1 *Communicative abundance*

In the beginning there was the first ever worldwide satellite television broadcast featuring the Beatles, Maria Callas, Marshall McLuhan and Pablo Picasso, all live, watched by an estimated 400 million people. Mountainous mainframe computers and host-based systems for sending messages by multiple users from remote dial-up terminals were already in use. Then along came electronic mail, fax machines, photocopiers, video recorders and personal computers. Now there are electronic books, cloud computing, scanners, smart watches and smart glasses, tweets and cell phones converted into satellite navigators, musical instruments and multi-person video chat sites. It is unclear even to the innovators what comes next, but these and other media inventions, commercially available only during recent decades, have persuaded more than a few people that we are living in a revolutionary age of communicative abundance.

In the spirit of the revolution, as in all previous upheavals in the prevailing mode of communication, fascination mixed with excitement is fuelling bold talk of the transcendence of television, the disappearance of printed newspapers, the withering of the printed book, even the end of literacy as we have known it. In the heartlands of the revolution, there is widespread recognition that time is up for spectrum scarcity, mass broadcasting and predictable prime-time national audiences, and that they have been replaced by spectrum abundance, fragmented narrowcasting and less predictable 'long tail' audiences.[1] Symbolised by the Internet, which is often portrayed through images that strongly resemble snowflakes (Figure 1.1), the revolutionary age of communicative abundance is structured by a new world system of overlapping and interlinked media devices. For the first time in history, thanks to built-in cheap microprocessors, these devices integrate texts, sounds and images in digitally

[1] The best-known work is Chris Anderson, *The Long Tail, or Why the Future of Business is Selling Less of More* (New York, 2006).

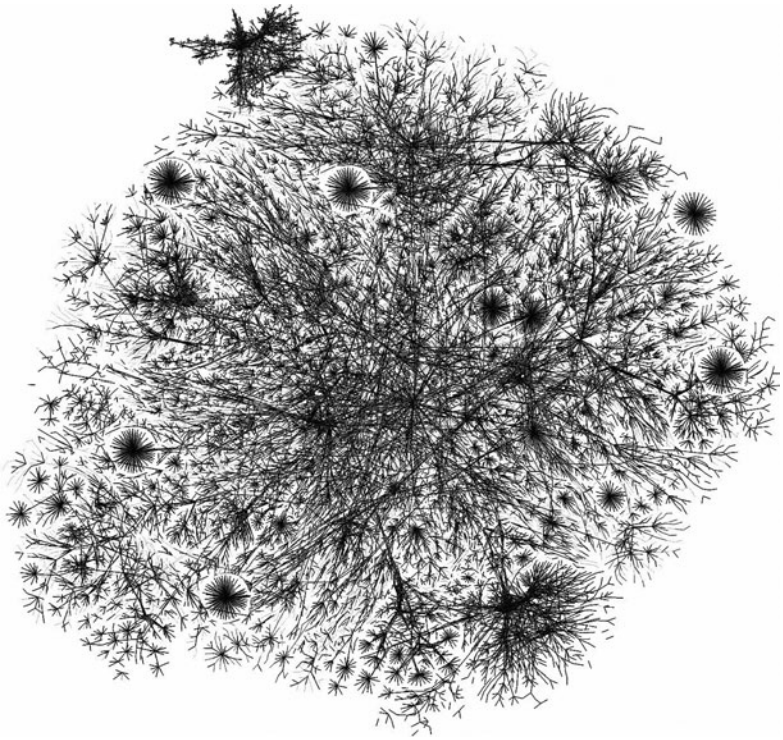

Figure 1.1 Computer graphic ('splat map') of global Internet traffic, shaded by ISP addresses, by Giovanni Navarria.

compact and easily storable, reproducible and portable form. Communicative abundance enables messages to be sent and received through multiple user points, in chosen time, either real or delayed, within modularised and ultimately global networks that are affordable and accessible to several billion people scattered across the globe.

The transformative potential of this new mode of communication is staggering, but its disruptive force and positive effects should not blindly be exaggerated. Communicative abundance does not bring paradise to Earth. Most of the world's people 'participate' within the global communications revolution on its sidelines. The cruel facts of communication poverty should not be ignored: a majority of the world's population (now totalling nearly 7 billion) are still too poor to buy a book; at least one-third have never made a phone call in their lives; and only around

one-third have access to the Internet, whose distribution patterns are highly uneven and are marked in turn by great divides between those who have access to its tools and techniques and those who are 'Internet savvy'.[2] Within the most media-saturated settings, for instance, the societies of Iceland, South Korea and Singapore, digital divides based on differences of age, gender, class, ethnicity and disability are plainly observable. Even among young people, supposedly the most digitally sophisticated stratum of the population in wealthy societies, social inequalities of access and patterns of use of digital media are striking.[3]

These points should be sobering. Yet the fact remains that the communications revolution of our time is a worldwide phenomenon that defies simple talk of rich–poor and North–South divides. Many different regions witness the breathtaking growth of information flows. Measured globally, an estimated 2.5 quintillion bytes of new data are generated daily; some 90 per cent of the data that now exists has been created during the past two years; and in the years leading to 2020, thanks to the spreading use of smartphones, tablets, social media sites, email and other forms of digital communication, the global volume of digital information is expected to double every two years. Gripped by such dynamics, some local trends veer towards the perverse: for instance, more Africans now have access to mobile phones than to clean drinking water; while in South Africa, among the continent's most vibrant, but still deeply class-divided economies, with a high proportion (approximately 40 per cent) of its people living in poverty, aggregate mobile phone use has rocketed during the past decade by more than four times (from around 17 per cent in the year 2000 to 76 per cent in 2010), to the point where more South African citizens (when they can afford them) rank their use of mobile phones above their listening to radio, or watching television or using personal computers.[4] Elsewhere, in countries otherwise as different as India, the

[2] See the various data sets and figures cited at: www.internetworldstats.com/stats.htm, accessed 10 January 2012.

[3] J. C. Witte and S. E. Mannon, *The Internet and Social Inequalities* (New York, 2010); L. Nakamura, *Digitizing Race: Visual Cultures of the Internet* (Minneapolis, MN, 2008); Sonia Livingstone and E. Helsper, 'Gradations in Digital Inclusion: Children, Young People and the Digital Divide', *New Media & Society* 9 (2007): 671–96.

[4] Estimates of the growth of information flows are based on recent studies by IBM and the International Data Corporation, as reported in 'Technology Revolution

United States, South Korea and Brazil, and in the European Union member states, evidence is growing that many people routinely sense sideways motion and forward movement in the way that they communicate, even in the little things of life. Whether they like it or not, old media broadcasting habits are dying, or are already dead and buried. India is a striking case in point: until 1991, the country had only a single state-owned television channel, but the subsequent rapid expansion of independent satellite channels has resulted not only in multiple news channels, but a plethora of other genres, ranging from regular talk-shows focusing on political issues and the political satire of cartoons and puppetry, to daily opinion polls via SMS messages and the rise of 'citizen journalists' who send in video clips through computers and mobile phones.[5] In India, as in other democracies, radio, television and chit-chat continue to be the principal sources of news and entertainment for many citizens; in various parts of the world, these are the only media available to people. Yet in the heartlands of communicative abundance, mass audiences with pricked ears and wide eyes predictably glued to radio and television broadcasts have become exceptional. In their place, multiple audiences of many different shapes and sizes are flourishing, helped along by dispersed multimedia communications that radically multiply choices about when, how and at what distances people communicate with others.

The communications revolution that brought the world the telegraph and the telephone sparked tremendous excitement. The Boston Library feature panels, painted by the famous nineteenth-century artist Puvis de Chavannes, depicted the telegraph and telephone as two female figures flying above electric wires, adding the inscription: 'By the wondrous agency of electricity, speech flashes through space and swift as lightning bears tidings of good and evil.' Communicative abundance exudes the same feverish sense of ferment and fire captured in that image. The present seems charged with radical uncertainty about future trends.

Consider, to take a few brief examples, developments within the commercial music sector, where for some time copyright arrangements

Moves Mountains of Data', *International Herald Tribune*, 10 June 2013, pp. 1, 8; the data from South Africa is drawn from Jan Hutton, 'Mobile Phones Dominate in South Africa', 2011, http://blog.nielsen.com/nielsenwire/global/mobile-phones-dominate-in-south-africa, accessed 22 September 2011.

[5] Nalin Mehta, *Television in India: Satellites, Politics and Cultural Change* (London and New York, 2008).

(it is said by industry figures) have been ransacked by simple reproduction techniques and by freely available electronic download methods that threaten to erode music company earnings. The cassette tape replaced the eight-track, only to be replaced in turn by the compact disc, itself now being replaced by MP3 players. Or look at what has been happening within the field of electronic books. Despite reassurances that the 'book is like the spoon, scissors, the hammer, the wheel. Once invented, it cannot be improved,'[6] manufacturers of tablet reading devices and online retailers of hard-copy and e-books are putting heavy pressure on the prices and distribution methods of traditional book publishing business models. As with free or cheaply downloadable music, books delivered in digital form raise profound questions not just about the future role played by traditional book publishers, but also much fretting about whether books in any form and selective 'reading for the sake of reading' remain a powerful way of constructing meaning from life's experiences, the best and most pleasurable antidote against the anaesthetics of boredom and vacuity in an age of multimedia distraction.[7] Unsettlement and restructuring equally grip the newspaper world, where a combination of plummeting advertising revenues, takeovers and mergers, independent citizens' journalism, competition from digital devices and shifting public definitions of news and entertainment has prompted profound unease about the future of hard-copy, mass circulation newspapers. Some observers even predict their eventual disappearance from street news stands, cafés and kitchen tables.

The uneasy excitement triggered by the coming of communicative abundance is often hard to interpret; the predictions of pundits are equally difficult to assess. Yet with some certainty it can be said that the myriad disturbances in the field of communications hail an historic shift away from the era of limited spectrum radio and television broadcasting. Gone are the times, during the 1950s, when on American television an episode of the sitcom *I Love Lucy* was watched by over 70 per cent of all television households, or when even more households (nearly 83 per cent) watched Elvis Presley's appearance on the Ed Sullivan Show. The days are behind us (I recall) when children played with

[6] Umberto Eco, in conversation with Jean-Claude Carrière, in *This is Not the End of the Book: A Conversation about the Past, Present and Future* (London, 2011), p. 4.
[7] See Alan Jacobs, *The Pleasures of Reading in an Age of Distraction* (Oxford, 2011); the continuity between hard-copy books and e-books is emphasised by Andrew Piper, *Book Was There: Reading in Electronic Times* (Chicago, 2012).

makeshift telephones made from jam tins connected by string; or the evenings when they were compulsorily flung into the bath and scrubbed behind the ears, sat down in their dressing gowns and instructed to listen in silence to the radio. There are still moments when live-event television coverage (of sporting events, political dramas, catastrophic accidents and singing competitions) binds together splintered audiences, but memories of the age of mass broadcasting and its various tools of communication are fading fast.

In the heartlands of today's revolution, people no longer own telephone directories, or memorise telephone numbers by heart. Most people have had no direct experience of the nervous excitement triggered by making a pre-booked long-distance call. Old documentaries featuring interviews with people looking with nervous hostility at the camera are no more; once seen as an invasion of self, cameras are considered enhancers of self. Everybody chuckles when mention is made of the wireless; nobody thinks of the bakelite tube radio as the source of a retronym now used to describe cord-free connections among stationary and portable tools of communication, large and small. Typewriters belong in curiosity shops. Pagers have almost been forgotten. Old jokes at the expense of television, said to be chewing gum for the eyes, or called a medium because it is neither rare nor well done, now seem flat. Even the couch potato seems to be a figure from the distant past. Few people think twice about the transformation of the word text into a verb. Writing and receiving hand-written letters and postcards have become a rare, nostalgic pleasure, and such formal valedictions as 'Yours truly' and 'Yours faithfully' have long ago been supplanted by 'Best' or 'Thanks' or 'Cheers' – or a blank space.

For many busy, well-equipped people, dead time, the art of doing nothing while contemplating the world out of a window, is on the skids; the same fate, at least for those who can afford it, is suffered by the ancient pleasure of curling up with a good book, or taking a quiet stroll in the park, without a Samsung in hand, or an iPod plugged into an ear. Soon after the publication of this book, the examples it cites will seem dated, replaced (for instance) by mobile phones with laser keyboards and holographic displays, or by tiny computers worn like wristwatches, which will have the effect of confirming the underlying trend. In contexts as different as Seoul, London and Mumbai, many office workers meanwhile admit that they spend their lunch hours snaffling a snack while checking their email or browsing the Web, rather than taking a

physical break from their desk; family members say that watching television in the company of others, except for sport and live reality shows, is now no match for the magnetic pull of mobile phones, tablets and desktop computers; and the younger generation, determined to prove the point with an iPod plugged into one ear, spends many hours each day and night online, often connecting through mobile applications with others, elsewhere in the so-called virtual world.

One key marker of the broad trend towards multimedia saturation is the perceived transformations taking place in the content and delivery of news.[8] Communicative abundance stirs up public disputes about the future of newspapers in hard-copy form. In their defence, some observers insist that while newspapers are bleeding revenues to online destinations, newspaper journalists working in well-equipped and well-connected newsrooms remain the 'content engines' (as American journalists say) of talkback radio, television news shows and blogs and tweets. The point is well made, for newspapers such as the *New York Times*, *El País* and *Yomiuri Shimbun* (the Japanese daily usually credited with having the largest circulation of any newspaper in the world) are probably not dinosaurs due for extinction. There is undoubtedly scope for their reinvention and ongoing redefinition in online form, for instance, using combinations of subscriptions and advertisements to deliver news to tablets.

Yet, in the age of communicative abundance, the ecology of news production and news circulation is undergoing rapid change.[9] News sources and streams diversify and multiply. Symptomatic is the way many media-savvy young people in countries otherwise as different as South Korea, Singapore and Japan are no longer wedded to traditional 'bundled' news outlets; they do not listen to radio bulletins, or watch current affairs or news programmes on television. 'Reading the morning newspaper', Hegel famously wrote in his daily journal, 'is the realist's morning prayer. One orients one's attitude toward *the* world.'[10] Digital

[8] See, for example, Leonard Downie Jr and Michael Schudson, 'The Reconstruction of American Journalism', *Columbia Journalism Review*, 19 October 2009.

[9] Michael Schudson, 'On Journalism and Democracy: Tocqueville's Interesting Error', public lecture delivered at the Centre for the Study of Democracy, London, 3 February 2010.

[10] *Miscellaneous Writings of G. W. F. Hegel*, ed. Jon Bartley Stewart (Chicago, 2002), p. 247; for the exodus of young people from conventional newspaper culture see Pew project for Excellence in Journalism, *The State of the News Media: An Annual Report on American Journalism* (Washington, DC, 2008).

natives, as they are sometimes known, are doing things differently. They refuse the old habit of mining the morning newspaper for their up-to-date information, as four out of every five American citizens once did (in the early 1960s). Internet portals have instead become their favoured destination for news. It is not that they are uninterested in news; it is rather that they want lots of it, news on demand, in instant 'unbundled' form and delivered in new ways, not merely in the mornings but throughout the day, and night.

Not surprisingly, pressured by such changes, plenty of observers, even from within the newspaper industry itself, have warned of the coming disappearance of newspapers. They point to mounting evidence that conventional newspaper business models are reaching crisis point, dragged down by online competitors (such as real-time sharing of YouTube and Twitter feeds) and the dramatic decline of classified and display advertising revenues.[11] Other observers make deliberately outlandish comments, designed to shock, for instance, through reminders that in the two years to 2009 the newspaper readership market in the United States fell by 30 per cent, more than 160 mastheads disappeared, along with 35,000 jobs; and through predictions that on current trends newspapers in the United States will no longer be printed after 2043.[12] More measured observers point out that although there are worrying developments (fewer than 20 per cent of Americans aged between 18 and 34 read a daily paper, for instance), overall trends are considerably more complicated; but, nevertheless, they agree that compared with the now-distant era of representative democracy, when print culture and limited spectrum audio-visual media were closely aligned with political parties, elections and governments, and flows of communication took the form of broadcasting confined within state borders, our times are different. The shift towards multimedia platforms and user-generated communication involves many more people listening, watching and talking directly to other people, rather than to traditional media sources. Or so most commentators now suppose.

[11] James Fallows, 'How to Save the News', *Atlantic Magazine* (June 2010); Hal Varian, 'A Google-Eye View of the Newspaper Business', *The Atlantic*, 10 May 2011.

[12] Compare Philip Meyer, *The Vanishing Newspaper: Saving Journalism in the Information Age* (Columbia, MO, 2009) with Charles M. Madigan (ed.), *The Collapse of the Great American Newspaper* (Lanham, MD, 2007) and the two reports by the Media, Entertainment and Arts Alliance, *Life in the Clickstream: The Future of Journalism* (2008; 2010) at www.alliance.org.au/documents/foj_report_final.pdf and www.thefutureofjournalism.org.au/foj_report_vii.pdf.

Novelties

As in every previous communication revolution – think of the upheavals triggered by the introduction of the printing press, or radio, film and television – the age of communicative abundance breeds exaggerations, false hopes, illusions. Thomas Carlyle expected the printing press to topple all traditional hierarchies, including monarchies and churches. 'He who first shortened the labor of copyists by device of movable types', he wrote, 'was disbanding hired armies, and cashiering most kings and senates, and creating a whole new democratic world.' Or to take a second example: D. W. Griffith predicted that the invention of film would ensure that schoolchildren would be 'taught practically everything by moving pictures' and 'never be obliged to read history again'.[13] Revolutions always produce fickle fantasies – and dashed expectations. This one is no different, or so it seems to wise minds. Yet, when judged in terms of speed, scope and complexity, the new galaxy of communicative abundance has no historical precedent. The digital integration of text, sound and image is a first, historically speaking. So also are the compactness, portability and affordability of a wide range of communication devices capable of processing, sending and receiving information in easily reproducible form, in vast quantities, across great geographic distances, in quick time, sometimes instantly.

Technical factors play a pivotal role in the seismic upheavals that are taking place. Right from the beginning of the revolution, computing hardware has been undergoing constant change, with dramatic world-changing effects on the everyday lives of users. The number of transistors that can be placed inexpensively on an integrated circuit is doubling approximately every two years (according to what is known as 'Moore's law'[14]). The memory capacity, processing speed,

[13] Thomas Carlyle, *Sartor Resartus* (London, 1833); the D. W. Griffith quotation is from Richard Dyer MacCann, *The First Film Makers* (Metuchen, NJ, 1989), p. 5.

[14] The law takes its name from the co-founder of Intel, Gordon E. Moore, whose classic paper on the subject noted that the number of components in integrated circuits had doubled every year from the invention of the integrated circuit in 1958 until 1965. Moore predicted (in 1965) that the trend would continue for at least another decade. See his 'Cramming more Components onto Integrated Circuits', *Electronics* 38(8) (1965): 4–7.

sensors and even the number and size of pixels in smart phones and digital cameras have all been expanding at exponential rates as well. The constant revolutionising has dramatically increased the usefulness and take-up of digital electronics in nearly every segment of daily life, and within markets and government institutions as a whole, to the point where time–space compression on a global scale is becoming a reality, sometimes a functional necessity, as in the transformation of stock exchanges into spaces where computer algorithms (known as 'algobots') are programmed automatically to buy and sell equities, currencies and commodities in less than 200 milliseconds. Cheap and reliable cross-border communication is the norm for growing numbers of people and organisations. The tyranny of distance and slow-time connections is abolished, especially in such geographically isolated countries as Greenland and Iceland, where the rates of Internet penetration (over 90 per cent of the population) are the highest in the world. The overthrow of that tyranny provides a clue as to why, in the most media-saturated societies, people typically take instant communications for granted. Their habits of heart are exposed by the curse uttered when they lose or misplace their mobile phones or when their Internet connections are down. They feel lost; they wallow in frustration; they curse.

The historical novelty of quick-time, space-shrinking media saturation is easy to overlook, or to ignore, but it should in fact be striking. When four decades ago Diane Keaton told her workaholic husband in Woody Allen's *Play it Again, Sam* (1973) that he should give his office the number of the pay phone they were passing in case they needed to contact him, it was a good frisky gag. But jest soon turned into today's reality. Growing numbers of people are now familiar with real-time communication; as if born to check their messages, they expect instant replies to instant missives. Their waking lives resemble non-stop acts of mediated quick-time communication with others. In the space of an hour, for instance, an individual might send several emails, text or twitter a few times, watch some television on- or offline, channel hop on digital radio, make an old-fashioned landline telephone call, browse a newspaper, open the day's post, and even find time for a few minutes of face-to-face conversation.

In practice, for reasons of wealth and income, habit and shortage of time, only a minority of people perform so many communication acts in quick time. For most individuals, 'ponder time' has not