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Invoking politics and ethics in the design of information technology: undesigning the design

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Abstract. It is a truism that the design and deployment of information and communication technologies is vital to everyday life, the conduct of work and to social order. But how are individual, organisational and societal choices made? What might it mean to invoke a politics and an ethics of information technology design and use? This editorial paper situates these questions within the trajectory of preoccupations and approaches to the design and deployment of information technology since computerisation began in the 1940s. Focusing upon the dominant concerns over the last three decades, the paper delineates an interest in design and use in relation to socio-technical theories, situated practices and actor-network theory. It is argued that each of these approaches is concerned with a particular form of politics that does not explicitly engage with ethics. In order to introduce ethics into contemporary debates about information technology, and to frame the papers in the special issue, it is argued that Levinas' ethics is particularly valuable in problematising the relationship between politics and ethics. Levinas provides a critique of modernity's emphasis on politics and the egocentric self. It is from a Levinasian concern with the Other and the primacy of the ethical that a general rethinking of the relationship between politics, ethics and justice in relation to information and communication technologies can be invoked.

Key words: design, ethics, information technology, justice, Levinas, other, politics, undesigning

Introduction

“Values, opinions and rhetoric are frozen into code”, so say Bowker and Star (2000) in their book *Sorting Things Out: Classification and its Consequences*. Their study of the ways in which categories and standards shape and become embedded in a range of classification systems depicts ‘classification work’ as often invisible. For Bowker and Star, drawing upon the interactionist tradition, the moral and political implications of classification practices are significant because infrastructures embody particular assumptions and downplay others. That the design of information and communication technologies is vital to the way we live our lives, how work is conducted and how societies are ordered is a self-evident truism. But how are choices made, what kind of knowledge is brought to bear upon ‘classification in the making’, and on what terms the development and deployment of IT is amenable to examination, intervention and reworking remains a prescient issue. Such concerns prefigure a number of questions. What might it mean to invoke a politics and ethics of information technology design? How are the boundaries between

design and use delineated? How is the movement between politics and ethics in relation to IT enacted? What practices are conducive and desirable for a political and ethical encounter with IT? These are indeed questions of our time – ones that we suggest deserve urgent, serious and sustained attention.

Information and communication technologies are associated with a pressing and under-researched paradox despite the burgeoning literature on technological infrastructures. IT is equated with transforming the practices of everyday life, affording new ways of working that are increasingly mediated by technological infrastructures and software packages, but IT systems are also an often taken for granted ‘black-box’, the background ‘furniture’, of our actions. How might this paradox be understood? Does it point to the difficulties of getting to grips with the invisible operations of infrastructures that are increasingly large-scale, standardised and interdependent? Does it say something about how evaluations are conducted? One of the most discernible characteristics of debates about IT is that systems are often appraised in terms of specific risks, opportunities and effects. Issues and problems arising from

particular systems are indeed important, but does an emphasis upon specificity neglect how ‘the technological’ constitutes capacities to act? Does the paradox suggest a particular (en)framing of understanding of IT – one that approaches technologies in terms of particular impacts, and utilitarian costs and benefits instead of addressing, to paraphrase Heidegger (1977), the ‘question of technology’ and the culture of technology that ‘de-worlds’ objects to their use value? The discourse of IT is, similarly, one in which technologies are tools that play a ‘supporting’, ‘aiding’ or ‘mediating’ role for human intentions and competencies (see for example Sotro 1996). Such vocabulary fosters and reinforces the practices of deploying IT as an instrumental tool for intentional human action.

The paradox suggests that the questions posed when approaching the ‘question of technology’, how technology is defined (as hardware, software, practical skills or techniques), and the problems with which IT is associated with solving, frame the ways in which politics and ethics can be invoked. As a way into rethinking the politics and ethics of technology, the etymology of technology is helpful – ‘technē’ and ‘logos’. ‘Technē’ can be understood as both an art of the mind and the skilled use of tools and techniques. Technology is involved in making something present and a craft skill and technique that reveals: a way of composing, knowing and reflecting on the world that is a ‘taking place’ and a range of practices through which various projects are realised through a ‘fixing’ of relations (see Brown 1999, 2001). In relation to this, different traditions have emphasised different senses of technology, with the analytical tradition concentrating on the latter ‘fixing’, with technology understood as a tool, as a means to an end. The continental tradition, by contrast, has tended to focus upon the former, depicting technology as a way of composing the world – a practice of world making. ‘Logos’ is associated with reasoned discourse about the proper nature of goodness. For the ancients Greeks, technology was not one, but two words: separate words that denoted the practices and appropriate relationship between two realms of activity (see Barney 2000).

How, then, might the design and deployment of IT be thought otherwise? How might the ‘undesigning of design’ be invoked? Winner (1995, p. 67) is sceptical of the potential for thinking otherwise about technology because ‘the Western tradition of moral and political philosophy has little to recommend on this score, almost nothing to say about the way in which persons in their roles as citizens might be involved in making choices about the development, deployment, and use of new technology’ (see also Mitcham 1994). Despite a two-millennial cultural inheritance that

separates means from ends, techniques from the ‘good life’, this special issue is an index of how it is incumbent upon those concerned with IT to work through the tensions of long-standing divisions with a view to redefining what is meant by IT, politics and ethics.

Debates about the design of information and communication technologies are, then, the product of a long history, but also a more recent temporality that reflects the trajectory of preoccupations in philosophy and the human sciences more generally. In introducing this special issue it is useful to situate the focus on design and use of information technology against general preoccupations from the 1940s onwards. Friedman and Cornford (1989) provided an early attempt to delineate periods of development associated with computing, with different periods dominated by specific technological and organisational problems (see also Scarbrough and Corbett 1992; Avgerou 2002).

The first phase, from the late 1940s to the mid-1960s, Friedman and Cornford suggest was preoccupied with ‘hardware constraints’ manifested in the high cost, low capacity and poor reliability of hardware. As a techno-economic practice, engineering assumptions dominated with little sense of the relevance of social scientific knowledge. The second periodisation, from the mid-1960s to the early 1980s, they term the ‘software constraints’ phase. This is associated with the timeliness, the cost of systems and the productivity of system developers. Dominant concerns centred upon managerial techniques to improve the top-down development and roll-out of systems, with managerial action understood as a sub-system engineering (see Shenhav 2003).

The third periodisation, ‘user relations constraints’, identified from the late 1970s and early 1980s onwards, focused upon empowering end users to shape the workplace, improving job satisfaction and productivity, and democratising decision-making. This phase signalled a sustained interest applying concepts from the social sciences, informed in particular by socio-technical theories and situated approaches. For the purposes of this special issue, we term the current periodisation as a ‘technology/society/identity’ phase. Contemporary preoccupations are concerned with questioning the boundaries between IT, society and individuals, with technical problems relating to standardisation and interoperability, and societal concerns centred upon issues relating to privacy, surveillance and access. Empirical studies now include the deployment of information and communication technologies in a multiplicity of contexts not just in the workplace (e.g., monitoring systems for the elderly at home, for instance), the

effects upon communities and individuals of widespread usage of the internet and mobile technologies, and the emergence of a professional coding sector that develops the majority of software applications.

Socio-technical theory and situated practices

Focus upon involvement in the user relations phrase denoted a concern and optimistic aspiration to increase workplace participation and user empowerment in the design of IT by taking the social and technical needs of end users seriously (see [Avgerou 2002](#); [Berg 1998](#); [McLoughlin 1999](#); [Scarbrough and Corbett 1992](#)). Technologies are understood as supporting social systems with various techniques achieving an optimal alignment of social and technical practices. Prominent attempts to construct 'better' technologies centre around making IT development more participatory – emphasising the role of front-line users – and enhancing workers' skills through the structural provision of end user/worker representation in the design process. Approaches included participative Organisational Development techniques for experts to capture users' needs through 'design by doing' meetings, structured models of workplace activity and 'envisioning ideal systems', but also more overtly political approaches, focused upon enhancing worker control and skill in an age of increasing computerisation.

Explicitly political approaches using socio-technical design practices had their hey-day in advanced Western economies in the 1970s and early 1980s. Although the analytical assumptions were drawn from the Tavistock Institute of Human Relations, the most prominent interest in the democratic development of human-centred design – design that was not the embodiment of management interests and did not enhance management control and deskill workers (see for example [Noble 1984](#)) was in the Scandinavian countries. Social democratic coalitions in government since the 1930s, structural co-determination of the economy by the state, employers' and employees' associations and low unemployment across Scandinavia created conducive contexts for experiments in socio-technical design. The wider political aspirations of involving the end user included fostering democracy in society by making working life more participatory and, in the process, reducing class differences.

Ehn et al. (1981) study of the UTOPIA project, a collaborative project between the Swedish Centre for Working Life and the Nordic Graphic Workers' Union, is an example of an attempt to formalise trade union and worker involvement in the design process and to challenge the dominant Fordist model of

technologically-paced production and Taylorised work practices (see also [Scarbrough and Corbett 1992](#)). The UTOPIA project, a computerised text and imaging technology that facilitated traditional typesetting skills, encountered a number of problems in the design process, two of which presage contemporary concerns. First, increasing managerial preference for 'off the shelf' systems rather than 'in-house' development. This made user involvement 'at a distance' problematic. Second, end users and their representatives did not have the expertise to participate in the design process once their work had been translated into technological operations and standards. The in-house UTOPIA project was eventually sub-contracted. Changes from the initially specified system were explained in terms of 'technical constraints' which users found difficult to challenge because of a lack of technical expertise.

Other initiatives included Mumford and Weir's (1979) ETHICS (Effective Technical and Human Implementation of Computer Systems), which involved the simultaneous and converging design of a technical system and work processes. This method similarly demonstrated that, when used in practice, system designers were generally those with expertise and "as the 'I' (for implementation) in the ETHICS acronym indicates, they tend to concentrate on fitting jobs to technology rather than fitting technology to the job" ([Scarbrough and Corbett 1992](#), p. 54). Despite the often failure of design experiments between social scientists, computer system designers and trade union representatives, the general conclusion of these initiatives, [Scarbrough and Corbett](#) suggest, was that sustainable end user involvement required a more thoroughgoing rethinking of the traditional processes of design than socio-technical systems approaches were able to provide.

Within the related, but distinct fields of Computer Supported Cooperative Work (CSCW) and Human Computer Interaction (HCI), [Winograd and Flores \(1986\)](#), [Heath and Luff \(2000\)](#) and [Suchman \(1987\)](#), amongst others, have been influential in developing approaches that critiqued traditional forms of IT design including socio-technical theories. Despite the shared assumption that end users have been ignored by designers, in CSCW and HCI terms, systems design informed by socio-technical theories remained dominated by a top-down and planned approach to empowerment.

Studies of computerisation informed by hermeneutics, ethnomethodology and theories of practice challenged rationalistic design assumptions, emphasising in contrast the improvised and micro situated shaping of IT during use. [Winograd and Flores' \(1986\)](#) depiction of the Coordinator is an example of

a communication infrastructure based upon situated design principles. An early form of email, the Coordinator was premised upon the assumption that communication is a relational social act: for Winograd and Flores, communication does not describe the world, but constitutes commitments which are highly context dependent. Embodying systems with rationalistic rules of how work is *a priori* conducted is, in such circumstances, highly problematic. In contrast to traditional design approaches, by increasing users' awareness of the range of commitments made by communication acts (to whom, for what purpose, and so forth), the Coordinator enabled enhanced productivity through connected, ongoing and recursive conversations' that were based upon the contextual communication competency of users (for a discussion see Berg 1998).

Suchman (1987) similarly describes how 'plans' are often assumed to be the basis of 'purposeful action' by those designing large-scale information infrastructures. In contrast to rationalistic assumptions, plans are resources for situated activities instead of determining the direction of activity. This means that "the operational significance of a given procedure or policy on occasions is not self-evident, but is determined ... with respect to the particularities of the situation at hand" (Suchman and Wynn 1984, p. 152). Focusing upon work 'in the doing' as a collective cultural achievement emphasised the interpretative nature of communication.

Berg (1998, pp. 467–468) describes how the situated approach conceives of traditional system design as mistakenly conceiving of "human work as describable by the logic that belongs to the realm of technology: as consisting of clear-cut, well-circumscribed tasks, executable in a predictable and pre-designed sequence.... Traditional system design does not see that work is performed according to a fundamentally different logic: a logic of fluid interaction, of situated action, of local circumstance". The implications for design practice of the gap between the implicit remnants of rationalistic design within socio-technical approaches and theories of situated practice has often focused upon the clarion call for researchers to come out of the academy and become ethnographers – the emphasis is centred upon studying the detail of work in order to recover the rich practice involved in getting a job done (see for example Schmidt and Bannon 1992). According to the situated approach, long-term exposure to a particular work context, together with a detailed and fine-grained account of organisational practices can enable 'better technologies'. 'Better' because decisions about IT development design and deployment can take account of how users actually undertake their work and shape

technologies during use (see for example Orlikowski 1996).

Reinventing the divide between the social and the technical

Despite their progressive appeal, both socio-technical and situated approaches have, recent critiques have suggested, little explicit analytical grasp of how technology is an active part of political and ethical practice. Both have an instrumentalist view of technologies as tools for human activities; theoretical approaches to the design and deployment of IT during the 1990s further problematised rationalistic assumptions of social-technical theories and situated approaches. Whatever the macro or micro political implications of socio-technical theories and situated approaches, ontological divisions between technology and politics remain intact and re-enter the design debate in under-acknowledged ways. Ethics remains either implicit or invisible. For proponents of socio-technical and situated approaches, rationalistic-inspired designers failed to recognise the ontological difference between the technological and the human and assumed that human activity followed the mechanical and instrumental logic of technology. Berg (1998) suggests that from this underlying assumption there can be either negative or positive visions of IT: negative visions construe technology as "being 'authoritarian', 'impoverished' and 'mechanistic'" (Berg 1998, p. 469), and from this comes the conclusion that "the only proper technology is no technology", or minimally specified technology that can be reconfigured by the end user. Hence, situated approaches remain limited to a preoccupation with reducing the rationalistic emphasis and foregrounding the importance of contextualised practice. Although situated human capacities and rationalistic technological infrastructures interact, the kind of interaction is one that reaffirms the ontological divisions between the technologies and users. Maintaining such divisions leads to a circumscribed politics of design and use that is concerned with questions of more or less end user involvement, system flexibility and the type and range of skills that IT enables.

Problematising instrumentalist assumptions that reduce technologies to tools and questioning ontological divisions between humans and non-humans can be set in motion by examining how the boundary between the technical and the social is subject to change over time. Changing associations in relation to 'computing', for instance, show how capacities can be delegated to various actors. It also demonstrates

that what is meant by computing changes over time. Before the Second World War ‘computing’ (from the Latin *computāre* meaning to clear or settle an account, reckon or think) referred to a profession responsible for making calculations for companies involved in activities such as navigation, insurance and finance. By the late 1940s, however, the ‘computer’ had become a machine for undertaking calculations and was associated with making the world intelligible in new machine-based ways (Kaufman-Osborn 1997, p. 43). By the 1990s ‘computers’ were firmly established as a category for making sense with, positing an image of the post-industrial structure of society as one of networked connections, with human brains providing the software (see for example Castells 1996).

Bloomfield and Danieli (1995) provide an example of attempts to purify boundaries in relation to the design and implementation of a hospital information system in the UK National Health Service. The information system they studied was to be used, in part, to produce letters about patients to be sent to their general practitioners. The automation of letters required standardising the content of letters with data that was already coded by another of the hospital’s systems. Medical practitioners at the hospital objected to the inflexibility of the proposed system and wanted to include non-standardised information. In response, the IT consultants argued that doctors should find ways of coding non-standardised comments so that they could be held on the information system. Thus “the problem as seen by the doctors – the rigidity of the information system – was translated in terms of the lack of standardisation inherent in doctors’ practice vis-à-vis the discharge of letters. What could be seen as a technical problem was reconceptualised as an organisational one – a problem of organisational efficiency due to non-standardisation of an informational practice on the part of the doctors” (Bloomfield and Danieli 1995, p. 38). Through contested translations and attempted purifications the relationship between the information system and organisational practices is rendered into a particular problem that is analysable into separate domains. At this juncture, it is the recalcitrance of professional medical practice rather than system designers that is problematic. But the problem could be constructed otherwise. Bloomfield and Danieli’s general conclusion is that power is the ability to define reality – including, who counts as an end user (see also Grint and Woolgar 1997), whether a system is associated with technological and/or organisational change (Bloomfield and Vurdubakis 1994), and so forth. Such approaches critique socio-technical and situated approaches as remaining premised upon

instrumentalist assumptions that place too much confidence in the self-evident functionality of ‘well-designed’ IT to foster improved social relations and end user competency.

Latour (1999) similarly illustrates the delegation of capacities, but also the transformation of human subjects and technological objects through the example of the debate surrounding the ‘right to bear arms’ in the USA. This debate often centres on whether ‘guns kill people’ or ‘people that kill people’. Either the gun’s components make an ordinary person into a killer or the gun is a tool and neutral carrier of human intentionality. Latour suggests these two positions are absurd in many respects, although debate about gun usage is often posed in such stark terms. In Latour’s (1999) analysis, however discrete a technology seems to be, it always presupposes a comprehensive range of heterogeneous relations for its typical ontological durability. Because technologies are relational effects they are also transformed as they ‘travel’ between places and over time and refashion the context into which they are introduced in ways that surpass intentions and that cannot be predicted completely in advance.

Latour (1999) suggests that instead of the myth of the autonomous or neutral gun there is a ‘third possibility’ termed ‘goals translation’. Translation is not the substitution of one thing for another, rather it is a technical mediation that is made up of an open-ended displacements, delegations and drifting between human and non-human capacities that heralds ‘the creation of a link that did not exist before and to some degree modifies the original two’ (Latour 1999, p. 180). With this third possibility the actor is neither the gun nor the citizen but the becoming-citizen-of-the-gun (a ‘citizen-gun’) and the becoming-gun-of-the-citizen (a ‘gun-citizen’). The becoming-citizen-of-the-gun and becoming-gun-of-the-citizen is a transformation/translation that turns both citizen and gun into someone and something else (Latour 1999, pp. 179–180). A gun at a gun club is part of an infrastructure of shooting ranges, locked gun cabinets and social engagements for the gun enthusiast including competitions for accuracy and speed. Removing the gun from the storage rack and taking it home translates the technical infrastructure and social practices the gun previously occupied into relations with domestic activities and protection from intruders. A different subject and a different object is constituted. A law-abiding gun enthusiast can become a criminal; a gun locked in a storage room can become a gun used as a weapon in defending hearth and home.

The political and ethical significance of Latour's example is that neither subject nor object are complete in themselves but are mutually constitutive moments that 'gain their ontological character through the position they occupy within the shifting relationships operating across the complex of elements in which they are embedded' (Brown et al. 2001, p. 129). This 'ontogenesis of things' (Mackenzie 2002) is, according to Kaufmann-Osborn (1997), what Marx meant by his famous aphorism 'humans make their own history but not according to their own making'. In terms of ethics this denotes a concern with problematising modernity's boundary between morality and technology. Morality is not something at the behest of humans because this would presuppose "an already constituted human who would be master of itself as well as of the universe.... Morality and technology are ontological categories ... and *the human comes out of these modes*, it is not at their origin" (Latour 2002, p. 254, emphasis added). Latour's challenge is a provocative one for the design and deployment of IT because it unsettles the often taken for granted categories associated with humankind – intentionality, freedom and responsibility, to name a few – and suggests the necessity of a 'parliament of things'.

Undesigning the design

So far we have set out the trajectory of approaches concerned with the design and use of IT over the last three decades. We suggested that versions of socio-technical theory were associated with macro political aspirations, situated approaches emphasised the micro politics and social shaping of IT during use, and actor-network theory inaugurated a parliament of things in order to broaden the remit of politics to include non-human actors. Our discussion has, then, thus far centred upon various definitions of 'the political'. We have, however, said little about ethics. Do these approaches have much to say about ethics? If they do, is there under-acknowledged privileging of politics over ethics with socio-technical theory, situated approaches and actor-network theory?

Recent interest in ethical philosophy, particularly the work of Levinas (1967, 1981, 1986; see also Critchley 1999; Hand 1989), provides a distinctive way into the relationship and tensions between ethics, politics and justice. Levinas is, like Latour, interested in questioning modernity's basic premises, but Levinas' concern is with the 'Other' and the *primacy of the ethical*. Although the papers in this special issue do not draw upon Levinas' work, in various ways and drawing on a range of traditions, each of the six

papers in this issue is concerned with the relationship between politics and the ethics of design and use. Empirically, the papers are concerned with 'others', that is, users who often cannot interrogate propriety software or were not specified during the design process, the practices of code-breaking crackers, those affected by choice or default by ethical protocols or individuals in developing countries. In introducing this special issue, we want to situate the politics and ethics of the design and deployment of IT within a broad contemporary preoccupation with the relationship between politics, ethics and justice.

Levinas' ethics is based upon the Other rather than the individual egocentric self. In order to establish the primacy of an ethics of the Other, Levinas makes a distinction between 'need' and 'desire'. Needs belong to the realm of appropriation, of instrumentalist assumptions that are expressions of attempts to control, categorise and order, through which the egocentric self satisfies its own wants – equivalent, we suggest, to the tool view of technology. Levinas (1986, p. 350) states that: "Need opens a world that is for-me; it returns to the self.... It is an assimilation of the world in view of coincidence with oneself" (quoted in Simmons 1999, p. 85). Desire, by contrast, cannot be assimilated or satisfied and, hence, pulls the egocentric beyond itself. From the distinction between need and desire, Levinas suggests that the self can never fully comprehend the Other because the Other expands onto the realm of infinitude. Although the Other is originary and the egocentric self is epiphenomenal, this does not mean that there is no place for the egocentric self in a Levinasian approach to ethics. It is rather the constant separation and conjunction between need and desire that Levinas is interested in delineating.

In order to invoke the difference and tensions between politics and ethics, Levinas (1981) makes a distinction between 'said' and 'saying' (see also Simmons 1999). The 'said' refers to a view that language originates from the speaker and privileges the content of the speaker's communication: the egocentric self classifies and labels, and so forth, to a degree "where all reality can be thematised and made present to the mind of the ego" (Simmons 1999, p. 88). The said is concerned with calculability, programmability and formalisability. 'Saying' refers to the Other that is neglected in the violence of the said – because all ordering, including language, is violent. Simmons (1999) argues that Levinas' concept of saying is not just concerned with exposing the self to the Other. It is rather an assigning of the self to the Other. It is the infinite and asymmetrical responsibility to the Other, 'unsaying the said', through which the 'ordeal of undecidability' (Derrida 1992) is induced. Ordeals that mark out the proper domain of

ethics. Undecidability suggests that an ethical encounter is not reducible to a cost-benefit calculation or the application of codes or laws. Paraphrasing, we suggest that ‘undesigning the design’ is how an ethical and political encounter with information technology can be invoked.

Levinas’ delineation of need-desire and said-saying is also based upon a particular hierarchy between politics and ethics: traditional philosophy has privileged need-said-politics and subordinated desire-saying-ethics. Simmons (1999) illustrates how, from Hobbes, Locke and others onwards, political thought has been premised upon the principle that individual subjects are in conflict with each other – locked in a battle for self-preservation and power. With this vision of community, the function of the social contract is to keep war in check through the establishment of a politics of self-preservation. It is from this vision of originary disorder and chaos that Levinas has grave misgivings about what passes for much ethical theorising – ethics is always secondary to politics. Furthermore, ethics is reduced to a calculative and egocentric version of ethics based upon reciprocity rather than infinite and asymmetrical responsibility: “the ethical tradition subordinates ethics to ontology; *ethics is derived from an eminent being or the contemplation of an autonomous individual*” (Simmons 1999, p. 91, emphasis added). In Levinasian terms, rethinking the relationship between politics and ethics requires that primacy of ethics is asserted and politics is construed as serving ethics.

The egocentric self’s responsibility to the Other must also be expanded to include all humanity. Levinas terms this shift to all Others as ‘the Third’. This denotes a shift from the alterity of the singular Other to all Others: ethics has to reach all humanity and this takes place, albeit always problematically, through politics. With the move to universalise ethics through the application of codes, laws and institutions to all humanity “the ego has already reneged on its responsibility for the other” (Simmons 1999, p. 94). It is this impossibility paradox in which ethics is found in the encounter with the Other and politics with all Others that Levinas’ remarks that there must be a ‘permanent revolution’ *between, through and beyond* ethics and politics (see Simmons 1999, p. 99). Our suggestion is that Levinas’ ethical philosophy invokes a productive encounter between ethics, politics and justice relevant to the design and deployment of IT. But how might this proceed?

A Levinasian inspired ethics of IT design and use would not be *a priori* specific about how the oscillation between ethics and politics would be invoked in practice. Nonetheless, design and deployment of information and communication technologies that

are the manifestation of the tensions between ethics and politics, in which neither ethics nor politics dominates, would herald an ‘undesigning of design’ based upon “a rebellion that begins where the other society is satisfied to leave off, a *rebellion against injustice that begins once order begins*” (Levinas quoted in Hand 1989, p. 242, emphasis added). Singular claims by silenced Others would destabilise and cast doubt upon assumed interpretations and expose the violence inherent in the design and deployment of technological infrastructures. When we are disturbed by the face of the Other, IT can be put on the way to undesigning – to reinvention and new judgements through and beyond existing frames of ethics and politics.

Papers for the special issue

‘Undesigning the Design’ shares a common concern with the design and use of IT whilst drawing upon a range of approaches and focusing on diverse empirical contexts. The papers that comprise this special issue were selected from the European Conference Computing and Philosophy (ECAP) conference in Trondheim, Norway, 22–24 June 2006. Papers were selected for their analytical and empirical relevance to contemporary ethical and political issues in the design and deployment of information and communication technologies. We are pleased to present the following six papers for this special issue of *Ethics and Information Technology*.

In ‘Maintaining the Reversibility of Foldings: Making the Ethics (Politics) of Information Technology Visible’, Lucas D. Introna reflects upon the pervasive tool view of information technology. The paper demonstrates how politics is constituted through algorithms and practices of search engines and plagiarism detection software in a manner that makes it impossible to simply trace and tie politics down to this or that particular intention or agency, human or tool. Drawing upon phenomenology and Latour, the paper sets out a comprehensive programme for a disclosive ethics as a way to make the morality of technology visible. This is comprised of a Foucauldian inspired ethical archaeology through which technologies are the subject of ongoing scrutiny; transparent design through which the design and operation of systems is opened up to multiple stakeholders for examination and deliberation; multistable design that affords different interpretations, multiple forms of use and active engagement; and, finally, the materialisation of morality. If technology is society made durable, then materialising morality ought to be taken

seriously. This means making values more durable through their explicit embodiment in technological infrastructures. Introna concludes by acknowledging the incomplete and not unproblematic or uncontroversial form of ethics developed in the paper. Nonetheless Introna argues that a disclosive ethics that conceives of technology as a moral actor is a crucial step toward maintaining the reversibility of foldings embodied in information and communication technologies.

The way in which individuals become ethical and political subjects is the focus of ‘Ethical Codes in the Digital World: Comparisons of the Propriety, the Open/Free and Cracker system’. Jukka Vuorinen’s paper draws upon Foucault and Luhmann to differentiate proprietary, open/free and cracker systems of communication. For Vuorinen, different systems of communication create different ethical codes and differential possibilities to become a moral subject. Drawing upon ongoing qualitative research, Vuorinen describes how for propriety software systems, copy protection measures are a means to secure ongoing financial resources. For those concerned with open and transparent software, copy protection restricts freedom and circumscribes possibilities for ‘a better world’. For crackers, the basis of their ethical code is honour and prestige based upon the ability to be the first to crack new software releases. Vuorinen provides an insightful depiction of differential ethical codes and different forms of politics related to these three ‘forms of life’. Propriety systems rely upon law and legislation as an instantiation of the political, whereas the open source movement is an explicitly political reaction to the global system of intellectual property rights. Interestingly, Vuorinen analyses the crackers’ system of communication as reliant upon the propriety system for their ‘game’ of honour and prestige. Although crackers break the copy protection of propriety software, their activity, in contrast to the open software movement, is not an intentional attack on the ideology of propriety software production.

The basis of ethical rules, in particular attitudes toward lying, is the focus of ‘Modelling Ethical Rules of Lying with Answer Set Programming’. In this paper, Jean-Gabriel Ganascia, applies modern artificial intelligence techniques, in particular non-monotonic logics, to different ethical theories. Ganascia’s paper begins with a profound question: under what conditions are we allowed to lie? Invoking the eighteenth century debate between Immanuel Kant and Benjamin Constant, Ganascia reminds us that, for Kant, lying is never acceptable because it breaks the categorical imperative. For the less well-known Constant, however, lying may be

acceptable if the receiver does not deserve the truth. In the example of lying, the general principle is that we always have to tell the truth. But a more specific principle says that you do not have to tell the truth to someone who does not deserve it. The first consequence is that, for Kant, a speech act is a public act. For Constant, however, it is a communication act; in practice, it means that communication is premised upon a transmitter and a receiver. In Kant’s formulation, however, only the transmitter is acknowledged. Ganascia takes this philosophical debate and applies it to Answer Set Programming and, in particular, to Constant’s ethical position. Ganascia argues that for several decades artificial intelligence has tried to build new logical formalisms that are able to reconcile general rules and inconsistent cases. The paper demonstrates that Constant’s logic is not inconsistent and conforms to non-monotonic formalisms in artificial intelligence. From this application of Answer Set Programming, Ganascia concludes with another fascinating question: even though we may not expect artificial agents to lie, do they have to tell all they know?

The paper by Matteo Turilli ‘Ethical Protocols Design’ is concerned with specifying computational systems that are aligned with particular ethical principles. Turilli introduces in detail a concept termed ‘control closure’ as a means to translate ethical requirements into ethical protocols. Generalised information privacy, defined as the right of an individual not to have his or her own data used to extract information without consent, is a paradigmatic example of an ethical principle. Turilli illustrates this principle through the example of an ethical camera phone: the widespread use of camera phones provide unprecedented possibilities for taking and distributing images. Turilli elaborates three different versions of ethical requirements for taking a picture with a camera phone: these are, first, taking a picture without constraint; second, taking a picture accompanied by an audible noise, and, third, taking a picture only with the subject’s permission. The purpose of the example is to illustrate how the ethical requirement of information privacy can be translated into an ethical protocol. For Turilli, control closure is a normative solution to ethical consistency problems and, as such, solutions like this are likely to be increasingly valuable in designing artifacts. The paper concludes by asking a pressing question: is it possible to assign artificial actors morality and moral reasoning? Turilli suggests that a preoccupation with artifacts and morality is likely to become ever-more important with the proliferation of distributed artifactual environments.

The issue of values in design and ethically sound design is examined in the paper by Anders Albrechtslund. The paper explores the approach known as Value Sensitive Design (VSD). The approach is illustrated through the example of augmented window for use in office environments. Originating from the VSD Research Laboratory in Washington, USA, this 'office window of the future' is designed to improve the quality of the work environment in contexts where there is no external view. The augmented view associated with the window also became, however, associated with the potential for deployment as a surveillance technology. Albrechtslund describes this as the positivist problem – a problematic that is related to the uncertain and contingent connection between design and use. The paper argues that it is necessary to clearly distinguish between design and deployment, since designers' intentions do not always correspond with users' practices. The implication is that designers must acknowledge that foresight is incomplete. In order to rethink this problematic, Albrechtslund suggests that a phenomenological approach to understanding information technology, particularly Ihde's concept of multistability, can provide an analytical tool to rethink the boundary between design and use. The paper concludes by arguing for the further development of design ethics. This would include users not intended in the design process whilst aware that such a process is *a priori* impossible.

The final paper by Justine Johnstone is 'Technology as Empowerment: A Capabilities Approach to Computer Ethics'. The paper begins by arguing that standard agent and action-based approaches in computer ethics have significant difficulties in dealing with complex systems-level issues, particularly critical and pressing societal concerns such as the digital divide between developed and developing countries and the uneven effects of globalisation. In responding to such issues, the paper develops a value-based agenda to complement traditional approaches in computer ethics. Johnstone suggests that a particularly useful value-based approach is capability theory. Capability approaches have recently become influential in a number of fields with an ethical or policy dimension, but have not so far been associated with computer ethics. From this gap, Johnstone argues there is an opportunity to apply a value-based approach to computer ethics. The paper discusses two major versions of the theory, that is, the work of Sen and Nussbaum. Their work is elaborated through empirical material from a study of a South African NGO. In proposing a theory based upon what Johnstone terms core human functionalities, the paper demonstrates that capability theory complements standard ethical theories, and

provides a framework that incorporates issues of justice as well as ethics. From this the paper concludes with a discussion of the limits of capability theory and with suggestions for the future development of the approach.

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