Editorial

Information Systems history: What is history? What is IS history? What IS history? … and why even bother with history?

Antony Bryant[1], Alistair Black[2], Frank Land[3], Jaana Porra[4]

[1]School of Computing and Creative Technologies, Leeds Metropolitan University, Leeds, UK;
[2]Graduate School of Library and Information Science, University of Illinois, Urbana-Champaign, USA;
[3]Information Systems and Innovation Group, London School of Economics, London, UK;
[4]Department of Decision and Information Sciences, C.T. Bauer College of Business, University of Houston, Houston, USA

Prologue and preamble

The views of Collingwood can be summarized as follows. The philosophy of history is concerned neither with 'the past by itself' nor with 'the historian's thought about it by itself', but with 'the two things in their mutual relations'. (This dictum reflects the two current meanings of the word 'history' – the inquiry conducted by the historian and the series of past events into which he inquires.)
Carr (1961: 11)

Developing from Carr's summary of Collingwood's insights, the collection of essays on Information Systems (IS) history presented in this and the subsequent issue of the *Journal of Information Technology* illustrates a range of different ways in which the mutual relations between 'the past' and the 'the way in which historians view the past' can be exemplified with regard to the field of IS. In effect, the authors of the papers are historians, even if that is not their specific or designated area of expertise or specialization. They are all 'doing history', but the nature of the various ways in which they seek to engage in this activity is itself an important issue that needs to be addressed. Consequently, in this introductory essay, we wish to take up the task of examining different responses to the question posed famously by Carr (1961) in his G M Trevelyan lectures *What is History?*, at the same time providing a consideration of what might be specific or germane to IS history. In so doing, we have deliberately sought to widen consideration of what 'doing history' involves, drawing on sources and concepts that might not have been at the forefront of IS-centred discussion of historical accounts. We also offer these thoughts for IS academics in a more general sense, in the hope that they will provide a basis for a wide range of research- and practice-oriented issues and activities.

Fresh departures in the field of history are often precipitated by significant and new developments in the contemporary world. In Britain, the rapid expansion of trade unions in the late nineteenth century gave rise to an interest in their origins and early development (Webb and Webb, 1894). The perplexing persistence of poverty in the early twentieth century, despite incredible economic, scientific, and technological advances over the previous 150 years, led to historical consideration of conditions and standards of living in the past (Hammond and Hammond, 1917). Growing interest in socialism in the wake of the Russian Revolution of 1917 sparked historical studies of the working classes, including their political and cooperative movements in the nineteenth century (Cole, 1923; Hutt, 1937; Morton, 1938). After the Second World War, the growth of popular culture, deepening conflict in the arena of industrial relations, and continuing class tensions gave rise to further, and in many ways, ground-breaking histories of the working classes and of plebeian culture (Briggs, 1959; Thompson, 1963; Rudé, 1964; Hobsbawm, 1965; Jones, 1971; Zinn, 1980). Across the western world, the civil rights and feminist struggles of the 1960s and 1970s generated an explosion of interest in women and black history (Spear, 1967; Rowbotham, 1973; Parker and Pollock, 1981; Commire, 2000). From the late 1960s onwards, the return of mass unemployment and the associated debate over the efficacy and future of the Keynesian project and of welfare-state capitalism prompted studies of earlier malfunctions in the labour market and of the origins and morality of social welfare provision (Bacon and Eltis, 1978; Thane, 1978; Harris, 1984). The waning and eventual demise of European empires resulted in studies of imperialism and of how the west viewed oriental culture (Gallagher and Robinson, 1953; Said, 1978); while recent revolutionary events in the Islamic world and its interaction with international geo-politics have fostered an intense

interest in the history of religion (Armstrong, 1994; Esposito, 1999).

It is hardly surprising, therefore, that the revolution in digital information and communication technology (ICT), the perceived emergence of an information society, and 'our current fascination with things informational' (Weller, 2008: xiv) should have encouraged scholars not only to investigate the trajectory of such developments, but also how information was collected, organized, and used in the past, before the advent of these technologies. The millennial changes supposedly wrought by computer-mediated IS have pushed historians into asking if pre-computer *systems of information provision* can provide a new lens through which major shifts in human history might be reinterpreted; for example, the transition to, and the maturation of, capitalism; the rise of modernity; or the growth of imperialism (Black and Schiller, forthcoming).

The arrival of digital society has prompted scholars to search for its roots, precursors, and antecedents, technological and non-technological. There are notable examples of work that have sought to answer specific questions within this broad area, and which may well provide useful, alternative starting points for imaginative consideration by IS historians:

- To what extent can a direct line of descent be drawn from the internet to the telegraph (Giddens, 1985: 16–18; Standage, 1998)?
- or to the Republic of Letters and its reliance on correspondence, and its development of centralized bureaux containing lists of everyday information (Rayward, 2011)?
- or, in respect of email, to the development of robust national and international mail systems (Daunton, 1985; John, 1995)?
- Might the digital computer be viewed as a mere extension of systems that grew within, and underpinned, state bureaucracies from the early nineteenth century onwards (Agar, 2003)?
- In what fashion is today's computer-mediated surveillance society similar to, or different from, the state's oversight of its citizens as these processes developed from the late middle ages onwards (Foucault, 1979; Lloyd, 2003; Higgs, 2004; Slack, 2004; Robertson, 2010)?

Although potentially useful in offering different orientations for the study of IS-related issues, there is the problem that such questions may well pre-suppose and emphasize linear perceptions of history, underplaying or ignoring discontinuities and differences. Seeking to avoid this danger, although often still influenced by the social and technological changes they themselves experience, historians have sought to investigate past systems of information provision without resorting to mechanistic accounts that suggest smooth trajectories from past to present. The information revolution of the late twentieth century has spawned a large number of studies of the manual technology revolution in organizations, commencing in the corporate sector, a century earlier (Beniger, 1986; Yates, 1989; Heide, 2009; Krajewski, 2011). The communications revolution of the mid-twentieth century onwards served as a backdrop, if not a stimulus, to efforts that pulled from relative obscurity, in terms of the priorities historians had

been expressing, the print revolution that began in the fifteenth century (Eisenstein, 1979), and its subsequent effect on science (Shapin, 1998), as well as on distribution networks from publisher to bookshop, to what Irwin (1957) conceptualized as the 'golden chain' of library provision, and what Darnton (1982) called the 'life cycle' of the book.

Also rescued from near oblivion at this time was the pioneering work of Paul Otlet, which began with the International Institute for Bibliography in Brussels in 1895, and later developed into a scheme for a world centre (The Mundaneum), housed in an independently governed world city, containing a universal index and encyclopaedia of human knowledge (Rayward, 1975). Otlet's schemes – designed as they were to cope with industrial society's prolific production of, and increasing dependence on, documentation – were based on the realization that the problem of information overload, a recurrent theme for centuries (Blair, 2010), could only be solved by 'deeply' indexing fragments of knowledge lodged in whole bibliographic items. The resulting index, Otlet envisaged, could be subjected to hypertext linking, thereby leading to subsequent ascription of his project as the 'paper internet', and bestowing upon him the status of the founder of information science – the other 'IS'. In the first half of the twentieth century, similar utopian schemes, attempting to resurrect the dream that was encapsulated in the universal library in ancient Alexandria, were envisioned by H.G. Wells and Vannevar Bush (Muddiman, 1998; MacLeod, 2000; Houston and Harmon, 2007).

The topic of IS History has garnered importance and attention in recent years, although it must be stressed that the topic itself has been raised in several notable publications in the past – particularly Mason *et al.*'s (1997) work dating back to the 1990s or even earlier. One of the reasons for the current vogue is that many of those associated with the earliest days of IS and computer-based systems are now mature in years and offer a rich, but inevitably dwindling, resource of insight and wisdom. One of our number, Frank Land, embodies both the academic and the commercial foundations of IS, and to an extent it is his recent calls for further attention to be paid to these histories that has resulted in these special issues (Land, 2010, 2012).

In line with the maturing of these founding figures, IS itself seeks to articulate and claim a heritage – although a complex and mixed one as will be explained later – and such claims require historical analyses and explicated lineages. To an extent, this also necessitates engaging with issues around the sense in which IS can be regarded as a discipline or at least as a distinct field of study; although this is not a topic we wish to address at any length in this essay. On the other hand, it is worth pointing out that a consideration of the papers in this issue and the subsequent one affords some particular pointers to how this long-lived debate might be usefully redirected. Thus, several papers – such as that by Bernroider and colleagues – demonstrate the necessity for a rich institutional backdrop to any field of studies if it is to achieve a sustainable identity and level of visibility. Claims for disciplinary status and maturity – or some equivalent – need to encompass recognized journals and conferences, authoritative sources and statements, specific methods, and historical accounts, although taken

together these are not always sufficient to ground such claims, and establish a widely regarded identity and recognized boundaries. Conversely, any deficiencies in the aforementioned characteristics do not necessarily undermine claims for a distinct disciplinary identity.

These observations, taken together with the argument that disciplines construct their own subject matter and methods at least as much as subject matter and methods provide the basis for a disciplinary foundation (Bryant, 2006; Bryant and Land, 2012), results in a view of disciplines as actively and constantly created, sustained, and occasionally reinvented. This all implies that disciplinary histories are 'made' at least as much as they are 'discovered', and that the relationship between 'the past itself' and the 'historian's thought' is a key factor. Consequently, there can be no definitive, finally authoritative IS history; on the contrary, the process of articulating the history of IS needs to be a wide-ranging, continuous effort, encompassing different perspectives and agendas.

In assembling the collection of papers that follows in this issue, and the one subsequent to this, we have sought to offer readers a selection of approaches and topics that at least hint at the wide range of orientations and understandings of what it is to engage with IS history. The editorial team encompasses a range of expertise, including the pioneering days of commercial computing and academic IS, extensive historical analyses of ICT organizations, sociological issues around ICT, and someone specifically trained as an academic historian. Moreover, we took it upon ourselves to ensure that the submitted papers were reviewed by historians as well as those with expertise in IS. This resulted in some interesting exchanges, drawing attention to the ways in which those working in cognate areas often had varying interpretations of what constituted good historical research, as well as differing views on terms such as 'information studies', 'IS', and 'information science'.

Before going any further, however, it is worth pointing out that many of the issues raised in these exchanges – some of which are addressed in what follows – emanate from debates within and around the historical discipline. The term *historiography* specifically refers to the study of how historical studies are carried out and the associated findings (re)presented. Moreover, in ways that resonate with some of the discussions that characterize what constitutes the core concerns of IS, there is no general agreement among historians of what it is that constitutes 'good historical research'. The earliest histories were often presented in the form of chronicles or narratives, in many cases based on first-hand accounts. In the nineteenth century, some historians sought a more scientific and empirical status for their discipline, something that has been challenged by those arguing for more interpretative approaches. In more recent times, historians such as White (1974) have argued forcefully that historical writing has to be seen as incorporating aspects of key literary forms, and so judged accordingly. We do not attempt to resolve these debates, but seek to indicate the ways in which historians themselves differ with regard to 'doing history', and how this range of diverse perspectives needs to be taken into account in developing IS history.

What has become apparent, if it was not already, is that those of us working within IS need to ensure that we continue to encourage a range of historical contributions to journals, conferences, and other forums: these include detailed and focused analyses of specific topics, as well as wide-ranging efforts that seek to relate or explain broad sweeps of IS activity. In the pages that follow, we hope to provide some helpful yet cautionary guidelines for future contributors to this endeavour.

History as disciplinary veneer

Mr. and Mrs. Veneering were bran-new people in a bran-new house in a bran-new quarter of London. Everything about the Veneerings was spick and span new. All their furniture was new, all their friends were new, all their servants were new, their plate was new, their carriage was new, their harness was new, their horses were new, their pictures were new, they themselves were new, they were as newly married as was lawfully compatible with their having a bran-new baby, and if they had set up a great-grandfather, he would have come home in matting from the Pantechnicon, without a scratch upon him, French polished to the crown of his head.

For, in the Veneering establishment, from the hall-chairs with the new coat of arms, to the grand pianoforte with the new action, and upstairs again to the new fire-escape, all things were in a state of high varnish and polish. And what was observable in the furniture, was observable in the Veneerings – the surface smelt a little too much of the workshop and was a trifle sticky. (Charles Dickens, *Our Mutual Friend*)

Any discipline or field of professional practice has a history, often extending back in time to a period before these practices coalesced into anything resembling the current state of the discipline or field. As the discipline develops, even matures, this history needs to be articulated and brought into the forefront of its practitioners' awareness; indeed, it has been argued that for any field of study or practice to be considered a true discipline it has to have an articulated and developed historical account of itself. The field of IS is no different in this regard. As the IS field matures, it needs to evolve a historical perspective on its own subject matter; but the extract from *Our Mutual Friend* illustrates the dangers in seeking to misappropriate a historical account. Thus, in commenting on the 'bran-newness' of everything about the Veneerings, Dickens draws attention to their status as nouveau-riche and parvenus; hence, their determined efforts in later sections of the book to ensure that those invited to join them at their various social gatherings can remedy the Veneerings' lack of pedigree by being able to boast of far more distinguished ancestries. Dickens develops this theme in order to ridicule the efforts of the Veneerings and their ilk to invent or hitch themselves – literally through marriage – to an illustrious heritage. Yet he also wishes to prick the pomposity and arrogance of those who rely on the status accorded to them based on the supposed grandeur of their antecedents. If the former are in danger of appearing somewhat 'sticky', the

latter are more than a little musty and in danger of appearing ridiculous.

The recent burgeoning of interest in 'IS history', as evidenced by special issues of journals such as *JAIS* (Hirschheim *et al.*, 2012) and *JIT*, as well as various conferences and discussions, might be seen as a Veneering-like effort to move beyond the 'sticky-ness' of a 'bran-new' discipline, towards something that is more established and venerable. In some regards, this is laudable and understandable, an expected and even necessary adjunct to the incessant debates and concerns regarding the IS disciplinary identity, as well as offering new insights into IS phenomena. But on the other hand, it is important that such efforts do not efface the genuinely innovative nature of IS, nor recreate a historical narrative that is derived from an uncritical reading of the past from the perspective of the present. Dickens clearly pokes fun at the Veneerings, but it could be argued that at least they are aware of the ways in which they are creating their own history, a point that needs to be constantly borne in mind when developing a disciplinary history. The development and articulation of disciplinary histories has to be a collective effort, usually contested, that amounts to a sustained and continual act of creation as well as discovery. In effect, mirroring the ways in which disciplines construct their own subject matter and methods at least as much as subject matter and methods construct a discipline (Bryant, 2006; Bryant and Land, 2012).

Although there has been some significant work within academic studies of IS that relies upon and uses historical data, there has been little by way of information historiography to guide further work and future research emanating from within IS itself, although the recent paper by Mitev and De Vaujany (2012) is a notable exception. On the other hand, cognate areas such as information studies and information science provide a wealth of resources deserving of far more of our attention, including specific writings addressing the topic of 'information history' (Black, 2006; Burke, 2007; Weller, 2008; Fyfe, 2009; Weller, 2011; Bawden and Robinson, 2012; Cortada, 2012). This deficiency is ironic, given that IS themselves are now the *fons et origo* of contemporary and future archives (richly demonstrated by the recent WIKILEAKS affair). In addition, within IS research and general IS literature, there is significant reliance upon case studies and other forms of historical narrative. Thus, it is essential that those working within academic IS understand the role and nature of archives and other historical sources, both in terms of a resource for research into IS history, and as a topic for discussion among archivists, historians, and other information and IS researchers and professionals: Also developing an awareness of the processes underlying the development of archives as social artefacts – see, for instance, Derrida (1996); Shepherd and Yeo (2003); Shepherd (2009).

The interest in producing IS history encompasses many disciplines and varying perspectives on IS. The IS discipline itself is closely related to other disciplines or research domains, such as information studies, information science, library history, organizational studies, business studies, software engineering (including requirements engineering), Human/Computer Interaction (HCI), Artifical Intelligence (AI), CAD/CAM, criminology, social studies, behavioural sciences, economics, and communication studies – although all too often these links are ignored or simply forgotten. In so doing, the IS community is missing an opportunity to engage with, and learn from, others with differing perspectives on topics of common interest. Furthermore, this engenders an uneasy feeling that many current IS issues and concerns might be at least partially resolved with a better knowledge and understanding of *information history* in its broadest sense. The purpose of this introductory essay is to explore how a historical approach can help us understand the evolution of the IS discipline (broadly understood), including its failings. We wish to use this opportunity to raise the awareness of the important choices we are making as a discipline as we create and develop our history. We hope that this discourse will continue in forms such as a future IS history conference, and history tracks at major IS conferences, incorporating dialogues with other disciplines and historians.

History as collective memory and identity

> Without history, the nations themselves are denied their true identities. (Ferro, 2002)

Histories are important to those who see themselves as the subjects of such accounts, or at the very least recognize their roots in them. Histories are powerful because they both create and reinforce collective identities. Without a history, it is difficult to know who one is, where one comes from, or where one is headed. It is difficult to belong or have direction. Having a history is important because what is articulated as having happened in the past profoundly affects all aspects of our lives and will affect what happens in the future.

Yet such collective characterizations of 'the past' are never fixed; they change in content and priority, are often contested, and are the result of selectivity; some things must be recalled and remembered, others must be forgotten, erased, or ignored: Others are even invented (see below). Jorge Luis Borges' story *Funes, The Memorious* centres on Ireneo Funes, a youth who, aged 17, is thrown from his horse and left paralyzed, but consequently is empowered with total recall. Far from being a blessing, this proves to be a curse since as Borges (2000) reports:

> Without effort, he had learned English, French, Portuguese, Latin. I suspect, nevertheless, that he was not very capable of thought. To think is to forget a difference, to generalize, to abstract. In the overly replete world of Funes there were nothing but details, almost contiguous details.

Recent real-life cases such as that of Jill Price[1] attest to the disabling impact of this condition, now labelled as hyperthymestic syndrome or highly superior autobiographical memory.

On the other hand, the inability to recall events of one's past, even the previous day, is equally devastating. The recent novel by Watson (2011), *Before I Go To Sleep*, centres on Christine Lucas who awakes every morning in a strange bed, in a strange room, sleeping next to a strange man; but the stranger is her husband, and the bed is in the

bedroom in her house. She simply cannot recall anything from her past, even her immediate past. Similarly, the central character in Christopher Nolan's film *Memento*,[2] Leonard Shelby, is unable to create and recall memories of events that occur in the wake of, or occurred just before, a particularly traumatic event. This is termed anterograde amnesia, as opposed to retrograde amnesia where sufferers lose the ability to retrieve older memories predating some incident. In reality, amnesiacs often suffer from both forms to some degree. Without a history, a collective suffers from a similar amnesia.

Thus, at either extreme – memoriousness and antero/retrograde amnesia – life is fairly debilitating. We operate best when we have access to certain levels of recall, but are also able to develop abstractions based on ignoring some aspects and focusing on others. Historical research then involves developing new levels of abstraction, as well as challenging existing ones. The past is very much alive, and very much in and of the present. Without history, individuals and collectives alike find great difficulties in relating to others, in finding their bearings, in making intelligent decisions (Marwick, 2001). In other words, without history, individuals and collectives alike lack identity.

Thus, a discipline's identity is in part driven by the decisions and actions that are taken, concerning what the collective history should include and exclude. Incorporation of a chronology is necessary, but not sufficient; there is also a need for narrative accounts. To borrow from E M Forster, 'The king died, and then the queen died' *is a chronology, while* 'The king died, and then the queen died of grief' *is narrative*. Moreover, although histories might aim to provide answers to questions such as 'Why' or 'How' something happened in the past, historical enquiry involves far more than this.

The way in which disciplines can be considered as 'discursive practices', spawning their own reality, has been articulated by Bauman (1992), and brought to the attention of the IS community in various publications (Bryant, 2006; Bryant, 2008; Bryant and Land, 2012), although the continuing discussions regarding the 'core' of the IS discipline have consistently failed to engage with this argument. As the IS academic community pays increasing attention to historical issues, however, it is important that such activities are recognized not simply as an exercise in superimposing a narrative on some 'pure, neutral, atemporal, silent form' (Bauman, 1992: 70), but rather an act of social construction. In terms of the professions, many of which are underpinned by academic disciplines, the notion of social construction has replaced trait theory in explaining the process of professionalization. Whereas trait theory assesses professional status according to criteria such as the attainment of licensing, the passing of examinations, the formulation of a code of ethics, and the establishment of a professional association, the theory that professions are socially constructed revolves around the idea of jurisdictional conflict (Abbott, 1988). A profession can lay claim to its status by pointing to a body of exclusive abstract knowledge underpinning its operations. In library science, to take one example, this would lie in such areas as classification, cataloguing, bibliography, and bibliometrics. But often professional status is also a function of a professional group's level of success in winning jurisdictional dominance; that is, the ability to secure and maintain, through such non-expertise factors as public relations initiatives, lobbying and marketing, the predominant right to deliver services in a particular sector. Thus, to continue with the example of library science, the claim of librarians to be the 'heart and brain of the information society' (Batt, 1999) can be seen less as a sincere statement explaining the exclusive applicability of their knowledge base to the development of all information culture – something which no profession could claim – rather than as a bid to raise their professional status in a rapidly changing and, for them, potentially damaging or threatening environment.

Taking this further implies that exercises in the creation of a disciplinary history can be seen in the same light as what Hobsbawm and Ranger (1983) term 'the invention of tradition'. Hobsbawm (1983: 1) characterizes this as follows:

'Invented tradition' is taken to mean a set of practices, normally governed by overtly or tacitly accepted rules and of a ritual or symbolic nature, which seek to inculcate certain values and norms of behaviour by repetition, which automatically implies continuity with the past. In fact, where possible, they normally attempt to establish continuity with a suitable historic past .... However, insofar as there is such reference to a historic past, the peculiarity of 'invented' traditions is that the continuity with it is largely fictitious. In short, they are responses to novel situations which take the form of reference to old situations, or which establish their own past by quasi-obligatory repetition.

Moreover, Hobsbawm went on to argue that such actions of social construction serve to facilitate socialization, helping to establish collective identity, and confer legitimacy on institutions. Although Hobsbawm and Ranger were pointing out that many seemingly ancient traditions were recent concoctions and inventions, their argument applies in a far wider sense to all forms of historical writing. Thus, drawing attention to this should not be taken to imply that those concerned with delineating the 'history of IS' are engaged in some gigantic, conceptual con. On the other hand, it is worth stressing that histories are not simply discovered, they are the results of various acts of creativity and insight – and oversight. For instance, it can be pointed out that while there was entirely appropriate laudatory commemoration in 2012 of the centenary of Alan Turing's birth, at the time of his untimely death in 1954 he would at best have merited an awkward footnote. In a similar vein, it might be argued that the sustained anguishing in the IS world over identity, core concerns, and specifically IS-type theories amounts to an invented tradition centred on a substantive failure actually to invent one.

History is written by people with conscious and unconscious agendas. This was encapsulated by Carr (1961) in his succinct but highly influential book that offered a response to the question 'What is History?' He took issue with any simplistic empiricism, opening the door for what has been termed constructivist or perspectival history, or even histories. This was in contrast to those who viewed the role of the historian as one centring on detailed and painstaking research, aimed at achieving truth and

objectivity. For example, Sir Lewis Namier saw his study of eighteenth-century politics in Britain – based on immensely detailed study of Parliamentary and other records – as a project that exposed myths, displacing them with objective truths. Price (1961: 71) described this work as 'first of all, characterized by the utmost intellectual rigor. Within human limits, he read nothing into his documents that was not there, and missed little that was there'. Following Carr, and many others, it might be pointed out that Namier must have added and subtracted (perhaps even abstracted) something from the detailed records, otherwise he would be simply parroting what was there. Furthermore, it is surely the role of the historian to enhance the sources under investigation, although the extent to which such 'enhancement' can be justified based on those – and other – sources is precisely the point about what makes for convincing and edifying historical narrative.

Thus, Carr (1961: 11) argued that '[T]he facts speak only when the historian calls on them: it is he who decides to which facts to give the floor, and in what order or context'. In sum, the issue of establishing a disciplinary history is not a trivial matter, it amounts to far more than simply uncovering or re-narrating the facts of the past to which we have to add that the facts are themselves constructs developed – sometimes consciously and sometimes inadvertently – both by historians as well as by the record keepers of the past who engaged in a process of selection and invention.

Carr also stressed the instrumental value of history, believing that humans draw lessons from the past 'to increase man's understanding of, and mastery over, his environment'. This view was opposed by, among others, G R Elton (1969: 66): 'Teachers [of history] must set their faces against the … ignorant demands of society … for immediate applicability'. Those who thought that arguments such as Carr's were a licence for historians to construct history according to their own – political or ideological or populist – agendas stressed the importance of aiming at some form of historical 'truth', or at least seeking to achieve a near-consensual understanding on past events. The outcome has been that for some history retains a quasi-scientific identity, while others oppose this and offer a far more interpretative perspective on the relationship between the historian and 'the past by itself'. More nuanced views are offered by Thompson (1978: 28–29): 'Evidence is there, in its primary form, not to disclose its own meaning, but to be interrogated by minds trained in a discipline of attentive disbelief', and by G. Kitson Clark, 'Evidence must be dealt with in the same way as a kitten plays with a ball of wool'.

History as teleology

The History of the World travels from East to West, for Europe is absolutely the end of History, Asia the beginning.

Hegel (1988: 103), *Lectures on the Philosophy of History*

'History', however, has other meanings and resonances. For Hegel, and many others, history is a process culminating in an objective or aim, one that embodies a design and purpose. Hence the concept of teleology; the

Greek term *telos* meaning purpose or goal. Consequently philosophical theories of history such as Hegel's can be understood as postulating a process leading towards some ultimate aim. In some of his writings, Hegel seemed to argue that this end-point was near to being achieved in the embodiment of the Prussian state. Butterfield (1931) referred to broadly similar arguments as 'The Whig Interpretation of History', using the term pejoratively and aimed particularly at British historians who produced historical studies demonstrating that the past led inexorably to the current (nineteenth century) British constitutional settlement:

The following study deals with 'the whig interpretation of history' in what I conceive to be the accepted meaning of the phrase …. What is discussed is the tendency in many historians to write on the side of Protestants and Whigs, to praise revolutions provided they have been successful, to emphasize certain principles of progress in the past and to produce a story which is the ratification if not the glorification of the present. (Preface)

In so doing, Butterfield was warning against the tendency to read the past in terms of the present, as if what came before was largely an embryonic and less-developed precursor. This is also a characteristic of history as something that is 'written by the victors', and should raise awareness that the process of deciding 'to which facts to give the floor' is not simply dependent on the whim or fancy of the historian, but has to be seen against a larger and more complex backdrop. At least since the 1960s, various groups have challenged the generally accepted orthodox historical accounts, pointing out that these usually favour the 'pale males' at the expense of women, other ethnic groups, and various parts of the world, which were colonized or conquered in the past. Consequently, there have been movements aimed at delineating Black, Women's, Colonial, and various other histories.

In contrast to the Whig orientation to the past, Butterfield (1931) proposed that historians should see themselves as representing:

the spirit of man brooding over man's past … working not to accentuate antagonisms or to ratify old party-cries but to find the unities that underlie the differences and to see all lives as part of the one web of life'. … The historian trying to feel his way towards this may be striving to be like a god but perhaps he is less foolish than the one who poses as god the avenger. Studying the quarrels of an ancient day he can at least seek to understand both parties to the struggle and he must want to understand them better than they understood themselves. (Chapter 4)

This form of criticism serves as a caveat with regard to reading the past in terms of the present, but it affords little by way of resolution to an understanding of the nature of 'doing history' – that is, the relationship between 'the past by itself' and the work of the historian. On the contrary, as will be illustrated below, the ways in which historians can or should try to 'understand both parties … better than they understood themselves' has been a central and long-lived debate within and around historiography.

For the present context, however, it is important to draw attention to the ways in which these criticisms of partiality, based on interpreting the present as the defining point of processes anchored in the past, take on a specific hue with regard to histories of technology in general, and ICT in particular, where it is important not to see things in terms of earlier, primitive technologies leading inexorably to the current state-of-the-art devices. In many cases, current technologies are based on earlier devices that were originally invented for purposes that have little or no connection with their present use. For instance, the telephone was invented as a broadcasting device; radio was developed for one-to-one communication: When lasers were invented, no one had any clear idea how they might be useful (Bryant, 2006, Chapter 4; Winston, 1998). The electronic computer was seen initially as only having a very restricted use, with many experts predicting that no more than a few dozen would be needed worldwide.

What many of these failed predictions have in common is a set of assumptions that the past was very much like the present – but perhaps less developed, slower, and tending to monochrome. In considering technology from a historical perspective, it is crucial that attention is given not only to 'successful' devices but also to unsuccessful ones, also to the interactions between devices and wider contexts. The papers by Jacobs on the X.400 standard, and Campbell-Kelly and Garcia-Swartz on forgotten or neglected aspects of the developments leading to the widespread adoption of the internet, exemplify these issues. Winston Churchill once remarked that 'We shape our buildings; thereafter they shape us', and Marshall McLuhan then rephrased this as 'We shape our tools and they in turn shape us'. In considering historical processes around ICT, attention needs to be paid to the ways in which people make technologies and then technologies make people. This should prevent historical studies of technology resorting simply to either a 'deterministic' or conversely a 'symptomatic' viewpoint.

In his writings about the development of television, Raymond Williams offered an alternative view while rejecting both *technological determinism* and *symptomatic* readings of technology, since each in its own ways posits technology and its associated research and development as independent, asocial activities. He exemplifies each position as follows:

Deterministic 1   TV was invented as a result of scientific and technical research. Its power as a medium of social communications was then so great that it altered many of our institutions and forms of social relationships.

Deterministic 2   TV was invented as a result of scientific and technical research, and developed as a medium of entertainment and news. It then had unforeseen consequences, not only on the other entertainment and news media … but on some of the central processes of family, cultural, and social life.

Symptomatic 1   TV, discovered as a possibility by scientific and technical research, was selected for investment and promotion as a new and profitable phase of a domestic consumer economy.

Symptomatic 2   TV became available as a result of scientific and technical research, and its character and uses exploited and emphasized elements of a passivity, a cultural and psychological inadequacy, which had always been latent in people. (Williams, 1974: 11–12).

The deterministic and the symptomatic positions, although they appear contrary, share the assumption that technology is an isolated facet of existence, outside society and beyond the realm of *intention*. Anticipating Castells' argument about the relationship between society and technology, Williams stresses that technology must be seen as being 'looked for and developed with certain purposes and practices already in mind', these purposes and practices being 'central, not marginal' as the symptomatic view would hold. Thus, television cannot be seen simply in terms of the tangible technology itself, but must be located within more complex processes including systems of consumption, entertainment, communication, leisure and so on. As Castells later observed technology is social:

> Indeed the dilemma of technological determinism is probably a false problem, since technology *is* society, and society cannot be understood or represented without its technological tools. (Castells, 1996: 5, Stress in original)

On the other hand, once in place, specific technologies may be taken up and developed in ways completely at odds with those intentions, as, for instance, it happened with radio, telephones, and computers – thus, Williams' argument will only take us so far. But it does provide a caveat when gauging the ways in which our present technological capacities and devices evolved from earlier forms and inventions. Moreover, it should prevent us from simply looking back at technological developments, thinking we can understand them in terms of 'purposes and practices' of the past; something that is in the worst case inaccessible to us, or at best based on our own interpretations.

This tension between continuities, context, and contingencies can be exemplified if we consider the early development of computer technology. Babbage's design for an automated computing engine was in part grounded in his interest in the ways in which the division of labour operated under the emerging conditions of factory-based manufacturing in British cities in the nineteenth century. Hence, the importance of the influence of his visits to France in 1819 was to see how the production of mathematical tables had been organized under Napoleon, a system itself grounded in the practices of the division of labour resulting in significant increases in productivity and accuracy (Hyman (1982); also see http://history-computer.com/People/BabbageBio.html). The later recognition by Lyons that a computer could solve some of their business problems emanated from pressures for increased productivity and efficiency given their very tight margins and rising labour costs, but the aim of raising operational and administrative in part also arose from recognizing that a mathematically oriented technology that had worked well

in the context of war time efforts at code-breaking could be turned to meet other commercial objectives (Land, 2000a).

In the context of IS, historical accounts need to include consideration of the ways in which current IS phenomena of interest developed, and why others seem to have fallen by the wayside. IS historians need to investigate, for example, the advent of current technologies and practices; however, there should also be some attention paid to issues that were part of earlier IS agendas, but which seem to have been neglected, ignored, or forgotten. Thus, Enid Mumford and C. West Churchman, two of the founding members of the field, made bold and specific suggestions regarding the nature of the IS discipline. Mumford stressed that the IS discipline should focus on understanding the role of IS in solving wicked problems such as drugs and money laundering. Writing in the late 1990s, she argued that today's problems are 'new, complex, and often very threatening' (Mumford, 1999: 1): 'Some problems are so serious that despite our lack of knowledge we must make major efforts to remove or reduce them, even though the likelihood of success of doing so is poor'. Churchman suggested a similarly broad scope for the IS discipline: 'Extremely difficult problems such as global crime are exactly the kinds of problems we [IS discipline] should spend our time solving' (Churchman quoted in Porra, 1999: 20). Churchman looked to the IS discipline to contribute to solving these large and complex problems, leading to change on a wider social basis. Unfortunately, these topics have been largely neglected by the academic IS community, usually in favour of far narrower, more commercially oriented concerns rooted in the business school ethos (Land, 2000b). In 2012, we could readily add to Mumford and Churchman's concerns, calling for the incorporation of studies that look at the ways in which aspects of the 'dark side' of IS/information technology (IT) have developed, and how they might be combated (see Coopersmith, 2000; Coakes *et al.*, 2011; Rost and Glass, 2011); also the grey areas such as the role of pornography as a driver of internet development and high proportion of its use, as well as the role played by sites such as Wikileaks, which afford ways of side-stepping legal constraints on secrecy and privacy. As a discipline, we should also be asking questions such as 'How has humanity changed as a result of developments in IS/IT?', particularly with regard to issues of social justice, empowerment, the role of women, various minorities, and the potential for new forms of participation and representation.

History as a meeting of ourselves as 'Other'

The past is a foreign country; they do things differently there.

L.P. Hartley, *The Go-Between*

Hartley sums up the issue succinctly; but in recent times it is the work of Michel Foucault that has been the focus of attention for its claims regarding the ways in which the study of the past presents us with obstacles in developing any coherent and cogent understanding of the past. Foucault took issue with the ideas of those who followed Hegel, and supposed that history was teleological and outside human agency, as well as those who followed von Ranke (2010), who stressed the importance of an empirical study of history. If the former view could be seen as a 'totalizing' vision where everything could be explained as part of a universal plan leading inexorably to the present day, the latter can veer perilously close to the Dickensian character in *Hard Times*, Mr. Gradgrind, whose school teaches 'facts only facts'.

Carr sought to undermine any Ranke-influenced study of history, at least to the extent of trying to ensure that historians at least were aware of their own choreography, giving some characters and aspects 'the floor', leaving others at best waiting in the wings, at worst, excluded altogether. But Foucault offered a more trenchant critique, and in some respects is regarded by many historians as an anti-historian and academic provocateur. The historical totalizers, such as Hegel, sought to explain the broad sweep of history as an unfolding of a divine or near-divine essence, thereby stressing the continuities between the past, the present, and the future. Moreover, such perspectives posited key characteristics as 'necessary' or 'essential', and thus others as contingent. Foucault (1967, 1994), in his key works such as *Madness and Civilization*, and *The Birth of the Clinic*, sought to stress the *dis*continuities that arise when investigating topics such as the history of madness or practices of medical confinement, in many instances seeking to show that what for us in the present is regarded as 'necessary' and 'essential' was actually regarded as contingent for our predecessors – and vice versa. Studying history then becomes an activity of seeking to discover 'the other', and thereby to confront ourselves. Much as we may wish to look back on the past as something potentially familiar, Foucault wishes to point out that we should be prepared to be shocked by its strangeness, which in turn should make us confront the present in a similar manner. This then invites the converse that what at first sight appears strange and unfamiliar turn out on inspection to have a close affinity with some present phenomenon. (Thus, we might note that the role of the adjutant in military history has a bearing on our understanding of today's high-tech decision-support systems.) The paper by Gannon offers a glimpse of both sides of this argument in considering the ways in which the IS function developed in corporations where the associated technology and the people associated with it were seen as outsiders.

In his early work, Foucault (1969: 139) used the term 'archaeology' to characterize his approach, distinguishing it both from positivist, causal histories – which merely scrambled about on the surface – as well as from hermeneutics – which sought 'to rediscover the continuous, insensible transition that relates discourses, on a gentle slope, to what precedes them, surrounds them, or follows them'. (NB: Foucault, as one might expect, has his idiosyncratic characterizations of the positivist and hermeneutic projects, but essentially the former centres on facts and seeks objectivity, and the latter focuses on interpretation and perhaps some form of consensus between different parties to some dialogue.)

In his later work, Foucault (1984) enhanced his archaeological perspective with what he saw as a genealogical one, explicitly using this term in the same way, and as homage to

Nietzsche's work on the genealogy of morals (Nietzsche, 2008). If the archaeological perspective stressed the structural aspects of history, undermining the idea of the primacy of the individual or some form of historical consciousness at play, the genealogical aspect placed stress on the accidental and contingent nature of developments.

> Genealogy does not pretend to go back in time to restore an unbroken continuity that operates beyond the dispersion of forgotten things; its duty is not to demonstrate that the past actively exists in the present, that it continues secretly to animate the present, having imposed a predetermined form on all its vicissitudes. Genealogy does not resemble the evolution of a species and does not map the destiny of a people. On the contrary, to follow the complex course of descent is to maintain passing events in their proper dispersion; it is to identify the accidents, the minute deviations-or conversely, the complete reversals-the errors, the false appraisals, and the faulty calculations that gave birth to those things that continue to exist and have value for us; it is to discover that truth or being does not lie at the root of what we know and what we are, but the exteriority of accidents. (Foucault, 1984: 81)

Foucault's concept of 'discursive formations' or 'epistemes' is akin in important respects to Kuhn's (1996) concept of paradigms. At the heart of both lies the view that knowledge and understanding can be thought of as systems that operate above and beyond – but through – individuals. Historical analyses have to be undertaken with the understanding that the past is foreign, thus the relationship between 'the past by itself' and 'the historian's thought about it by itself' involves different discursive formations or paradigms – a similar consideration applies to the accounts of different historians. One of the criticisms of this view is that if this is really the case then how does any understanding develop between different formations. Are paradigms 'incommensurable'? Clearly, they are not, or we have to act as if they are not, otherwise there would be no way in which we could even begin to make sense of the past. In using Nietzsche's concept of genealogy, however, Foucault alerts us to the 'faults, fissures, and heterogeneous layers' that characterize historical development, subverting efforts to characterize the process from past to present as the advent of increasing rationalism and continuous improvement.[3]

For Foucault, these processes are not merely of academic interest. In line with his formula that 'power creates knowledge', the 'constructing' of the knowledge bases of disciplines and professional practices calls upon an expert-led strategy of recreating an account of the past in accordance with the requirement that any discipline or professional domain needs a history.

The uses of history

> The past is never dead, it is not even past. (William Faulkner)

The term 'History' (much like 'IS') refers both to the discipline as well as to the topic of study. In the case of 'History', the ambiguity is usually resolved by the context, although with the current contraction of higher education across many countries, and particular targeting of the humanities, phrases such as 'the end of history' might refer to either. (Some UK universities have already witnessed the 'end of chemistry', and the 'end of mathematics' is certainly looming in some UK institutions.)

For many people, 'history' is something best left to the historians and others interested in the past, but the quote from Faulkner encapsulates the argument that 'history' is very much part of the present for each and every one of us. In our everyday and professional lives, we constantly draw upon what has happened in the past, or rather particular versions and interpretations that have been both experienced directly and handed down to us. To paraphrase Carr, decisions are constantly taken regarding *which facts to give the floor, and in what order or context*: The opening event of the 2012 Olympics in London – which celebrated Britain's industrial revolution, but ignored its more unsavoury aspects such as child labour and other forms of exploitation that accompanies it – being a case in point. These decisions, however, are not taken by people individually, but as part of collectivities or communities that range across families, friends, peers, colleagues, and cultures, exemplifying Hobsbawm's regard for the establishment of identity and legitimacy through socialization. In this sense, 'history' is very much part of the present, a collective activity to which we all contribute, constituting and sustaining it.

Moreover, history has a number of other uses or roles. Histories can provide analyses of the historical record in order to offer bases for making sense of and explaining contemporary phenomena. For example, Porra *et al.* (2005, 2006) in their extended study of IT at Texaco seek to offer an explanation why, despite recognized success, the IT Department over many years failed to be fully accepted by Texaco management, and was constantly attacked and finally largely outsourced. The authors accomplish this using systems theory as a tool for analysing the historical record, producing an historical account from a particular perspective that adds to existing narratives.

Histories also are used to establish a record of the past, and despite E. M. Forster's distinction between chronology and narrative it is important that people do understand the dates and sequences of events in the past. (Sellar and Yeatman famously sought to provide a history of England without including any dates, but had to settle for including two – *1066 and All That: A Memorable History of England, comprising all the parts you can remember, including 103 Good Things, 5 Bad Kings and 2 Genuine Dates* – but this should be considered the exception, not the rule!) Once historians move from providing dates of specific events to offering frameworks centred on sequences of particular stages or phases, however, they have moved well beyond chronology, and need to engage with critiques such as those derived from Carr, Foucault, and numerous others. Hirschheim and Klein's (2012) history of IS in the *JAIS* special edition is a case in point. It offers a useful account from the authors' perspective, but needs to be taken as a starting point for further work, and seen as a spur for conscious research to uncover what Campbell-Kelly and Garcia-Swartz term 'The Missing Narratives'.

Developing from Carr's point about specific agendas, and Hobsbawm's 'invented traditions', there is no doubt that

historical accounts play a key role in propaganda and myth-making. This often amounts to a mix of selectivity and pure make-believe as such accounts are developed to create a story to enhance or glorify, demean or debase, some aspect of society, politics, nationhood, or technological innovation – thereby identifying heroes and villains. In England, Newton is upheld as the inventor of calculus; in Germany, the credit is given to Leibniz. Most people if asked assume that the first commercial application of computer technology took place in the United States, rather than in the more prosaic surroundings of a British company most noted for its tea shops (Caminer et al., 1998). The historian Ferguson (2003) is an example of historian bent on destroying myths, but who nevertheless is often accused of producing historical accounts that owe too much to his own ideological, contrarian thinking. Ferguson is also an example of the ways in which history can be used as entertainment – the wow factor. Other examples include the histories of code breaking at Bletchley (both documentary and fictionalized drama), the construction of Colossus, and the story of the first business computer LEO, built by a catering company (Ferry, 2003 and Mason, 2004), where the wow factors include (a) that this technological advance was developed in a catering company, and (b) that it took place in the United Kingdom and not in the United States. For an attempt at probing the historical record to attempt to explain this, see Land (2000a), and we must stress that simply offering such accounts as historical entertainments does not detract from them also being highly instructive.

A brief history of IS history (IS?)

History, said Stephen, is a nightmare from which I am trying to awake.

James Joyce, *Ulysses*

One of the perplexities of the Olympics in London in 2012 was the constant reference to 'Team Great Britain (GB)': Why was it not 'Team UK'? Or for that matter, how come that in football ('soccer' to our US readership!) there are separate teams for England, Wales, Scotland, and Northern Ireland? Without going in to too much detail, the UK refers to the union of England, Scotland, Wales, and Northern Island, the full title is 'The United Kingdom of Great Britain and Northern Island'. 'GB' refers to the first three components of the UK, since athletes from Northern Island had the option of competing for Eire (Republic of Ireland) 'Team GB' was preferred to 'Team UK'.

'When people say England, they sometimes mean Great Britain, sometimes the United Kingdom, sometimes the British Isles but never England'.

How to be an Alien' by George Mikes[4]

Consequently, historians must be careful and consistent in their use of terminology if writing about the history of this part of the world. Winston Churchill found a very useful – although more far-reaching – resolution to the problem in the title of his four-volume work: *The History of the English-Speaking Peoples*. In writing about IS, a similar set

of terminological conundrums need to be confronted, perhaps in the form of a question such as:

'What is the correct term for the study of the use and application of information and communication technologies?' – Is it (a) Information Systems; (b) Information Management; (c) Information Technology; or (d) Informatics? (Bryant, 2006)

Among the four editors of this special issue, we can count the first UK Professor of IS, one Professor of Informatics, one Professor in a School of Library and Information Science, and one Professor in a Department of Decision and Information Sciences. Moreover, other terms and abbreviations also add to this morass – for example, IT, ICT, Management Information Systems (MIS). Even the abbreviation IS itself is ambiguous; apart from IS, the term could also be taken to refer to Information Studies or Information Science. The term 'fragmented adhocracy', first applied to management studies in the 1980s, has always been an apt one for IS, but anyone offering an overview of IS history needs to give readers some idea of the central subject of such accounts. IS historians cannot simply assume that there is any robust consensus on even this most fundamental issue, and care needs to be taken when using terms such as IS, IT, ICT, and the like – some writers often use these terms as near synonyms, others seek to make clear distinctions between them. The papers that follow comprise various responses to this proto-disciplinary morass. We do not seek to offer a resolution to this, that is not the primary purpose of this paper or this issue of the journal, and in any case we would argue that seeking to articulate some definitive account is unwarranted and at best nugatory. We can, however, stress the importance of encouraging a wide variety of different approaches to the topic of IS history, and point to the work that has been done, such as by Hirschheim and Klein (2012), building on the earlier work of Mason.

Porra et al. (in a forthcoming paper) have pointed out that one of the earliest historical studies in the IS literature is that of Mann and Williams (1960) who looked at the dynamics of organizational change associated with the implementation of electronic data processing equipment. This did not lead to further specifically historical accounts since in these early days the preferred format within Academic IS appears to have been case studies usually centring on ground-breaking and innovative IS implementation and use. Pettigrew (1973) did seek to provide a longitudinal case study where theoretical questions were raised and explored based on a historical narrative, and Markus (1983) offers a case study where historical events are analysed through three theoretical lenses. Yet neither discussed the specifically historical methods used in producing these narratives.

McFarlan (1984) first noted the absence of historical studies in a research colloquium titled *The Information Systems Research Challenge* held at Harvard University. This concern later led to the establishment of the Harvard MIS History Project, which ultimately produced the historical studies *Airline Reservation Systems: Lessons from History* (Copeland and McKenney, 1988), and *Bank of America: The Crest and Trough of Technological Leadership* (McKenney et al., 1997). Neither study gives any space to

present an account of the methods used, although Mason's paper of 1997 does address the matter.

Apart from these historical accounts of corporate IT systems, there have been a number of histories of computer development. Some have centred on specific machines, including LEO – the world's first commercial computer (Caminer *et al.*, 1998) – as well as more general historical analyses of computer technology – for example, Beniger. Kidder's (1981) contemporaneous account of the development of the DG Eclipse offers a different form of account that would now be read in historical terms. There are historical analyses on the development of the MIS field, such as that by Dickson (1981), also Friedman and Cornford (1989) on the evolution and growth of the systems analyst profession and the systems analysis function. Porra and colleagues have sought to take up the earlier work of Mason *et al.* (1997) and McKenney *et al.* (1997) in their historical accounts published in *MIS Quarterly* (Porra *et al.*, 2005) and *Information and Organization* (Porra *et al.*, 2006).

History continues to be made, both in the sense of historians writing history and in the sense of unfolding events. In the IS sphere, history in the first sense is in its infancy, but in the latter sense it is happening at an incredible pace. The IS community, academic, and practitioner owes it to posterity to record as much of that history as possible. In this way, there will be not a record of the 'unvarnished truth', but rather a rich source of material for researchers of the future; also a basis for educating and enlightening newcomers to the IS community and beyond. Some progress in that direction is being made with, for example, the numerous case studies emerging from IS research. But these primarily focus on the corporate world, helping to engender an understanding of IS success or failure – for example, Clemons and Row (1988) focuses on success, Mitev (1996) on failure, and Porra *et al.* (2005, 2006) attempt to explain a puzzling phenomenon. A few others have 'written-up' studies of old applications, partly to show what lessons can be learned from them, but also partly to put on record the achievements of the IS pioneers (Land, 2006). Many more studies of old IS are needed while those involved remain to offer their memories. One way is by the collection of Oral Histories, and the IFIP Working Group 9.7, concerned with Computer History, has recently sponsored a book edited by its chairman Tatnal (2012). A chapter entitled 'Remembering LEO' sets out some of the ways the IS community can record both old and contemporary history (Land, 2012). If we regard history as a valuable resource for the study and understanding of IS then as a community we must be much more systematic in ensuring that the student of the future has the available historical resource we can create.

None of the papers selected for this special issue and the subsequent one tries to tackle the whole subject of IS history, although those that appear in the following pages do seek to outline some core features of the field in the process of taking a particular historical focus. Campbell-Kelly and Garcia-Swartz put forward an argument about the development of the internet that counters many specific aspects of existing accounts, and they point to the ways in which these narratives are in many senses examples of a Whig interpretation of ICT history. Jacobs complements this with his account of a technology and associated standards that are now seen as a failure, and consequently ignored or downgraded, but from which it is important that lessons are learned. Heinrich and Riedl offer an insight into the ways in which concerns around ICT developed in the German-speaking context in ways that are markedly different from those found particularly in the UK and the United States, while Gannon's paper is explicitly addressed to several audiences, both within and without the IS academic and IS practitioner communities. It offers an historical account of the early days of the introduction of ICT and IS into large corporations, using a range of perspectives that encompass interpretive approaches, first-hand accounts, and what might be seen as the start of an ethnography of IS practice. Finally, Bernroider and colleagues provide a framing of the papers published in the *AIS* basket of journals from the mid-1990s to 2005 that highlights the diversity and multi-disciplinary nature of the discourses they encompass.

There are also key differences between the ways in which some of the terms are understood or claimed in different parts of the world. Information Science is seen by some as focused on provision of information, particularly within the public domain, with IS then seen as having primarily a commercial focus. The term 'informatics' is now hotly contested, and could itself be the subject of an interesting history that traces its use in various languages in the mid-to-late twentieth century, its use by Donna Haraway (1985) who defined the term as the 'technologies of information as well as the biological, social, linguistic, and cultural changes that initiate, accompany, and complicate their development', and its more recent appropriation by computer scientists. Thus, in some institutions, 'informatics' is zealously guarded by computer science, but extended terms such as 'social informatics' or 'community informatics' or 'health informatics' can be claimed without challenge by other faculties.

Today, the IS world encompasses or is closely dependent upon areas and fields such as MIS, IS, IT, Information Science, Design Science, Computer Science, AI, Software Engineering, HCI, Knowledge Management (KM), and recent hybrids focusing on specific topics such as Security, Computer Forensics, and Cyberwarfare. How this state of affairs came about affords a series of challenges for historians to explain the processes that led to these different positions – perhaps centring on the nature of the boundaries and their purported distinctiveness, the role of institutions, government policies, technical developments and so on.[5]

As was stated earlier, with regard to Foucault and Bauman, any such efforts must take account of the ways in which a discipline relates to its history. Thus, once we allow that disciplines can characterize their own subject concerns, and also create their own histories – as well as the more common view that sees the inverse of this – then 'doing IS history' can encompass moving from current institutional aspects of the IS field – for example, journals, conferences, centres of excellence, specific individuals – to characterizations of the field itself. In the papers that follow, there are examples of the ways in which journals act as institutional resources, in particular in the paper by Bernroider and colleagues.

IS history must then be seen as part of the IS central agenda, contributing to the delineation of the field and also

offering possible routes for its future directions. Consequently, it is critical that historical analyses oriented around ICT, IS, and the like are open-ended, participative, and encourage inclusion of a wide range of interests and specialisms. If History is indeed just 'one damn thing after another' (attributed to Arnold Toynbee) then with regard to the history of IS the challenge is to decide what each 'damn thing' might actually be, and the sequence and interrelationships that bind them. Hirschheim and Klein's paper offers one perspective on this, using the device of four overlapping eras. But it is important to bear in mind the dictum that 'Epochs in the history of society are no more separated from each other by hard and fast lines of demarcation than are geological epochs' (Marx). Moreover, frameworks such as Hirschheim and Klein's need to be supplemented and challenged by those that offer different perspectives, scopes, and even starting points – indeed, it will almost certainly be necessary to consider the pre-history of IS, conceptualizing the development of 'systems of information' that pre-date the computer revolution.

At the end of their paper, Hirschheim and Klein state that they think it important that studies of the sort they offer will provide the basis for 'a shared history' and an alignment of perspectives. They recognize, however, that it is also critical to encourage participation and debate on the subject, although they worry that this might lead to 'sectarianism', accompanied by mutual indifference or animosity, and a failure to engage in critical dialogue. It seems clear that their paper is intended to be understood as part of a process of establishing a basis for disciplinary legitimacy and identity, but there is a certain irony in their worrying about splits into 'sub-communities', when IS itself can be seen as an upstart breakaway from various parental disciplines such as Business Studies or Computing, having largely ignored the pre-existing area of Information Science. More account needs to be taken of Foucault's project of using history as a way of developing an understanding of ourselves as 'other'. Historical accounts are then seen not only as eliciting alternative and challenging chronologies, but also as challenging already existing accounts, perhaps in other areas and disciplines.

Ideas about IS are understandably assumed or tacitly accepted until something occurs to undermine or question them, and it is at times such as these that many assumptions become articulated or recognized as open to multiple interpretation. For instance, in 1999 Lynne Markus asked: 'What Happens if the IS Field as We Know it Goes Away?' She was not arguing that the field will actually disappear in the sense that 'Horse and Buggy' studies might have disappeared – or certainly declined – had it ever existed in the nineteenth-century academy. On the contrary, the threat was not one of disappearance, but of dissipation and dissolution. 'As computers increasingly become embedded in every aspect of personal and organizational life, it is less and less possible to distinguish between computing and *everything else*' (1999: 176). The unthinkable, as Markus (1999: 175) put it, was that the IS disciplinary turf will be cut up and hauled away by a host of other disciplines: 'We bemoan the fact that intellectual communities like organizational behaviour, operations management, and marketing are *discovering* information technology (IT) as an important topic for *their* teaching and

research. … we see them as laying claim to research domains that we think of as ours'.[6] Markus' solution to what she terms 'Academic IS' is that it should focus on 'electronic integration of socio-economic activity', although she left her readers with a perplexing coda, calling for jettisoning the Academic IS field of the past 'so that we can create the IT (sic) field of the future'!

Markus was, however, quite correct to note the ways in which Academic IS was indeed under threat, something that has continued in recent times as the funding for higher education has been squeezed, resulting in pressures from other disciplines as well as those from outside the Higher Education (HE) sector. The furore sparked by Carr's (2003) HBR article 'IT Doesn't Matter' was, among other things, an example of the ways in which issues around IS are not readily understood, even by those who should be expected to know better, given their professional roles and responsibilities. Responses to Carr, as well as the motivations behind arguments such as that proffered by Markus, are based on the assumption that IS is 'a good thing', but this is not a position that can be taken for granted.

Given this state of affairs, the need to provide historical accounts of IS becomes a pressing matter – both as an issue of academic-cum-institutional survival and a wider, social one. Hirschheim and Klein's history of the IS field arguably can be seen as providing a list of 'who is who', focused largely on the early days of the field, and inevitably there will be those who feel that much and many have been left out. Responses should then take the form of articulated accounts, that not only expand upon or challenge Hirschheim and Klein, but also complement their work and so provide a wide and differentiated basis for people's understandings of the IS field. In seeking to respond to questions such as: 'Whose IS history?' and 'What IS history?', IS historians will be contributing to a general understanding that IS does constitute an important and developing field of study, with valuable contributions to make to contemporary issues and concerns.

As was noted earlier, those working within IS have paid scant regard to IS history. McFarlan's clarion cry regarding the absence of historical studies went largely unheeded until comparatively recently. Land (2010) has long argued the need for a historical underpinning and understanding of IS, most recently in the twenty-fifth anniversary edition of the *Journal of Information Technology*.

Ramiller (personal communication) distinguishes two broad roles for historical enquiry in the context of the IS field, each with its own specific approach. The first one he terms 'history of the field', which he sees as providing historical accounts that reflects on our field's evolving scholarship. Hirschheim and Klein's IS field history belongs to this first category. The second approach he terms 'history in the field'. This is the use of history in understanding substantive phenomena that are of interest to our disciplinary community. There are numerous examples of this, ranging from studying the impact on teenagers of social networks (e.g., Pempek *et al.*, 2009) to how the use of EDI changes the relationship between business partners (e.g., Iacovou *et al.*, 1995), and including studies of the economic impact of global outsourcing on national economies (e.g., Grossman and Helpman, 2005). The paucity of papers reporting on such studies in the 'top'

IS journals, however, might be seen as indicative of the way in which the IS agenda has been narrowed by the processes of disciplinary gatekeeping over the years.

With regard to Ramiller's first aspect, it could be well be asked 'What took us so long?' With regard to the second one, however, we are in danger of missing the boat, and must be ready to acknowledge that many such accounts are already underway, and that IS-related contributions will have to take their place as part of various trans-disciplinary encounters (Bryant and Land, 2012). For instance, topics such as the development of the impact of ICT and IS (however defined) on everyday life are already much studied, as are histories of inventions and technologies in general – but now focused specifically on trends leading up to mobile technologies and network technologies as embodied in the iPhone and Facebook, respectively.

Such accounts must also encompass ways of investigating the historical developments underlying the changes that have occurred in the ways in which we use and access information in everyday life – that is, outside academic and commercial contexts. In so doing, we can heed the example of others who have sought to delineate 'history from below' such as the Annales School (Burke, 1990), as well as those offering historical accounts emanating from specific ethnic, gendered, or other perspectives.

Doing and making IS history

Whatever one's position might be with regard to what constitutes the most effective, rigorous, and well-founded way of undertaking historical research and historical writing, the extensive debates on historical methods and historiography cannot be ignored. Historians now have to be prepared to contend with issues emanating from social sciences, economics, and politics, as well as from the humanities, particularly cultural, literacy, and feminist studies. Moreover, if IS history is to become part of *what IS researchers do*, it is essential that there is an understanding of historical methods and techniques. One obstacle to this is that historians have often been reticent about the assumptions and techniques they use (Marwick, 2001). Historians do not necessarily see their practices in philosophical terms, preferring to focus on their work rather than studying or sharing discussion about their own practices (Porra *et al.*, in a forthcoming paper). One central assumption historians share, however, is that their narratives have to be based on careful examination of past evidence. But it should not be thought that this implies a simple-minded objectivism. In the light of the critiques from Butterfield, Carr, Foucault, White, and many others, historians cannot simply retreat to Price's claim that good historical research is ensuring that one reads in nothing that is not already there.[7] Evidence in whatever form has to be viewed with healthy scepticism if not suspicion. Indeed, IS academics should be well aware of this, given the ways in which digitized information now forms such an important component of actual and potential historical evidence. Computer-based IS need to be specified, designed, and implemented, necessarily including some aspects at the expense of others, also placing some aspects at the forefront of users' attention, while pushing others further away. An investigation of such systems at a later stage could not simply take things at face value, but would involve seeking to uncover the processes underlying the development and later operation of the system, which would be by no means a straightforward undertaking (calls perhaps for a project on *Information and Systems Archaeology*). Similar strictures apply to all historical research, whatever sources are involved.

Moreover, in 'doing history' of any sort, one must take account of the ways in which it might be 'done' differently by people from different regions, linguistic backgrounds and so on – the paper by Heinrich and Riedl for instance offers an account of the development of Business Informatics among the German-speaking IS community centred on *Wirtschaftsinformatik*. This will involve awareness of how various polar antitheses might play out in the history both 'of' and 'in' the IS field (cf., Pedersen, 2002). Such antitheses include regional contrasts, rich *vs* poor, upper *vs* lower class, privileged *vs* not-so-privileged IS folk, English-speaking *vs* non-English speaking. IS historians need to ponder issues such as power and resistance, authority and legitimacy, order and obedience, governance and coercion. In the same vein, we should better understand the meaning of other axes of social differentiation (such as gender and race) related to IS.

IS historians need to face the many conscious choices that need to be made with regard to the philosophical, theoretical, and methodological issues related to historical research and historical narratives. In this way, they can participate effectively in the *unending dialogue between the present and the past* (Carr, 1961: 30). IS academics also need to ensure that our contemporaries – students, colleagues, and those in other areas of our academic institutions and funding bodies – are aware of the main themes and issues in IS history. This will involve seeking to focus on certain continuities and discontinuities, such as the way in which terms such as 'information' and 'communication' have been understood and used both before and after the advent of digital computers and ICT in general. Williams (1976: 63) noted that:

> In controversy about communication systems and communication theory it is often useful to recall the *unresolved* range of the original noun of action, represented at its extremes by *transmit*, a one-way process, and *share* … a common or mutual process.

Indeed, the history of technology is not merely a case of continuities or discontinuities, but also one of surprisal and confrontation. This often occurs as a result of the ways in which ICT develops and becomes imbricated into various facets of our social existence, often bringing out hitherto neglected or unrecognized aspects of those facets or practices. For instance, the focus on 'office automation' in the 1970s and 1980s was initially on using new technology for office-situated tasks such as filing, copying, and typing. Yet it soon became clear that the purpose and function of the office was not merely centred on these tasks; the office was also critical as a site of informal exchange and focus for aspects of organizational culture and learning. Similar observations might be made with regard to developments around e-commerce, e-government, and social networking, each initially being seen as a mechanism with ramifications in terms of efficiency and effectiveness, but later understood to have substantive impact as well as enhancing our understanding of the pre-existing state of affairs.

Markus' fear that the disciplinary turf of IS will be cut up and dragged away from us continues to be well-founded, indeed in some countries it may be even more pressing than it was in the late 1990s. Thus, there is the danger that in researching IS history we are simply writing our own epitaph. On the other hand, historical narratives centred on IS may well help make the case for the distinctiveness of the field, simultaneously demonstrating the ways in which it relates to its precursors as well charting potentially fruitful inter-disciplinary alliances. Efforts over the past 10–15 years or more have largely centred on the development of characteristically distinctive IS theories, yet ironically the range of theories 'borrowed' and adapted from elsewhere has continued to grow as evidenced by the website/wiki devoted to 'theories used in IS research'.[8] Perhaps, it is time to pay less attention to creating IS theories, and more to creating IS histories. This will involve remedying the lacunae that Hirschheim and Klein lament in the knowledge of those attending an IS conference who did not know the relevance and meaning of LEO. It will also involve ensuing that there is an understanding of the derivation of terms such as 'the registry', now a commonplace among those with problems with Windows. Students should have read about or at least have some knowledge of LEO, and perhaps they might also be advised to read fictional 'pre-histories' such as *The Difference Engine* by Gibson and Sterling (1991). We should also pay attention to parallel histories of earlier and other technologies for any lessons that might be drawn. For instance, it is worth reading the report on the 1953 symposium on Computing edited by B. Bowden under the title 'Faster Than Thought', published by Pitman and now available on Google.[9] It now appears remarkably prescient with regard to the impact of computer technology, and differs greatly from the very conservative forecasts reputedly emerging from IBM's chief Tom Watson (see below).

Some of the papers that follow (e.g., Campbell-Kelly and Swartz, and Jacobs) look at technologies that failed to take off, and in writing the intellectual history of ideas related to IS we need to record the ways in which central IS-related ideas grew and/or diminished over time, drawing attention to the faddishness of the field, particularly in terms of topic such as MIS, Total Quality Management (TQM), BPR, and various other TLAs![10] This needs to be part of an IS historical account that counters the pervasiveness of the 'good news' view of technological advances, itself an example of the Whig interpretation of history. Such efforts can take their place as part of an acceptance of Foucault's admonitions regarding the changes in what is regarded as essential and what as contingent. This applies particularly to predictions and prognostications about technology, there being a long history of statements that in retrospect appear fatuous. For instance, in the nineteenth century, there were initial warnings that London would soon be knee-deep in horse droppings; later, as cars became more popular for the very rich, this changed to admonitions that there would soon be a shortage of chauffeurs. With regard to computers, this readership will be well aware of the statements relating to the maximum number of computers that would be needed worldwide (around 100), or the lack of any demand for a computer in the home.[11] An understanding of the rationales behind such claims might help in our response to current ones that 'Google is making us stupid' (Carr, 2008), or that our brains are being changed by our use of the internet (Greenfield, 2003).[12]

But we need to be careful in the way in which we seek to accomplish the dream of belonging that underlies efforts involved in creating an IS history'. In the UK, there now exists an organization that goes under the grand name of The Worshipful Company of Information Technologists. It has been granted this status as number 100 on a list of Livery Companies that march in order of their numbering at the annual parade for the incoming Lord Mayor of the City of London. They take their place together with the Worshipful Companies of Tax Consultants and International Bankers. Their website proclaims that:

> Each livery company has an armorial bearing or coat of arms. Our own coat of arms symbolises our identity and objectives in the following ways: Vert (green) is associated with video displays. Azure (blue) and the stars scattered on the shield represent electricity, the power that enables IT. The stars also spread light, just as IT spreads knowledge. Or (gold) is one of the best conductors of electricity. The book and keys symbolise knowledge and access to knowledge. The crest features Mercury, the messenger god, who embodies communication. The griffin (half lion, half eagle) and Pegasus (the winged horse) symbolise energy, speed, intelligence and reliability. Our company motto, Cito, means 'swiftly'. As well as describing the way our members apply IT, the word incorporates the initial letters of our name, the Company of Information Technologists. http://www.wcit.org.uk/members/anon/new.html?destination = %2Findex.html

Like many of Dickens' parodies, reality is not that far from his fictional creations: not so much a case of *caveat emptor*, rather 'cavete historici'!

Notes

1 http://en.wikipedia.org/wiki/Jill_Price, accessed 9 December 2012.

2 http://www.imdb.com/title/tt0209144/, accessed 9 December 2012.

3 (NB: One of us in commenting on an early draft posed the question 'I wonder if a distinction between "foreign" and "alien" would be useful? We cannot hope to understand that which is alien, but foreigners are our cousins'. This evoked the response that in the United States, two of our numbers are themselves classified as aliens!)

4 The British Isles is yet another term – but a geographical one. This English junior school website offers a very clear explanation http://resources.woodlands-junior.kent.sch.uk/customs/questions/britain.html, accessed 9 December 2012

5 In preparing this essay, one of our number suggested that we might try to produce a family tree of the different areas and the ways in which they had grown and interrelated. But we decided that whatever we did produce would be at best highly partial and contentious – moreover, we would find it difficult to indicate the differences between parts of this 'global family' emanating from different parts of the world.

6 It is not exactly clear who is included/excluded in Markus' 'we' and 'ours' – see Bryant and Land (2012) from where this specific point is taken up.

7 For more about historical methods and various influences upon them see, that is, Bloch (1953); Carr (1961); Gottschalk (1969);

Hexter (1971); Shafer (1974); Tuchman (1981); Novick, P. (1988); Bijker *et al.* (1990); Kieser (1994); Howell and Prevenier (2001); Marwick (2001); Wineburg (2001); Cannadine (2002); Jones and Zeitlin (2007).

8 http://www.fsc.yorku.ca/york/istheory/wiki/index.php/Main_Page, accessed 9 December 2012

9 http://archive.org/details/FasterThanThought, accessed 9 December 2012

10 Three Letter Acronyms

11 A number of early forecasts have been reported including from IBM's Tom Watson, Howard Aitken, and others. Most of these reports are themselves myths and good examples of how we *make* history – see http://en.wikipedia.org/wiki/Thomas_J._Watson.

12 Each of these might be termed as an example of 'eminence-based research'.

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About the authors

Antony Bryant is currently the Professor of Informatics at Leeds Metropolitan University, Leeds, UK. His current research includes investigation of how the Open Source model might be developed as a contributory feature for the reconstructed financial sector in the wake of the economic melt-down, coining the term *Mutuality* 2.0 and developing the concept in various contexts.

He has written extensively on research methods, being the Senior Editor of The *SAGE Handbook of Grounded Theory* (SAGE, 2007) – co-edited with Kathy Charmaz with whom he has worked extensively within the area of Grounded Theory and research methods in general.

Alistair Black is a full Professor in the Graduate School of Library and Information Science, University of Illinois at Urbana-Champaign, USA. Recent authored/co-authored books include *The Early Information Society* (2007) and *Books, Buildings and Social Engineering* (2009), a socio-architectural history of public libraries in Britain before World War II. With Peter Hoare, he edited Volume 3 (covering 1850–2000) of the *Cambridge History of Libraries in Britain and Ireland* (2006). He is currently the North American editor of *Library and Information History*, also the co-editor of *Library Trends*.

Frank Land started his career in computing with J. Lyons in 1953, working on the pioneering LEO Computer. In 1967, he joined the London School of Economics to establish teaching and research in systems analysis, becoming Professor of Systems Analysis in 1982. In 1986 he joined the London Business School as the Professor of Information Management. He retired in 1991 and was appointed Emeritus Professor at the LSE in 2000. He is a Fellow of the British Computer Society and was awarded a Fellowship of the AIS in 2001 and the AIS LEO Award in 2003.

As a researcher, Frank has worked with Enid Mumford and others on sociotechnical ideas since the early 1970. More recently, he has become involved with work in Knowledge Management, focussing on the manipulative aspects of KM.

Jaana Porra is an Associate Professor at the University of Houston, C.T. Bauer College of Business, Texas, USA. Her research interests include: IS history, long-term organizational and IS evolution and change, colonial systems, systems theory, and qualitative research methods. Together with Rudy Hirschheim and Michael S. Parks, she has written an account of the IT function within Texaco. She has published in journals such as *Information Systems Research, Management Information Systems Quarterly, and Journal of the Association for the Information Systems.* Before her academic career, she worked in the IS industry in Finland.