



Digital consumers: information seeking, reading, trustworthiness, social media, openness and more...

Background

- Been studying virtual scholars/researchers for 15 years and lots of people thought we were mad talking about *bouncing*, *promiscuity*, *fast bag pick-up*, *reading 'lite'* and *digital consumers*. But need new words for describing a new environment and ways
- Talk built on huge evidence base: mainly results of studying the usage logs of millions of digital consumers on many library/publisher platforms. Never known so much about how people find, read and use information (and how information systems fits into all this). Based on what people *do* in digital space; not what they *say* they did or *wished* they did. Have problems recalling what they did in digital space (partly because cannot remember and partly because they would rather not tell).
- Equipped with the knowledge of the new digital footfalls we have conducted major international surveys to get into the nitty gritty (authority, trust, reputation, generational change)

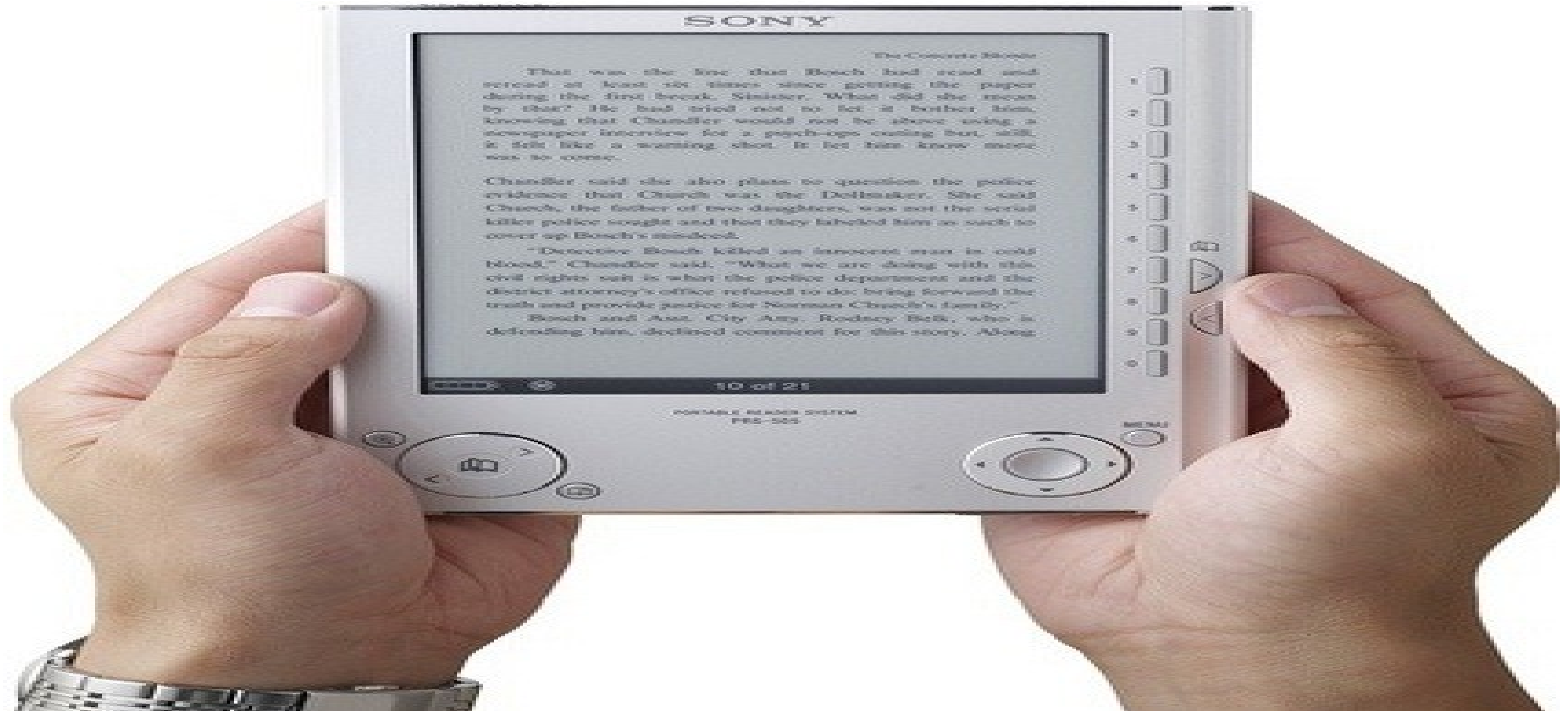
Results an eye opener, a wake-up call

- Results show user behaviour and perceptions not quite what we once thought – re-write the textbooks!
- The digital is *rewiring* people's brains so going to have to understand and adapt to it. We are not talking about dis-functional behaviour here! It not just behavioural, its physical too.
- Talk timely as digital environment being hit by the 'Perfect Storm' – whipped up by the 'waves' of smartphones, social media, openness (open science) and the Google Generation. Things might have got out of hand!
- Digital transition and disintermediation (DIY) main behavioural drivers and we have a few more rounds to come (smartphones, social media); we live in transitional times. An Internet year is just 7 weeks...

A further thought on disintermediation and decoupling for information professionals

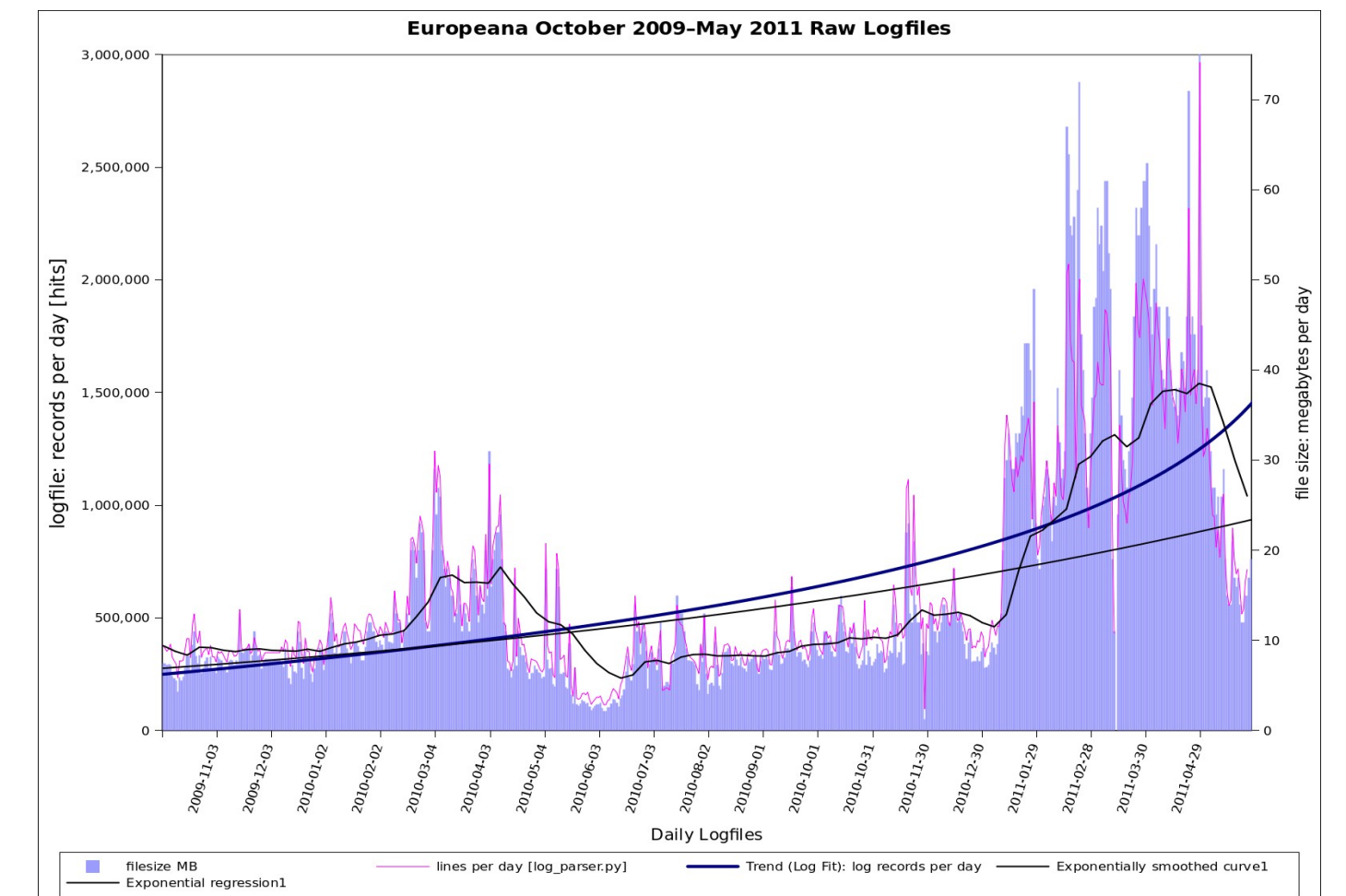
- **Digital transition** creates unbelievable access to everything and brings search and evaluative skills to all aspects of life
- **Disintermediation** is a consequence and results in fast and massive choice, courtesy of Google. We are all librarians (scholars, reporters etc.) now
- Digital transition much further to go what with the likes of **mobile devices, e-books and open data**
- The digital transition means behaviour goes on **remotely and anonymously**
- Consequence is librarians, teachers etc. **know less and less about more and more** users of their services
- This leads to **decoupling** and, possibly, professional and subject melt down

So, let's start with evidence of how do people behave in the virtual space?



1. Very 'active', but much activity down to robots

- Staggering volumes of activity (numbers don't mean anything anymore)
- Access and disintermediation the main drivers:
 - a) new users drawn into information net. All connected to big fat information pipe. Put it up there and it **will** be viewed.
 - b) existing users can search more freely & flexibly - 24/7 anywhere and on the move
- Huge growth also down to:
 - a) more digitization and visibility;
 - b) preference for everything digital;
 - c) wireless/broadband;
 - e) mobile devices - platform of choice for accessing web content
- Lots of 'noise' (didn't mean to use) and robots/crawlers - account for 80-90% of activity. Robots good - the new intermediaries?



2. Bounce a lot

- Most people view only 1-2 pages from thousands available; 3 is many
- Around 40% do not come back – they are promiscuous
- ‘One-shots’ abound (one visit, on page)
- Bounce because of:
 - search engine searching (lists) and links (enjoined to go elsewhere)
 - massive and changing choice
 - so much rubbish out there
 - ‘acceptance of failure’ – result of pragmatism, lack of time & overload
 - poor retrieval skills (2.2 words per query and first page up)
 - leave memories in cyberspace, which adds to ‘churn’ rate
 - direct result of end-user checking
 - effective searching strategy



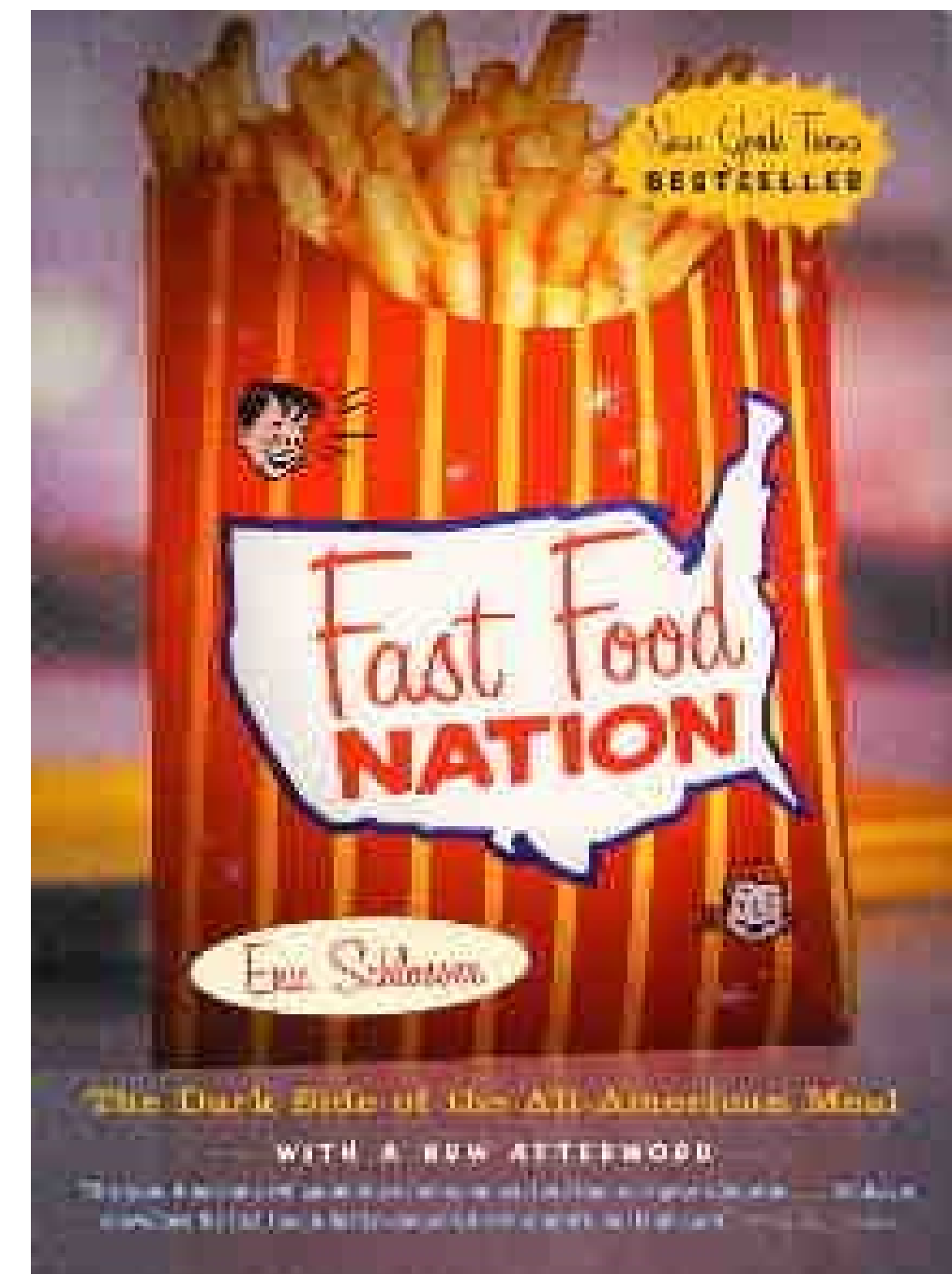
3. The horizontal has replaced the vertical

- In information seeking terms we 'skitter' (moving rapidly along a surface, with frequent light contacts or changes of direction)
- 'Power browse', drive-thru titles, headings, links & summaries at a fast rate. Charge for abstracts and give away PDFs!
- Building digital motorways through and between content means movement itself pleasurable...might be something (more) interesting around the corner. Lots of things never connected before - enter serendipity and nostalgia
- Hence popularity of third party sites, like Google Scholar
- And then there is multi-tasking - always more pleasurable to do several things at once rather than one thing
- Don't do 'deep' or long anymore (more on this later)



a. 4. Fast information

- As in life, the (information) snack/bite has replaced the three course meal (whole book/article)
- Been conditioned by emailing, text messaging, tweeting and PowerPoint to like/produce/want/need fast shots of information
- 'Fast bag pick-up' the gold standard
- Don't come in the front door; deep dive
- Web designers & content providers thought we would dwell and knock on the front door. Do you remember site-stickiness?
- Avoid carefully-crafted discovery systems. Love Google; even the very best researchers. Library discovery systems now ape Google

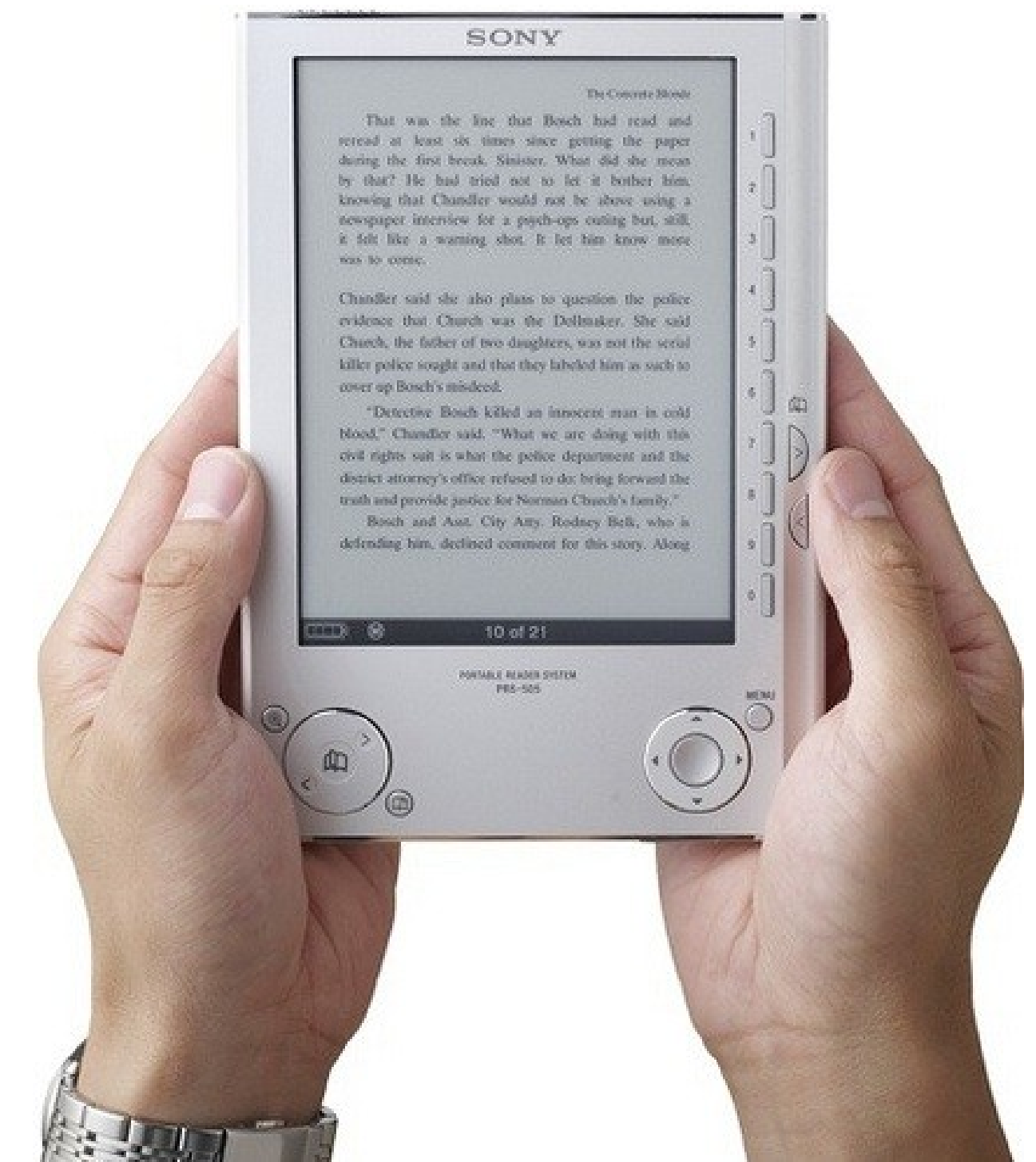


5. Viewing has replaced reading

Nobody does much reading or not what is traditionally thought to be reading (reading whole documents). A read can mean 10-15% of a doc

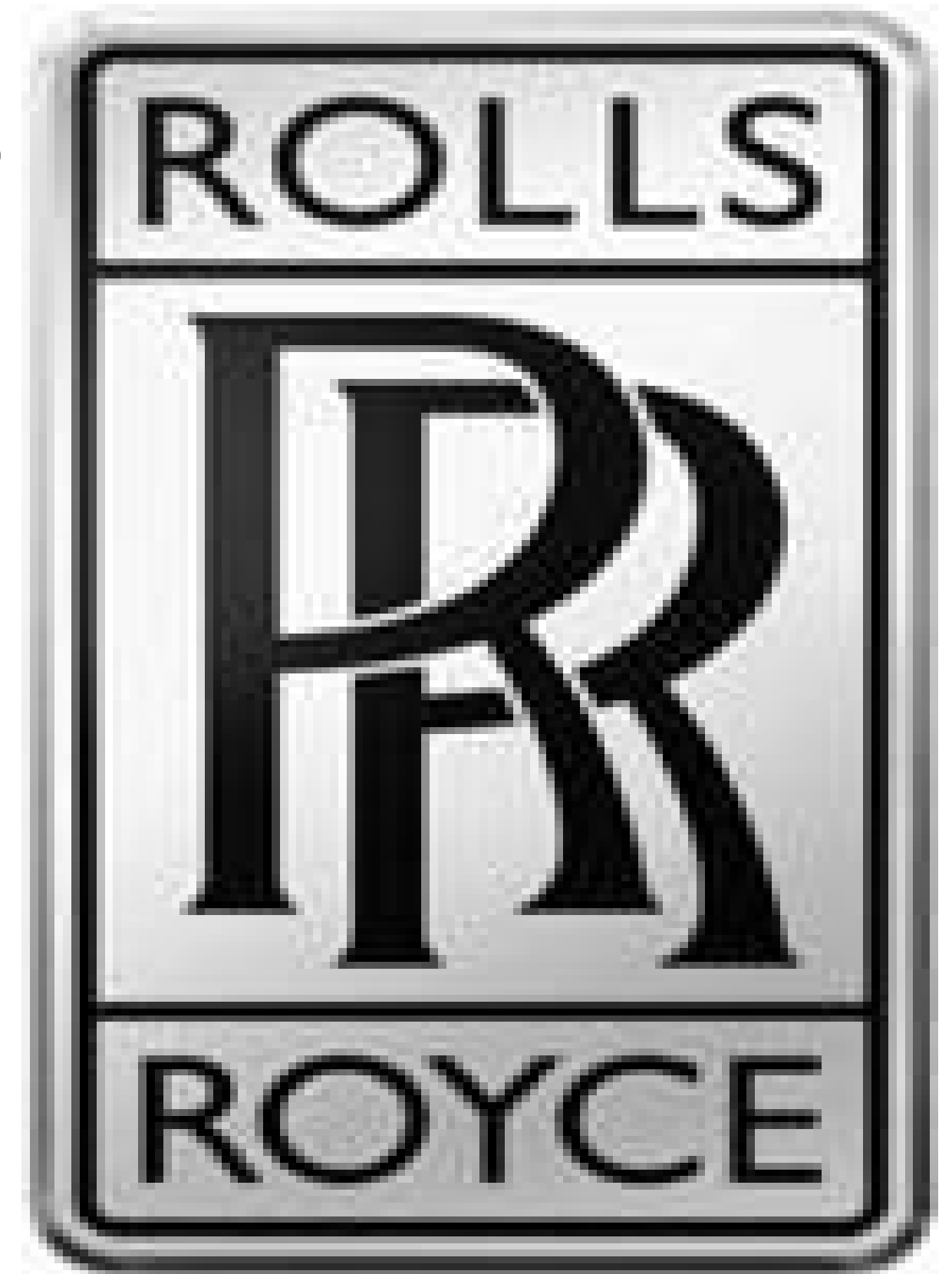
Logs tell us:

- People seem to go online to avoid reading;
- Only a few minutes spent on a visit; 15 minutes is a very long time;
- If it is an article then 3-4 minutes will be spent on it;
- Shorter articles have much bigger chance of being viewed;
- Abstracts have never been so popular
- If article long, summary will be read or it will be downloaded and squirreled away for another day (when it will not be read!). Something we call 'digital osmosis'
- We spend more time (dwell) on visual pages/sites. Like video
- Never wanted it all - batch processed, no choice



6. Assessing trust and authority difficult

- Huge choice, overload, so much churn, no intermediaries to help, and so many players! Means responsibility & authority almost impossible to establish in cyberspace. Don't even know whose information it is!
- So how to choose? First ones up (usually Wikipedia), by cross-comparison (OK if you know field); ask a friend via Facebook or twitter (OK assuming they know) or use a trust proxy (number of hits/citations/likes). Crowd sourcing challenging peer review in places
- Historically trust signified by 'established x years'; probably works the opposite way now
- Also what you think is a trusted brand is not necessarily what other people think. Younger they are less likely to recognise traditional brands, like publishers. Tesco! Google once laughed at search tool of choice.



Game changers 1: the Google Generation (born digital)

- Where CIBER came in, worries about what young were up to, carrying that into adulthood. So how do they behave:
 - Have greatest appetite for fast information and skittering
 - Quickest searchers, spend time on a visit – fraction of time spent by adults.
 - But least confident about their answers. Lack of confidence explained by their behaviour – first one up, view fewer pages and domains and do fewer searches. First past the post approach endemic.
 - Queries much closer textually to questions posed, making them, not just fast food generation, but also `cut and paste' generation. As for multitasking, at which they are supposed to excel, they do it a lot, but not very well.
 - Young fast forwarded from a world where the focus was on knowing one big thing well to a world where you know many things, but not very well.



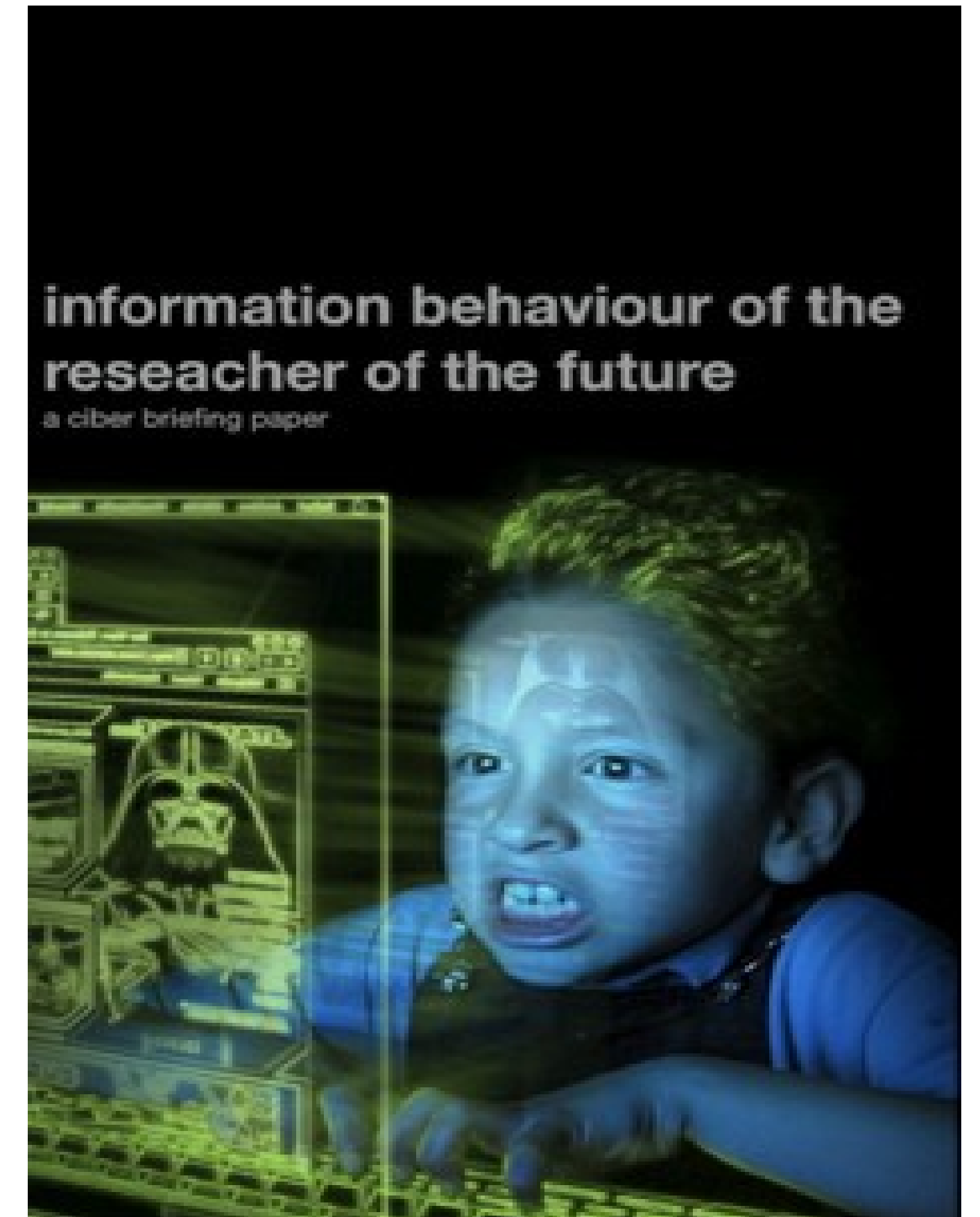
Game changers 2: smartphones

Google Generation (and the rest of us) have been empowered by a mobile device (smartphone/tablet) that is taking a form of behaviour regarded as extreme to a completely different level and may bury many of our institutions and belief systems with it. The end of culture as we know it!

While first transition, from physical to digital, transformed the way we seek, read, trust and consume information, the environment in which we conduct these activities had not really changed – it was still in the library or office, and on a device primarily designed for the desk/office bound

However, information behaviour no longer mediated or conditioned by the office or library but by the street, coffee shop or home. And time-shifted.

Another change: mobile devices not computational devices but access devices; also social, personal, cool and massively popular. A very heady cocktail!

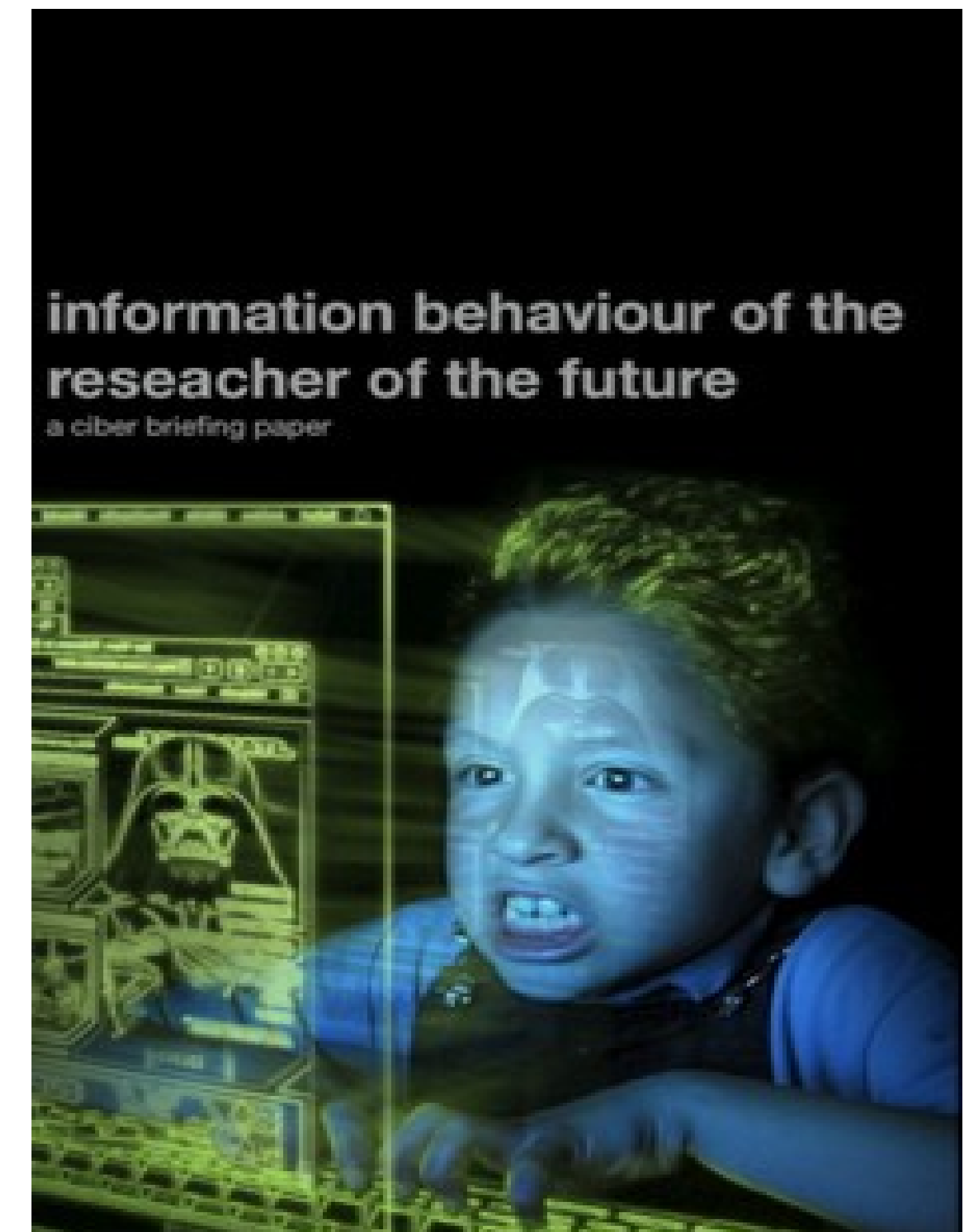


Game changers 2: smartphones

- Not surprisingly:
 - Mobile use more "personal" and less "professional". It happens in the evening and at weekends; occurs in the home or anywhere but the office.
 - Information 'lite'. Compared to PC/laptop visits typically shorter, less interactive, less content consumed and less likely to lead to satisfaction and return. More one-shots.
 - Big differences between devices, with iPad delivering similar behaviour to the PC and the Blackberry the most extreme 'lite' behaviour

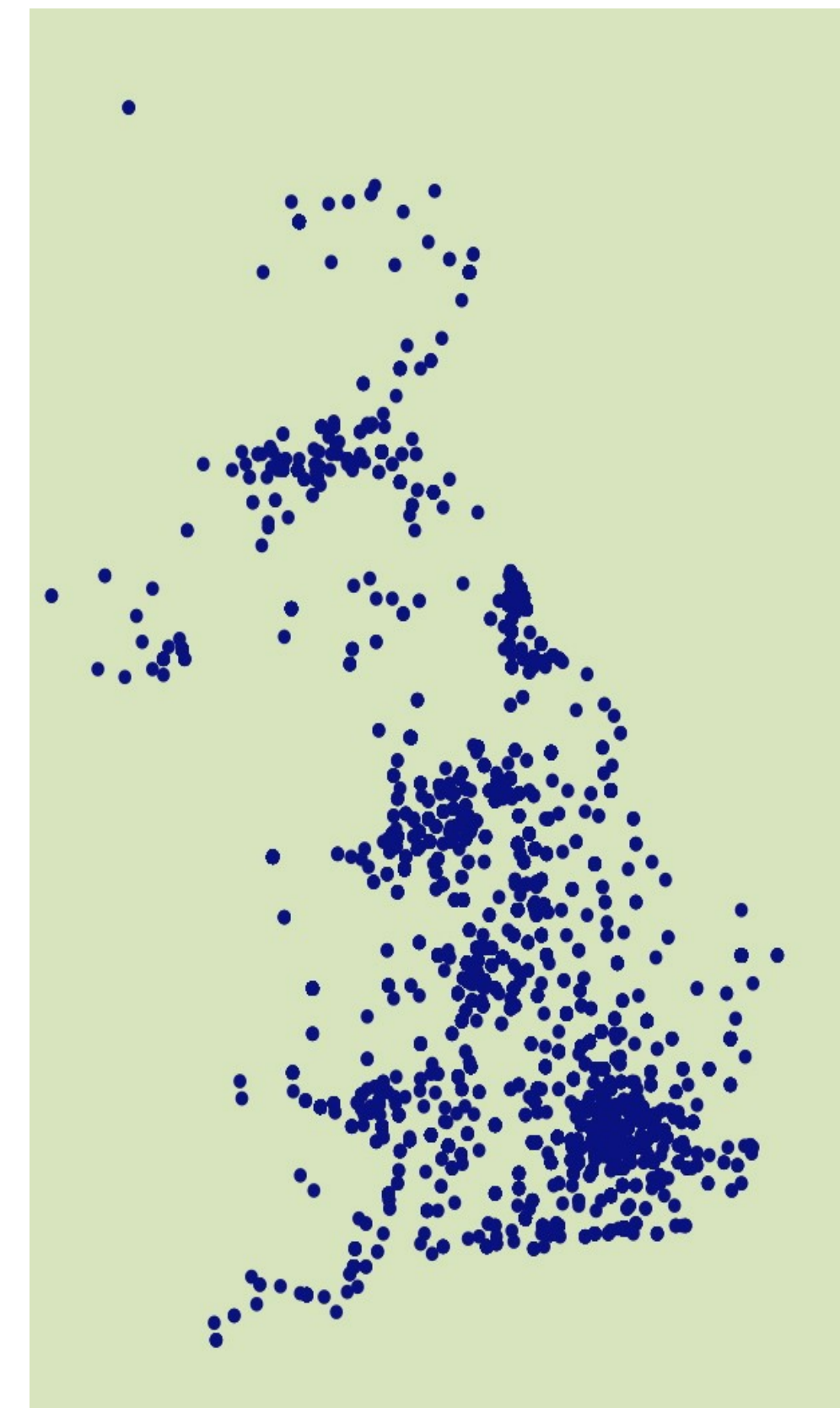
According to industry estimates the mobile device is the main platform for searching the web, so not talking about a minority activity

Have come a very long way in a very short period of time! It was not very long ago that libraries banned the mobile and now the mobile is the library!



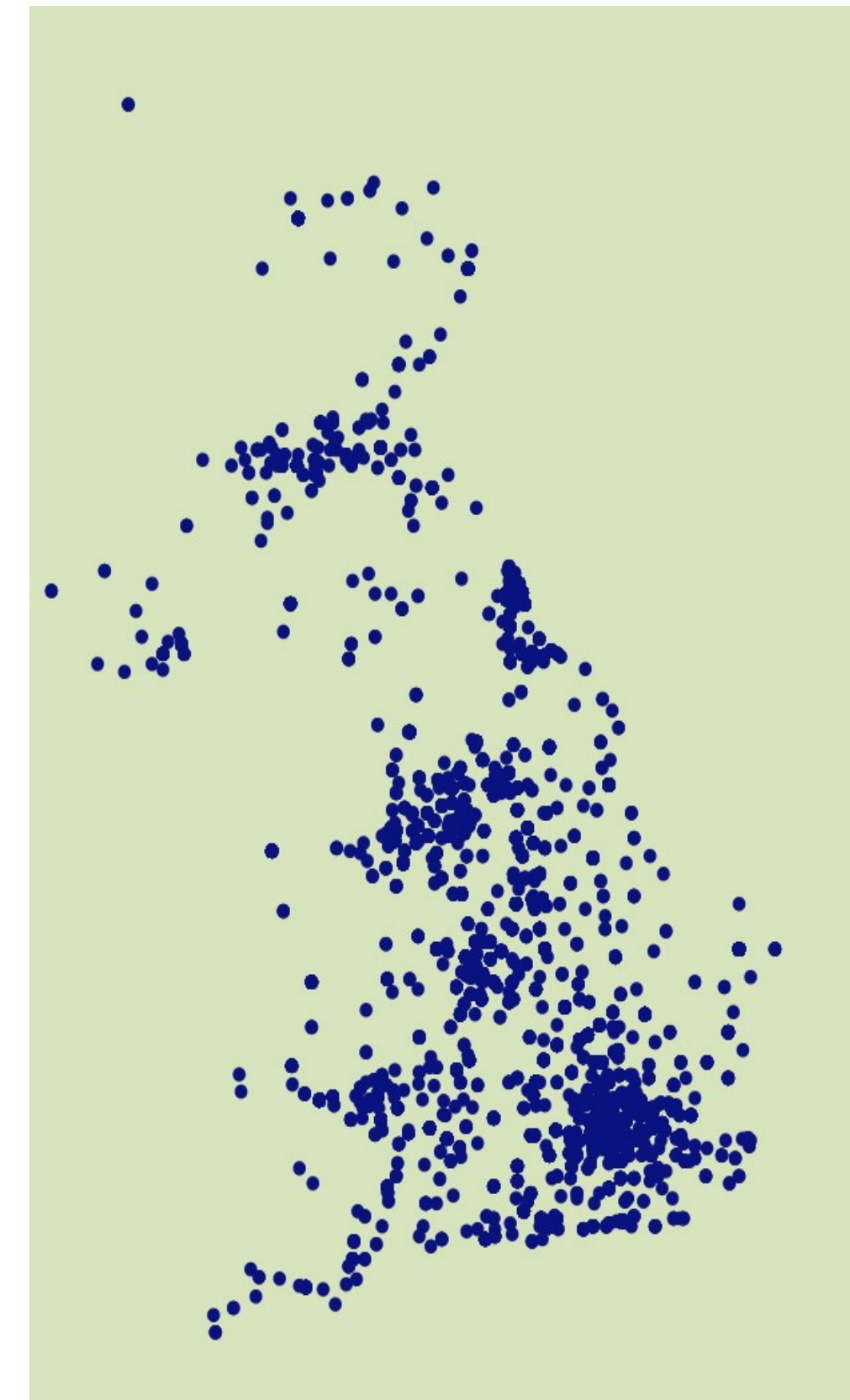
Game changers 3. Social media

- Having an impact on all aspects of research process, especially among young researchers
- Perceived benefits:
 - Ability to **communicate** quickly & effectively with diverse, remote audiences & wider public; great on self-promotion of scholarly outputs.
 - All about **building online communities and collaboration**
 - Creating new **data collection chances** (but validity and reliability problems)
 - Obtain **new ideas** / new takes on things and stimulation;
 - Increase **citations** as a consequence of providing greater digital visibility
 - Provides **alternative research space** where young researchers and those from developing countries can shine (a parallel scholarly universe).
 - Challenges **old concepts of trust** (blind peer review). Distrust of anonymity of peer review; openness most important; reach and connectivity new research goals.
- SM users more likely to use smartphones – compounds/accelerates changes in behaviour



Game changers 4. open science

- Barriers and protectionism down. Free trade information world.
- Encouraged to share, make data available, provide free and open access to material, make peer review open. Everyone and everything counts
- We are all scientists/scholars now. Encourage citizen scientists to collaborate
- Open access an interesting example of what happens
- Give reputational merit for loads of things, like posting, sharing and count likes and followers
- Authority questions and 'Hippy Science'



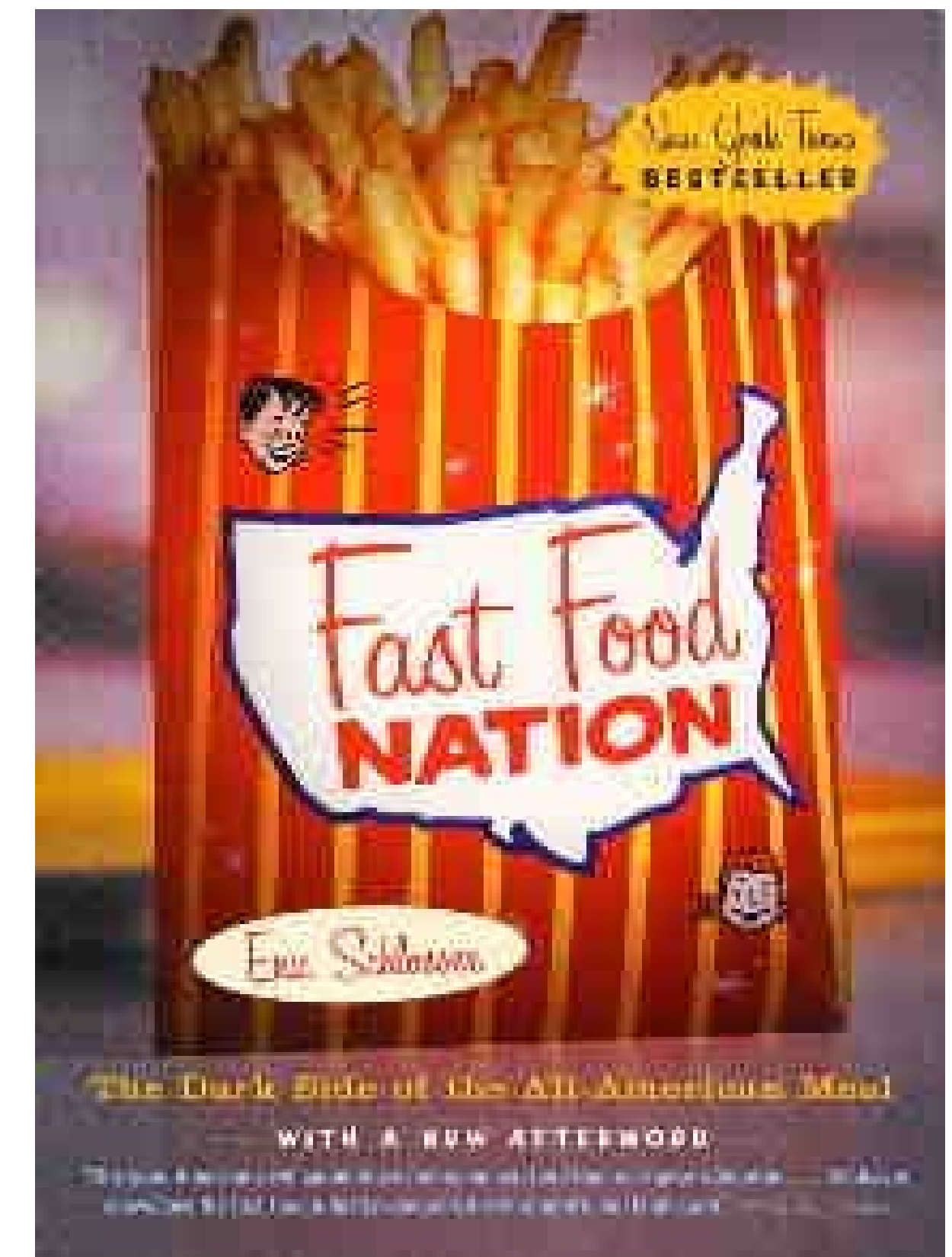
Big issues and reflections

- Neurologists say digital behaviour changes pattern of connections in brain – introducing new ones/dispensing with old ones; young brains rewire quickly
- Brain gets endorphin rush for finding information. So skittering could impact negatively on established skills as it chips away at capacity to concentrate & contemplate. Digital makes us stupid! Don't bother to remember (memory shrinking)!
- *Propensity to rush, rely on point-and-click, first-up-on-Google answers, along with unwillingness to wrestle with uncertainties and an inability to evaluate information, could keep us stuck on surface of 'information age'; not fully benefiting from 'always on' information*
- Writing been on wall for years about lack of reflective reading but lulled into complacency by sheer amount of 'activity' taking place in cyberspace
- Dominance of power browsing or reading 'lite'. Even kicking conversation into the long grass



Big issues and reflections (2)

- Maybe McLuhan's universe of linear exposition, quiet contemplation, disciplined reading and study is an ideal which we all bought into and developed services around. But...
- Maybe always wanted to skitter and power browse and did so when we could (out of view). Difference now is that opportunities for skittering are legion and this creates more skittering and pace is not letting-up (twitter)
- Information literacy issues.
- Just a possibility heading for a plane crash (Google Generation about to land) and who is going to ensure benefit fully from the digital information revolution? Teachers, librarians, parents, government or Google?



BBC Virtual Revolution Experiment (2010)

- Initial live television test at UCL in the Science Library
- Then run out on BBC website to global audience - 100,000+ responses
- Sought to characterise and evaluate information seeking and usage behaviour by tracking what people did online and relating it to demographic background (age particularly), working memory and multi-tasking ability.
- On the basis of their performance people were assigned a web animal which fitted their behavioural style. "The fox knows many things, but the hedgehog knows one big thing".
- Still to process all the data and using pilot data here to illustrate what we will be finding. Can you use the approach - marketing/design people can?

BBC animal experiment

- Eight animal types used, for instance:
- *WEB FOX. Web Foxes are good at finding information quickly. They are highly social, maintaining complex relationships with the other members of their social group, often using social networks, or other sites whose content is created by its users, as sources of information. Web Foxes are multi-taskers, able to do several things at the same time. The pilot study found that Web Foxes tend to be younger (16-24), less experienced web users.*

