



Information Seeking and Reading Behaviour of the Virtual Researcher

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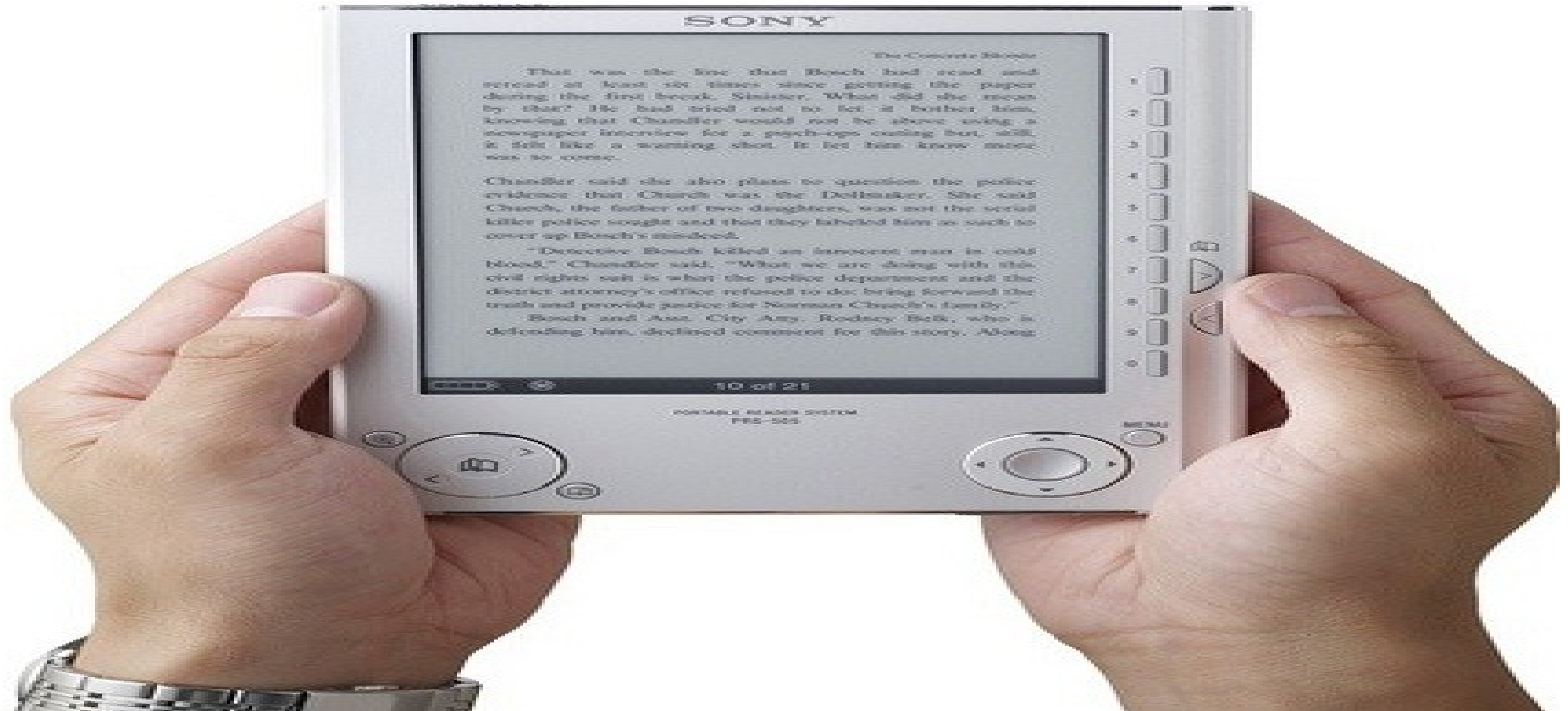
Background

- CIBER studying virtual researcher for 10 years and a lot of people thought we were bonkers talking about *bouncing, promiscuity, fast bag pick-up, reading 'lite' and digital consumers*
- Thanks to Google Analytics, COUNTER not so much now. But while OK counting use lagging behind making sense of it all developing a vocabulary/assessing outcomes
- Talk built on huge evidence base; result of TEN years studying millions of virtual scholars. Never known so much about how researchers find and use things.
- Based on evidence-base of what researchers *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 genuinely cannot remember and partly because they would rather not tell you*)
- Talk timely as changing environment being hit by the 'Perfect Storm' – whipped up by smartphones, social media and the Google Generation. Things could get out of hand for publishers, researchers and librarians.

Become voyeurs of the digital environment

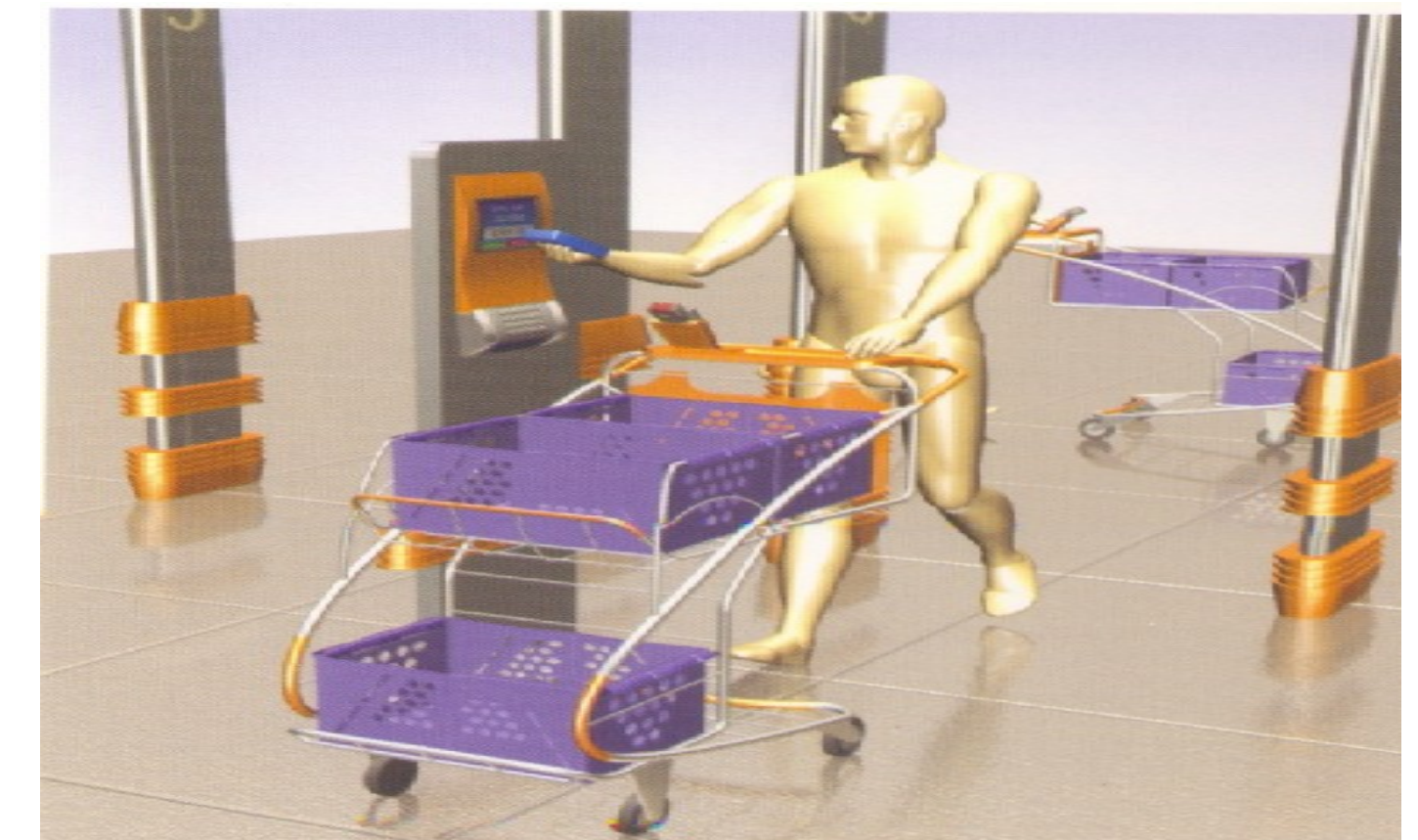
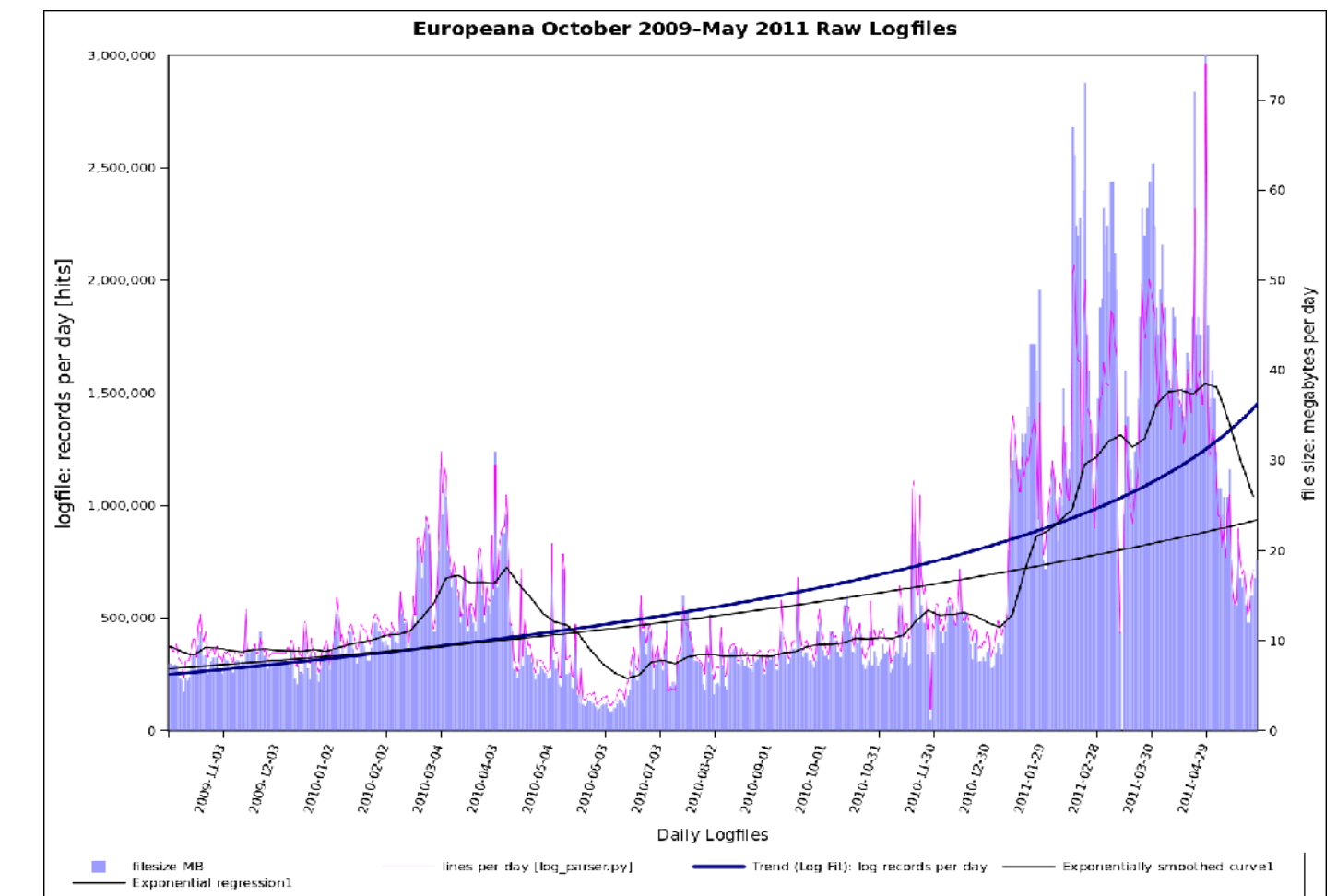
- Need non-intrusive, real-time methodology to study changing behaviour in anonymous, remote virtual space. Users leave behind digital footprints when visiting a website via mobile, personal computer, touch screen kiosk and digital television
- Make sense of footprints by turning *activity* represented in logs into *usage*; then stitch together to form patterns of behaviour; then, with the help of surveys/demographic datasets, turn *usage* into *users* and then '*sales*', *satisfaction*, *outcomes* and *KPIs*.
- Resultant data show user behaviour not quite what we might have thought/planned for
- Digital transition and disintermediation (DIY) main behavioural drivers and a few more rounds to come; we live in transitional times
- 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.

So how do researchers behave in the virtual space?



1. Very active, but much activity down to robots

- Staggering volumes of activity
- 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 used.
 - b) existing users can search more freely & flexibly – 24/7 anywhere
- Huge growth * down to:
 - a) more digitization and visibility; b) preference for everything digital; c) India and China; d) wireless/broadband; e) mobile devices – platform of choice for accessing web content in two years
- Lots of ‘noise’ (didn’t mean to use) and robots/crawlers - account for 80-90% of activity. Robots good - the new intermediaries? Drive human traffic**.



2. Bounce a lot

- Most people view only 1-2 pages from thousands available; 3 is a lot
- Around 40% do not come back – they are promiscuous
- ‘One-shots’ abound (one visit, on page)
- Bounce because of:
 - search engine searching (big lists) and links (constantly 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 on Google)
 - leave memories in cyberspace, which adds to ‘churn’ rate
 - direct result of end-user checking.



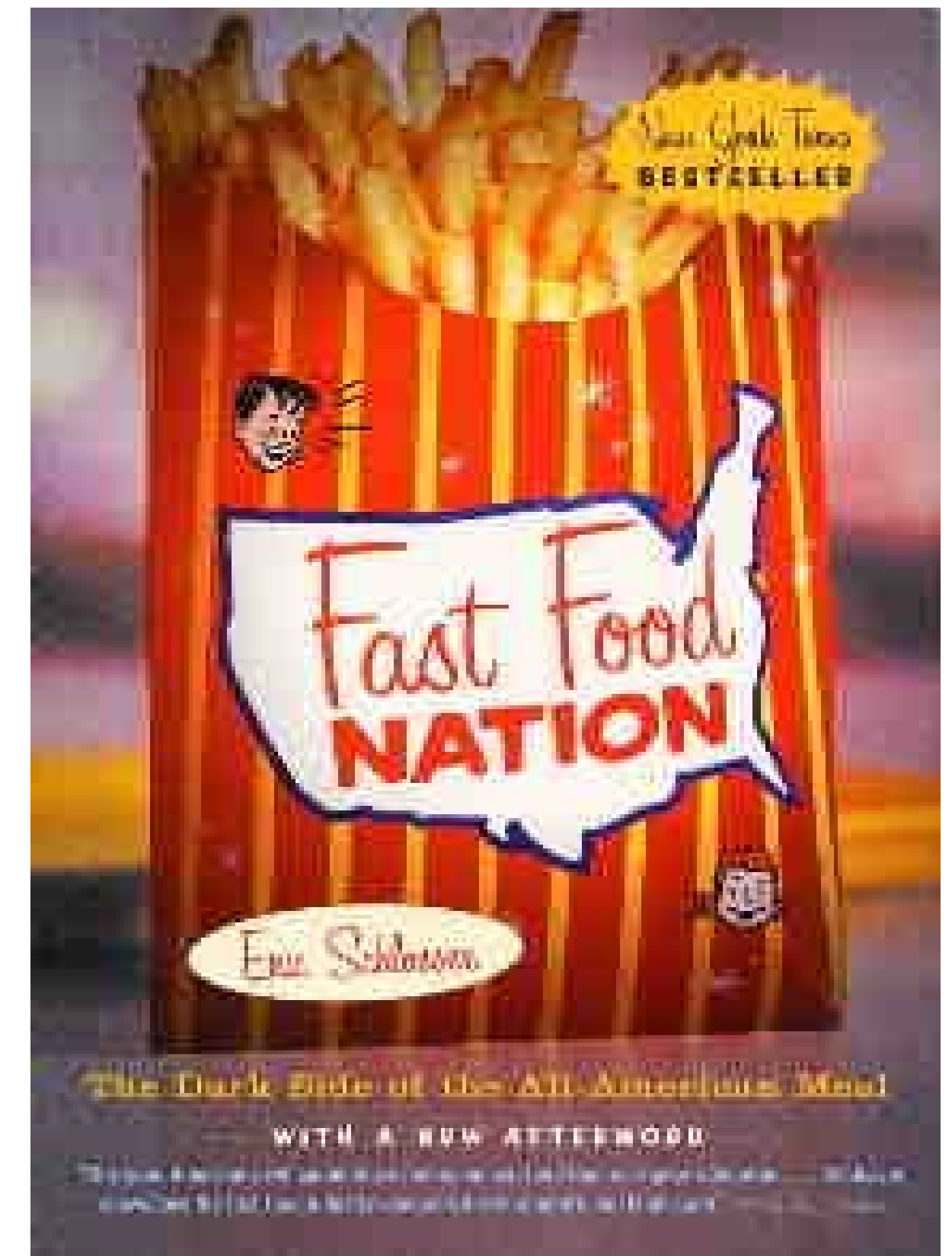
3. The horizontal has replaced the vertical

- 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 PMC
- And then there is multi-tasking – always more pleasurable to do several things at once rather than one thing
- Don't do 'deep' 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 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

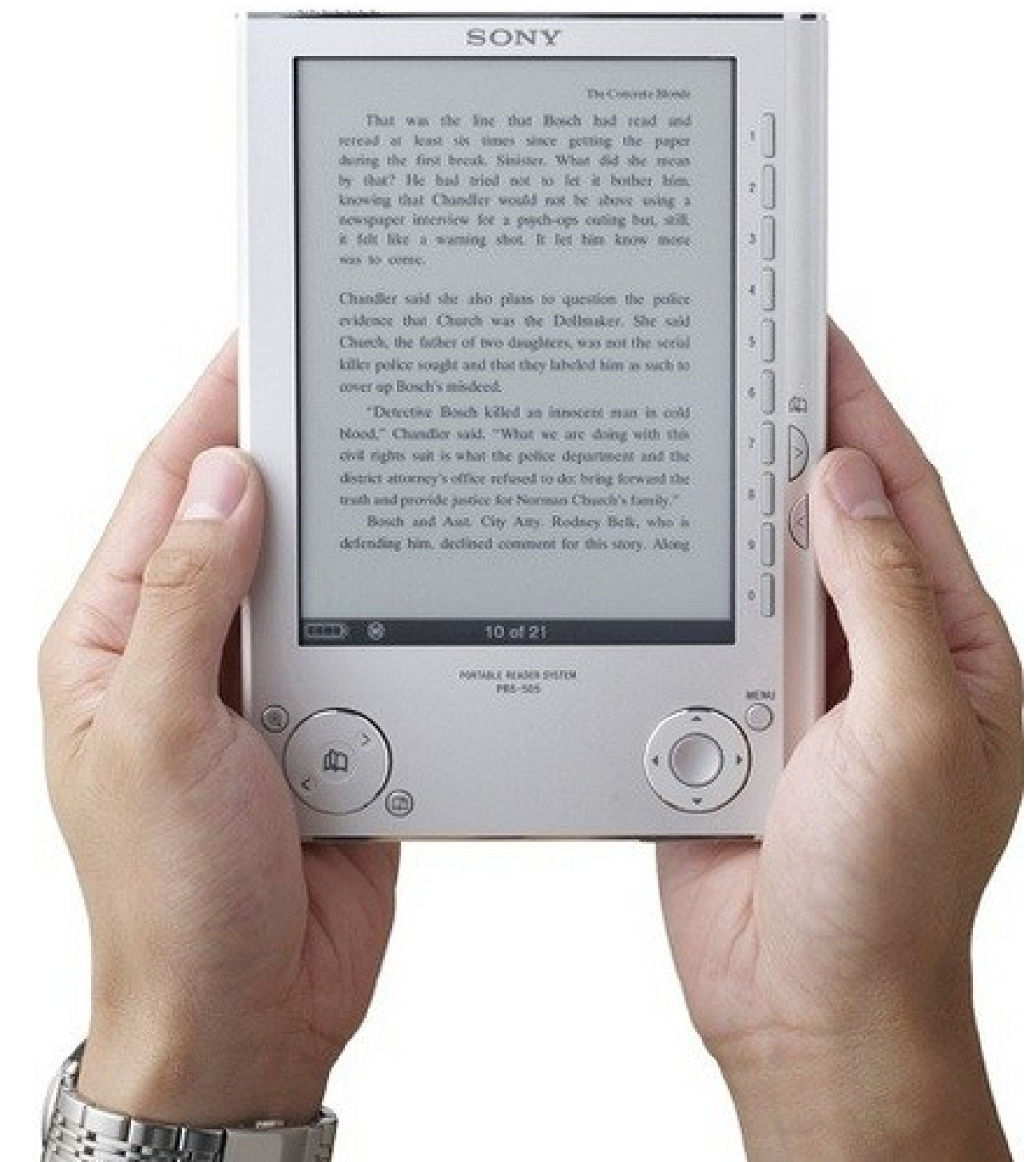


5. Viewing has replaced reading

No shock then nobody in this environment does much reading or certainly not what is traditionally thought to be reading (reading whole documents)

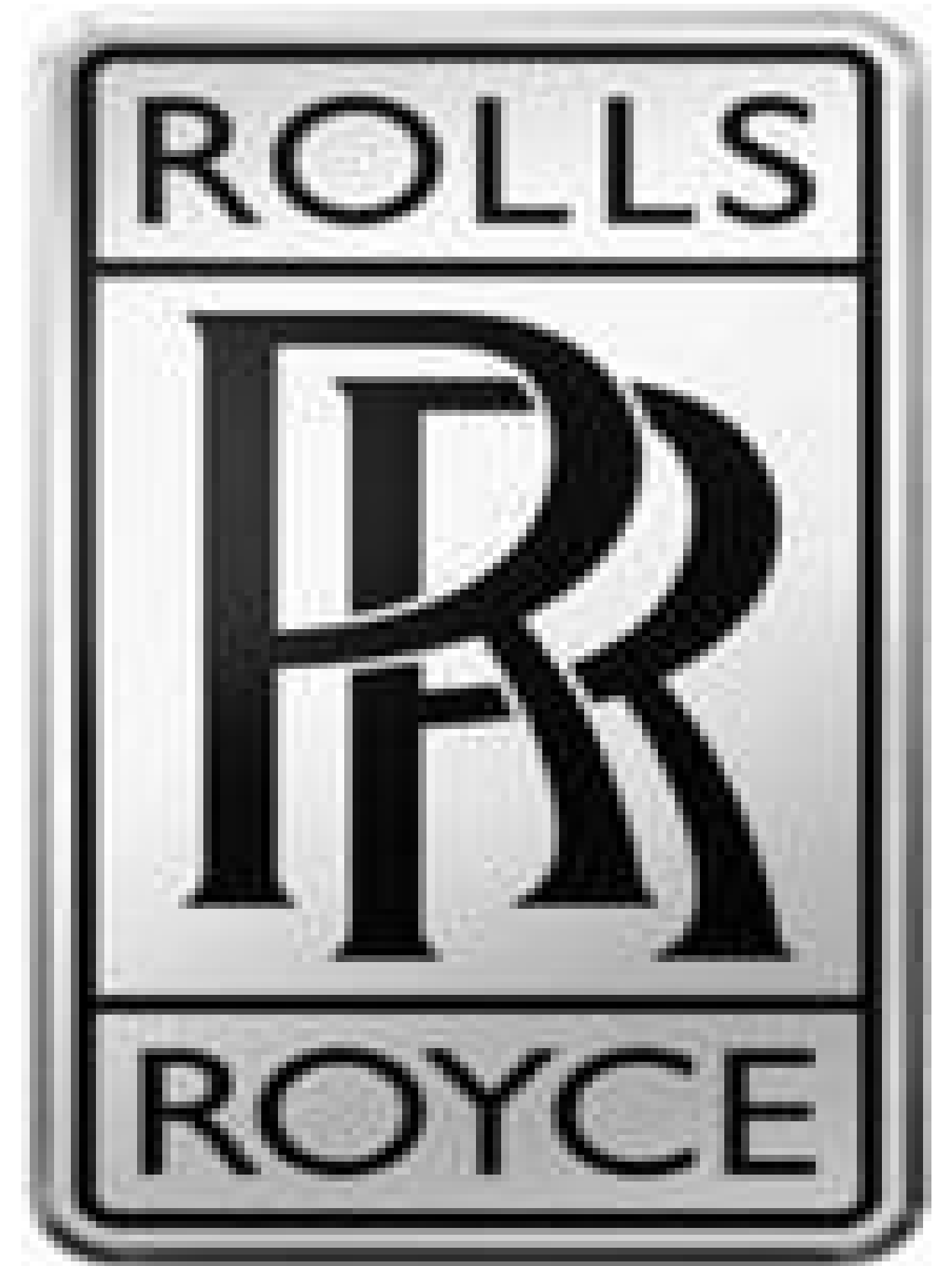
Logs tell us:

- Scholars seem to go online to avoid reading;
- Typically, only a few minutes spent on a visit, and 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;
- 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'.
- Never wanted it all – batch processed, that is all



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? Typically first ones up (usually Wikipedia), by cross-comparison (OK if you know field); or ask a friend via Facebook or twitter (OK assuming they know). Crowd sourcing challenging peer review
- Historically trust signified by 'established x years'; probably works the opposite way now (Wikipedia 10 years old; Facebook barely 10)
- Also what you think is a trusted brand is not necessarily what other people think. Younger they are less likely to recognise traditional brands. Tesco!



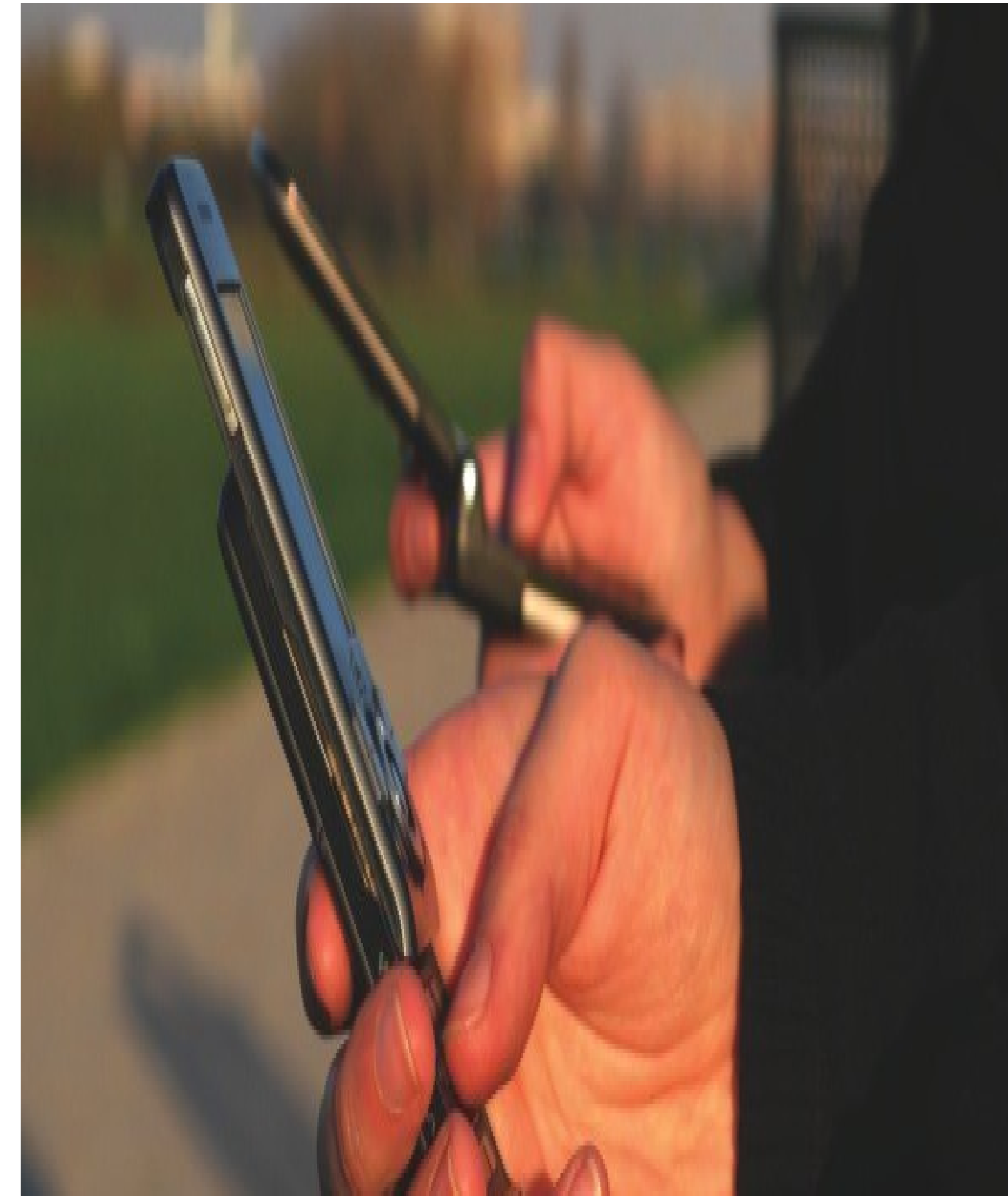
Game changers 1: the Google Generation

- Where we 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 least amount of time on a visit – fraction of the 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.



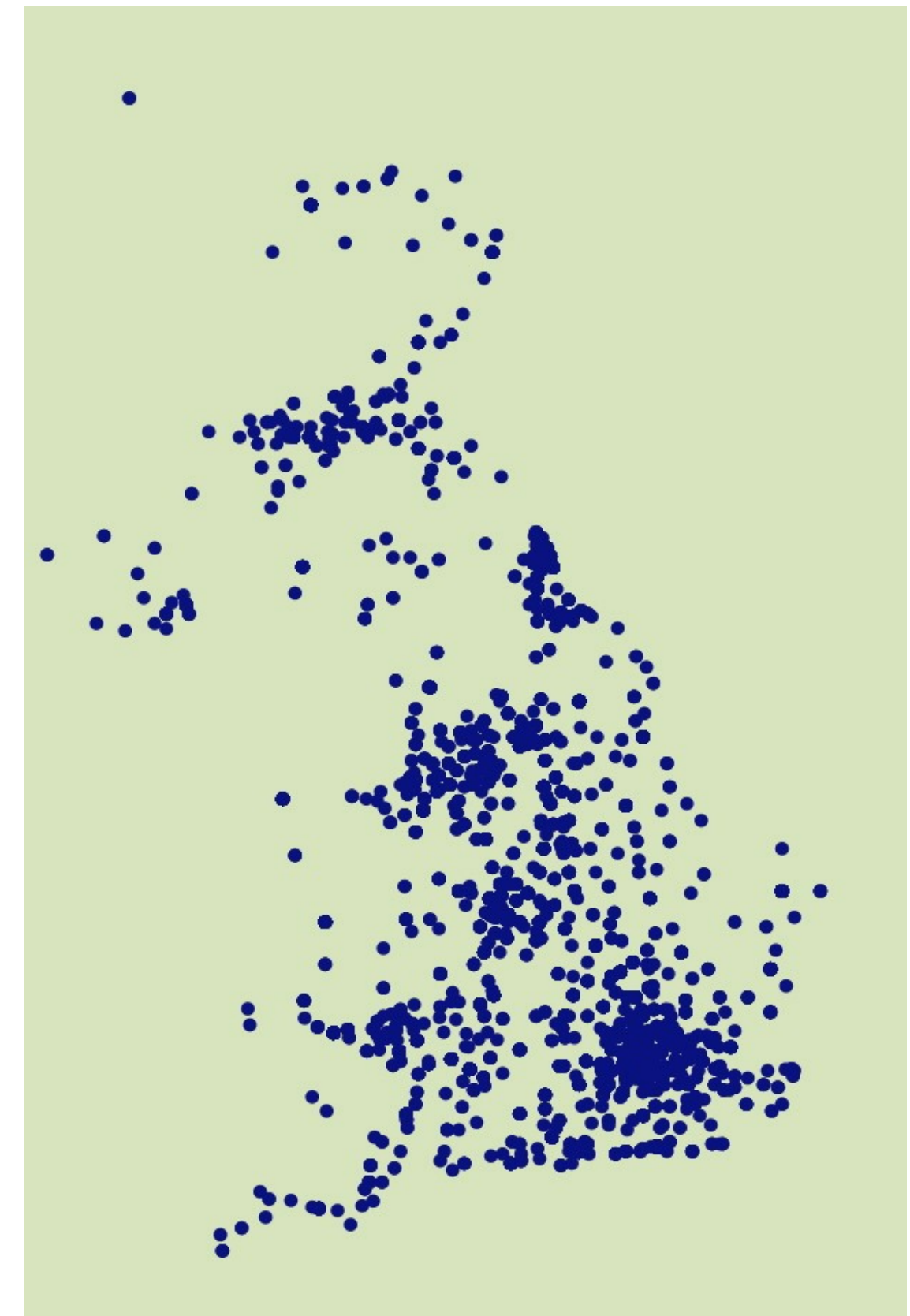
Game changers 2: smartphone (and tablets)

- Massive audience and huge growth; and brand 'cool'
- Ask a young person about the library and they will point to their phone
- Offers different user experience from PC. Redefines the consumer 'personal computer' experience; access-device rather than a computational machine.
- Not surprisingly has a big impact on information use and seeking behaviour:
 - 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



Game changers 3. Social media

- Having major impact on all aspects of scholarly communication and research process
- Perceived benefits:
 - Ability to **communicate** quickly & effectively with diverse audiences, at remote distances.
 - All about **building communities**, and alternative research networks and outlets.
 - Creating new **data collection chances** (but researchers wary of validity and reliability)
 - Allows social scientists/humanists collect information from **wide variety of sources** and to **listen to 'different' voices**.
 - Provides alternative research space where young researchers and those from developing countries can shine (a parallel scholarly universe).
 - Challenges old (busted?) concepts of trust and peer review. Distrust of anonymity of peer review; openness most important; reach and connectivity new research goals.
- SM users much more likely to use iPad & smartphones – compounds/accelerates changes in behaviour. Also not just the young.
- Our research also shows Librarians slow to move in on it – another round of decoupling?



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!
- *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 deep reading but lulled into complacency by sheer amount of 'activity' taking place in cyberspace
- Emergence of power browsing or reading 'lite'.



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)
- And, the million dollar question are researchers prospering as a result? And, if so, could they prosper more?
- Well, we do know that that the best researchers in any subject are also the biggest users of the literature
- But I am not sure that is conclusive; you have heard the evidence and I would be very glad to hear your answer

