mechanical parts to make explicit how the language works – and we then teach these separate skills very effectively to children and adults so that they become skilled in the parts – how do we ensure that those learners can also add all the parts back up together, in a multiplicity of ways, to get back to the rich texture that is our language? Will starting with an exposure to rich language automatically drag along skills acquisition (there is, for many young people, little evidence that this happens by itself)? Will having all the skills guarantee an enhanced usage (not without a context that encourages it). We need both skills (at the micro level) and an appreciation of language (at the rich macro level).

Is one part of the answer for the city to promote even more of an exposure to a love of books through libraries (to supplement what already happens at home etc)? Libraries are well used by a variety of people, giving access to a range of texts and genres – even if their claim to ‘change lives’ is a bit of over-imaging. Nationally 60% of the population are library members (even if not active users) and 70% of children equate libraries with being good places to find things out. Certainly libraries are held in high esteem generally – 95% of the adult population see libraries as ‘a good thing’. This doesn’t mean that shifts don’t have to be made, and are being made – a key one being a continuing refocusing away from ‘access’ (lots of books, computers etc) to ‘connecting people to knowledge for a purpose’ (many routes to worldwide sources of reliable information – with a human interpreter/assistant on hand) – a place to borrow books but also a place to refer to things; an emphasis on fact as well as fiction; libraries as research venues; libraries as places where texts/words get used for a range of purposes ... libraries that are, amongst other things, ‘people’s universities’?

Schools can do a lot to ensure that the basic skills are practised, rehearsed, played with, explored etc but given the constraints of everything else they are expected to do maybe the larger chunk of this falls to the family, to community networks, to social organisations. A key role for libraries, and for voluntary/ community organisations etc could be to have a concerted push on ‘extending language’ – by which I mean creating a whole range of opportunities whereby people of all ages (separately and together) can play with words. Let’s keep our earnestness around basic skills (and higher level skills) and let’s add in many more dollops of playfulness, fun and enthusiasm for the intrigues and possibilities of our language.

As part of this there is already a huge amount going on across the city to support the enhancement of reading and writing. These are listed in an accompanying article (Birmingham: current and recent development activity relating to reading and writing) but there is still much more to be done to link language, community and creativity.

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So where is it taking us, all this reading and writing development activity?

- There is in Birmingham an improved (and still improving at least for the next few years) set of reading skills in people of all ages; some improvements in writing and speaking/listening (with quite a bit more still to do).
- Reading and writing are now 'sexy' – activity popping up everywhere; lots of organisations 'discovering' reading/writing; lots of motivation/enthusiasm.
- There is more clarity about what is possible; what works; what needs to be done with which groups in which parts of the city – i.e. differentiated activity not mass solutions.
- Ways forward for individuals are strengthening e.g. for those who want to be a writer (cf. just doing writing).
- New services/activities are emerging e.g. a stronger role now in the voluntary/community sector. Some new 'managed services' being established (e.g. coherence re writers into organisations).
- We are always at points of choice (e.g. between loosening over-prescriptive approaches, but not going back to doing ones own thing all the time).
- There is a degree of reinvention of what is already being successfully done – and some gaps are not being addressed. There is a need for occasional overviews being taken (without wanting to manage everything).
- Birmingham is establishing creative industries – so may be well placed to build on the next technological leap, whatever it might be – but predicting what this might need is still held back by lots of old-style thinking (about ownership; about print; about 'empires'; about 'what counts' etc).
- There is a drive and an enthusiasm in the city that will continue to build on the whole set of developments that are in place – but we need to more actively look for ways that each development can support others; how to avoid things becoming isolated 'projects' etc.
- In the Core Skills Development Partnership the city has a nationally-recognised set of ways of working that push partners to go 'faster, deeper, wider'; that focuses on whole-system changes in the way major services work; that loosely holds a broad set of developments together without seeking to own this area of work; and that is being picked up as a model in other places.

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In this final section we look at a further set of puzzles:

- If Birmingham's ambition is to give at least 80-90% of the population the higher level of skills needed for the future – and if we know which communities, in which part of the city have the furthest distance to travel – what do we know about how best to support people getting there? What do we know about people learning? What do we know about the real benefits of 'all this reading and writing'.

Our understandings of brain operations are still unfolding, and what we know now may not be held true in the future, but at the moment we believe:



- that babies' brains have a degree of plasticity i.e. their development is not linear/fixed. The amount and speed of developments can be affected by experiences such as being talked to with repetition, rhythm, rhyme (and how adults respond to babies' first attempts at speech). Babies respond to colour; to patterns; and to simple puzzles (even when only a few days old).
- that early interaction with books is important – but maybe books are just an impressive means to an end. Maybe what counts is the closeness to a meaningful/caring adult; the rhyme/rhythm/repetition; the anticipation of what might/might not happen next. Maybe these things could be got equally well from well chosen clothes pegs, a patterned tea towel, and a glove puppet. It is true that non readers tend to come from homes with no books – but this is not automatically the case, and homes with no books tend to be homes with little else ...

A growing line of thought puts affection, closeness and the right tone of voice as determining factors – but these need to support the setting down of brain pathways through experiences – brain pathways that become more and more established through use – through experiencing similar and different situations. (The image might be a field of corn – people walk through it; as others decide on a path, they follow the ones already made, which become trackways, which become footpaths etc). Within all of this 'text' may play its part, but speaking and listening may be the real key.

At various stages of development the weaker pathways get shed – the connections are no longer built up – and the ones most in use get strengthened and protected. We know that massive changes happen to the structuring of the brain during adolescence – which goes part way to maybe explaining the 'dips' in ability re language, maths, mental processing etc in early secondary school years.

Whatever the stage of development, the more the brain gets used in particular ways the more it stays usable. 'Use it, or lose it': a principle that holds through into old age. Books provide a really good tool for fulfilling this 'thinking' role – as do chess, music, puzzles etc – maybe books are the simple, socially-valued tools for doing a vital job. Maybe it's not reading in itself that is so valuable, maybe it's one further way that brains get exercised.

We do know that if reading doesn't develop then measured 'intelligences' stall; motivation plummets – and we can see how. The avid reader covers 500 times more information in a couple of days than an avoider of reading covers in a year. This processing of information links to higher level understandings. It's the difference between simple, linear, decoding of information and the ability to make connections across things; to make links; to see bigger pictures. Books may simply be a means to an end – but they can act as very effective means for large numbers of people.

We also know that English has 44 sounds with what seems like a thousand ways of spelling them. It takes an English child learning in a primary school

somewhere around 2-3 years to get to a reasonably fluent level of control of language. This compares with around one year in countries with a more structured, simpler language system. Processing the complexity of English is difficult – so we can expect that ‘disorders’ in processing is more common in this country. We should also expect a wider variation in rates with which children get to grips with the language. In this context, the variation may be wide and what is expected ‘by 5 ...’; ‘by 7 ...’ can only be broad guides rather than making precise sense.

We know, therefore, that having developed reading and writing skills for a number of years – within any group – some will have struggled but nearly everyone will have made substantial inroads. The national average score in the recently popular televised ‘Test the Nation’ was 60%. We are not that brilliant with our own language, but (as a nation) we can get by. If (again, as a nation) we want to get on rather than simply get by we need to crank up the overall level of language ability.

At the individual level, we know that we will have ‘spiky’ skills profiles – we will all have bits we do well and bits we do less well – that few people will be perfect; and that most of us ‘get by’ at various levels without the gaps affecting our daily lives too much.

We (because it’s all about development of individual people, in different contexts, over time) end up being more or less competent in the skills. However, within this variety there are some people who just don’t ‘get’ reading and writing: Not ‘can’t’; not ‘won’t’ – just ‘don’t’. In the way that I don’t get sport (I really don’t see the point of it); others don’t get music; others don’t get humility etc. ‘Don’t’ as in ‘don’t see the point’ of books, reading, writing.

Recent high profile statements by celebrities that they haven’t read a book led to outrage. To those who love books – for someone to declare that one doesn’t read is unthinkable.

So there’s a challenge for the book loving community to understand this difference – that for some people a book is just a book whilst for others a book is a doorway; a transport of delight etc.

But why do we regard reading and books as so important? We talked earlier about large numbers of young people making real gains in Birmingham – and we talked in terms of academic terms. We could have defined it in other ways e.g. social resilience terms. On this basis reading and writing enables people to be better able to deal with whatever life throws at them.

One root of this is a positive one – immersion in books/writing activities (- and discussing these with others) – builds social character. The other root is negative and stems from a logic that goes ‘Many prisoners have low reading levels ... people with low reading levels are more likely to end up in prison ... learning to read helps stop you going to prison’.

We know that you don't have to be good at reading and writing to end up as a celebrity; or rich; or healthy; or happy ... but we also know that those who are poor, unhappy, less involved in community activities etc are likely to be less confident readers and writers (from a national long-term tracking of a cohort of children born in the same week almost fifty years ago). It's not automatic – but it's a strong probability – that there are strong links between reading/writing activity above a certain level and a wide range of social gains. This is why reading and writing is being so heavily pushed forward at the moment.

Certainly major national institutions, beyond schools and libraries, are promoting reading and writing as everyday activities for large numbers of people. (Examples would be large numbers of Richard and Judy's 2½m daytime TV viewers taking up books as a result of the programme etc).

Reading, writing and other creative activities that require the brain to accommodate different ideas, to imagine different things, to broadly sweep across some mental landscapes at one time and to focus intently on minute detail at others – all of this not only produces some resiliencies in terms of confidence, ability to think about things, having a store of possible half-answers etc but also builds resilience for the future in terms of having multiple pathways in the brain so that if damage happens to one route the messages still get there by other means.

Just the very act of engaging with text can help to create this distribution of neural networks – but the simple (or sometimes not so simple in the case of the English language) technical skills of being able to read and write can only be a partial buffer to life. When the real problems come it may be not the functional abilities to read and write that save us, but the uses to which we have put those skills – the connections we have made between ideas from quite different sources; the extent to which we have knowledge distributed across a network not held in one power-centre; the capacity of systems to operate in different ways yet still get the required outcomes.

Much of what we have talked about so far has focused on the individual (alone or acting as an individual member of a group). Individual academic success; individual resilience ... if one follows the 'independent operator' route does it lead us to 'books as escape; as solace; as refuge from the world' (rather than resilience to take part in it). Does 'reader' and 'writer' then imply 'isolate' – 'geek' – 'anorak' ... the scribbler in his garret? Or does books and writing create reasons for people to come together. (As evidenced by events at this book festival). Are there communities of readers (beyond book clubs/readers groups); communities of writers (especially online?)? People who share and exchange books (even tenuously as 'book crossings'); writers who see themselves as part of a network across Birmingham? Or is all of this really a closed set of conversations between a closed group of people? – a reading and writing set – of little real relevance to the daily lives of people in most localities across the city; a set of literary activities that disconnect themselves from issues of housing, employment, health, safety, fly tipping/rubbish collection i.e. the strands of Birmingham's long term

community strategy, designed to bring about lasting change in neighbourhoods.

Is there a task to be done to create stronger links between some reading/writing/language activities and the broad concerns of community/neighbourhood improvement (without insisting that all new developments fit with specific aspects of disadvantage)? Does this include work to engage new sections of Birmingham; to be reading/writing 'evangelists'; to act as writing 'explorers' ... etc? ... and how far does this get beyond the 10-20 groups of 10-20 people (i.e. beyond 1 in 1000 adults) ... and beyond those who (in a recent survey) acquire a book to appear more intelligent, to reach 'book usage' not 'book ownership' ... to a position where language is seen as a lever for social improvement?

So to what extent, on the streets of Birmingham, are people already reading and writing? (Beyond schooling; beyond reading groups etc) – Simply using reading/writing as part of their everyday activity?

- In a survey of people on buses and in public places – large proportions were reading (newspapers; books – and a surprisingly wide range of books – on a variety of bus routes i.e. not just those through 'literary' areas of the city).
- More books are available for purchase in the city than ever before, through a wide range of more geographically dispersed outlets (including now being able to buy books in post offices, in supermarkets, on trains). With more books being able to be bought cheaply (via 3 for 2 offers; second one half price offer; via internet sites; via an increased number of charity shops etc)
- People reported reading for a wide range of reasons (because it's there; through custom and habit; recommended by a relative/friend; author loyalty 'read all the others' etc).

Reading was alive and well in Birmingham – but what of writing?

It all depends on what you mean by 'being a writer'? Most people can describe the reading they are doing and describe themselves as 'readers'; whereas many people can describe the writing they do yet few would consider themselves 'writers'. Even writers sometimes find it hard to define themselves. Miroslav Holub, a poet, wrote a poem called 'Interview with a Poet'. It asks of someone who says they are a poet how they know that they are. 'I have written a poem' – so you were a poet; 'I shall write another poem some day' – so you'll be a poet in the future etc.

Is a writer only really 'a writer' when they are actively writing?

Or when they have work published? (And where does that leave people who publish their own work on the internet? Or who write blogs that have wide and consistent readership?)

Or when they are known as writers. (I have written something – it has an ISBN number – copies are in the library and it's referred to in other books - but I'm not known as a writer). What about the artist who has assembled a

novel from collages of fragments of text cut from 1960s women's magazines (yes, because he word processed the story first then used the 'found text' to create the printed version)?

Or when they make a living from their writing? (Which most writers seldom do, needing to be teachers/librarians/civil servants etc as a main occupation).

Or are people writers simply when they define themselves as a writer – and, in this sense, the number of 'writers' is increasing as publications take more space for readers' contributions, or where (as with local history) readers contributions are the main focus, or where travel guides/websites are increasingly written by readers who have 'been there; done it; here's the top ten tips'.

And what of those whose job it is to write all day – people like public service officers turning out reports and minutes of meetings; or key people in voluntary and community groups? In what sense should they be seen as writers? One idea we had a couple of years ago was to see if there was any value in linking such 'writing officers' with 'established writers' to see if either could gain anything from the other. We didn't take it very far but maybe it could have led to annual plans in the style of James Joyce (... one year in the life of Birmingham seen through the eyes of a fictitious resident ...); or minutes of meetings written up in the style of Beckett's 'Waiting for Godot' ([Two people meet]: "Shall we change things?" "Yes, let's change things." – [Nothing happens – Next day: same two people meet]).

And do shifting cultures mean that what counts as 'real writing' shifts and changes, that writing fashions come and go. What is dismissed as 'personal scribble' at one time becomes 'accepted writing' at others. If at the moment we are seeing an 'express your inner hurt' trend – via daytime TV/Oprah Winfrey encounters – leading to an increased number of books written by people who had difficult childhoods – when does simple personal therapy writing become 'literature'?

If so many people are expressing themselves, via weblogs, (a new blog every second in this country) and via emails how far does this stay at the 'lowest' levels of gossip about others/insults about enemies/'dear diary' drivel – and when does it become elegant; highly readable; valuable etc – and who would know amongst the mass of slush that's out there? Is there a need for interpreters, sifters, pointers-and-guides-people who will pick out nuggets from the riverbed and set them aside for people to view if they wish – not as the traditional editor/critic function but more as a 'look at what's out there – isn't this bit interesting' function. Not spotting the professional writing that can be potentially selected for publication, but loosely sifting already published interesting writing from the rest.

All of this, of course, is highly value-laden. What counts as 'interesting'? Who decides what is worth listing elsewhere? Remember - what was once dismissed as everyday 'jottings' through the Mass Observation exercise now forms a valuable archive of historical/social material.

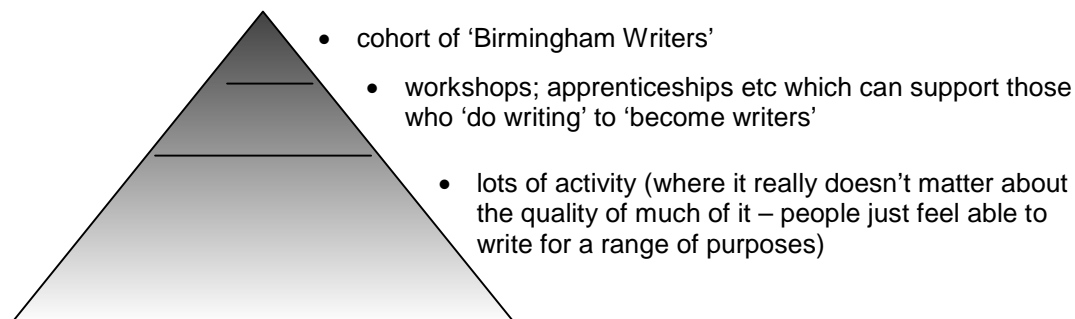
If writing is so democratised that anyone can contribute anything are there any 'authoritative' versions of content?

One classic example of this is Wikipedia – an online encyclopaedia written and edited by its users – all part of the 'we set up a framework: you populate it with content for us'. But what if some of the content is inaccurate – who moderates content when it is open for anyone to contribute whatever they think is correct? Are the views of the 'amateur' as valid as those of the 'expert' in a democratic writing community? Is it enough to say that any content will automatically be read and commented on/corrected by other user-creators? If you follow the logic put forward in 'The Wisdom of Crowds' (by James Surowiecki) then you can believe that mass content from 'amateurs' will collectively give a truer answer than elite content from 'experts'.

If writing has become more 'sexy' and more democratic/popular then can anyone be a writer – no matter what the quality is like?

In all of these judgements about whether some writings are more worth having than others ... is there an optimum amount of writing/writers that Birmingham 'needs'?

In the city at the moment we have yet another triangle of activity:



There is a recognised cohort of 'Birmingham writers' active in the city at the moment. There is a larger than ever number of people taking part in writing classes and workshops. What needs more strength, and attention, is the bridge that enables talent amongst 'everyday writers' to be supported and challenged – the creation of future writers through the disciplines of authorship.

Even when each of the three layers is as strong as it gets, we have to think about creating the links between the layers – what encourages people to move to another level; and guarantees them support.

Considering what counts as 'recognised' writing; setting out triangular hierarchies as above moves us on in considering selection, censorship and other difficult areas.

Maybe an answer, and one that Birmingham needs to give more attention to, is the creation of the capacity of self-criticism in all those writers on the bottom section of the earlier triangle. The creation of a wide awareness that there is a difference between writing that is 'just done' and the necessity to think about constant revision, restyling, further rewriting, that brings in the craft skills of 'being a writer'. This requires the encouragement of people who 'just write' to 'be writers' and to create many more outlets for the craft skills to become more widely known, able to be practiced and scaffolded/apprenticed/mentored. This means thought being given to a balance between fostering writing and encouraging a level of discipline amongst people who want to write for a purpose beyond themselves. If there is the same volume of activity given over to this 'writer development' as to reader development then we would see much more writing done in public than we do at the moment. There would be much more of a culture of writing – writing families, writing communities etc as well as writing individuals. People would exchange pieces of writing as easily as they exchange books (and would feel as comfortable commenting on each other's writing as they feel easy about opinions on books). Writing would be more of a community (i.e. out-in-the-open not necessarily 'communal') activity than it is at the moment and maybe we would be creating a wider and more substantial range of Birmingham writers than already exists at the moment.

Coming towards the end of this talk I'd like to try to pencil in some of the connections that have been made. We have, earlier, tracked developments through some social leaps:

- 'writing' era, where people turned up to hear the expert/interpreter/priest/lawyer expound on what life was about – people listened to others; there was a hierarchy; rules were clearly listed; belief systems were enshrined in the rules and regulations etc.
- 'printing' era, where there was consumption of ideas through mass reading (hinging on literacy); where discussions of other people's ideas took place; with the educated contributing sufficiently to the pot of ideas for there to be a general Enlightenment; reformation/revolution of ways of thinking about the world and people's place within it; people having to decide for themselves in times of uncertainty
- towards a 'digitised' era, where the populous are equal producers and consumers; where expert/authority can be bypassed; where fragments have to be sifted and judgements made about 'value'/'worthlessness'/'transience'/'significant' and son on.

Linking this to the ideas about brain development and brain capability being structured and renovated by styles of use – we need to recognise that we now have a mass of (in general) younger people whose exposure to different ways of communicating means that they are not just more familiar with

technologies; not just speakers of a technical language/users of abbreviations and codes; not just people who act differently in response to single incidents (I look in a dictionary – they google for meanings; I will visit a station to pick up a printed railway timetable that shows me the theoretical times for trains to London – they visit a website linked to the real-time arrivals and departures board at the station and read off the real situation).

Once this ‘new-style-of-thinking’ mass becomes a critical mass then will we slide forward into the possibility of new sets of ways of seeing the world and the place of people in it – a digitised enlightenment? – a new set of ways of being and thinking? (Or will it all sink back down as ecology takes over – as the environmentalists prove to be right all along?) And will it increasingly be the case that ‘bookish’ enthusiasts will no longer understand the new concepts, will be unable to spot the new possibilities – and ‘getting books’ won’t be a big emphasis. The new emphases will be on creative thinking; seeing relationships; systems-change; open-operations not closed-operations; loose frameworks (‘colour it in your own way’) not prescribed recipes; and so on – but still with a requirement of sophistication in being able to produce and consume text i.e. reading and writing still being crucial underpinnings to progress.

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So, finally, at the end of the last stroke of midnight – on the last echo of ‘now’ – do we end up concluding:

- ❑ that although reading and writing appear to have a long history, on a world scale are we still newcomers to this communication – stumbling beginners who have so much further to take it all?
- ❑ that younger people may be more familiar with a wide range of forms of communication – whilst schools focus more on certain traditional forms.
- ❑ that whilst reading/writing may begin to appear outmoded by technology, use of that technology still relies on higher level functional literacy skills. We also may need to remember that current ‘new’ technologies (all this anyone putting anything on the web) may soon implode under the weight of the trivia that it is being increasingly asked to carry; or that it may, itself, soon be replaced by a whole new technological ‘unknown’ with a set of new options for reading and writing.
- ❑ that there are now sufficient ways to scaffold the original production of text (predictive text; writing frames; spell checks etc etc) for the emphasis to be put on the skills of drafting and redrafting, designing flow and shape; selection and discarding; linking ideas and fragments i.e. the skills of ‘being a writer’ rather than functionally ‘doing writing’ – the notion of ‘composing’ (as in bringing a wide range of things to bear on a basic set of notations to produce



something that has style, rhythm, melody, emotion ...). Maybe we need to reinvent the word 'compositions'.

- ❑ that reading and writing may simply be a means to a number of ends (e.g. social and intellectual resiliencies) that can be reached in other ways, rather than being ends in themselves. The capacity to read, write and communicate (at least to a level of adequacy) accelerates progress towards those ends. Reading and writing, for most people, are some of the best tools we have for this resilience-building at this time – but other tools may work better for those people who simply do not 'get' books.
- ❑ that the production and consumption of reading and writing can be done in ways that open up society or can close it down. Reading and writing could be for the many or for the few – and we have reached a stage where it is increasingly open to nearly all, with all the disagreements about values, cultures, purposes etc that come with this; and a need to resolve such disagreements without closing things down.
- ❑ that, although they bring great social gains, we shouldn't overestimate the power of reading and writing. Despite all of our reading; despite all those millions of words written; despite all that had been spoken of and listened to – was any of it of real value, or was it a facet of activity that barely mattered, when tested by hurricane floodings of cities; by genocides or wars; by daily inhumanities and indignities – or was the capacity to read, write and communicate so fundamental to the thinking patterns of people that it was, in reality, part of the solutions in the face of overwhelming events?
- ❑ that whilst reading holds a privileged position in our culture, reading relies upon the quality of writing – with which we have a much more ambiguous cultural relationship. Writer/writing development deserves more attention; as does oracy. Although 'speaking' skills have made a bit of a resurgence recently, the real power of storymaking and storytelling have yet to be fully realised in a modern context dominated by text, abbreviations, lists, PowerPoint presentations etc – and I'm thinking here as much of the untapped power of telling factual stories (e.g. the 'story' of Birmingham's recent developments) as the entertainment value of 'fictional' storytelling.
- ❑ that Birmingham can do more to encourage more people to do more writing (of all kinds, at all ages, for all purposes) and could give more thought to the structured 'scaffolding' support that people might need in order to go on to further develop specific writing skills; that there should be ladders and escalators to assist people to move from 'doing writing' to 'being writers' – and that these are

support mechanisms are likely to have some web-based components.

- ❑ that Birmingham has, over a ten year period, built up an impressive array of linked developments which, whilst they may appear before us as 'projects', are all part of a longer-term drive to change the way people do their jobs, the opportunities available across the city, the way systems operate with and for people, and the improved resilience and capabilities of large numbers of people who live or work in this city. Too often, however, these developments have been presented in personalised and over-expansive ways; simply as projects rather than as contributions to a larger set of common developments for people in the city. (This talk is one small attempt to bring some of that bigger picture together).
  
- ❑ that Birmingham is doing well, and recognises that there is further to go – but that further substantial progress may well require different ways of operating and changed ways of thinking.

G Bateson 2005