Ethics of Information Technology
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A fruitful way to approach Information Technology (IT) from a Christian perspective is not to focus first on individual ethical issues that arise in the field, but rather to develop a broad vision against which to see it as part of the human mandate to open up God's rich and complex creation order. The article begins by describing the diverse areas of the field of IT and identifying the kind of ethical questions arising in each area. It then proposes that Christians should not simply be reactive to developments in a field led by others, but take the initiative in making constructive contributions. To do so, two steps are required: first, the acquisition of a broad biblical framework for viewing all human activities under God; second, the formulation of a biblically-guided philosophical framework which resists 'reductionism' in the field and remains alert to its full diversity. In this way, Christians can make more creative contributions to the 'ethics of IT'.

Introduction

Is God interested in information technology? Immediately we might think of how beamers (data projectors) are used in church services. We might think of issues like pornography, privacy or the de-socialisation of children who play computer games. But these are not the only types of issue. There are many less obvious issues, perhaps more important because they are deeper. In this article, I want to suggest a way in which Christians can approach the ethics of IT, and at the same time make a useful contribution in the field that researchers and practitioners might value. In doing so, I will explain something of a journey of discovery, which I have attempted to describe in my book *Philosophical Frameworks for Understanding Information Systems*.[1]

The Field of Information Technology

The term 'information technology' (IT) usually focuses on the technology, while 'information systems' (IS) is used when we take human beings and organisations into account. The field of IT/IS is in fact several fields, in each of which human beings relate to IT in different ways, raising different types of issues on which research is focused:

- The field of IT Usage is concerned with people using IT in their everyday lives at work, home or elsewhere (e.g. church), which raises issues like ease of use, usefulness and immersion in virtual reality.

- The field of IS Development (ISD) is concerned with developing IS for such use. Issues explored include programming, project management, user participation and web design.

- The field often known as computer science is concerned with design and preparation of generic resources for IS developers to use. Issues include programming/database languages, algorithms, data structures.

- The fields of information science and artificial intelligence are concerned with understanding the nature of computers and information, and especially with whether computers are like humans. Debates turn on philosophical issues like 'brain versus mind'.

- The field of IT and society is concerned with how IT changes society (such as by facilitating globalisation) and how society causes IT to be shaped in certain ways. Issues include globalisation, gender, security, digital divide and e-government.

These are not all the possible areas, but they are the main ones; some are more technical and some less so. Each area has a different ethical dimension, for example:

- The ethical dimension of IT usage includes access for the disabled, safety, what IT is used for (pornography, spread of gospel, etc.), and whether repercussions of use are beneficial or detrimental.
- The ethical dimension of ISD includes responsibility for the future, and proper treatment of all involved.
- Generic IT resources also raise ethical issues, ranging from errors in programming to appropriateness, to what IS developers need, of programming languages and other resources.
- The main ethical issues related to information science and artificial intelligence include how we should treat humans and computers, and what we should properly expect of them.
- The ethical dimension of IT and society ranges from the disenfranchising effects of IT infrastructure, to high-level issues like whether IT as such should be welcomed or resisted.

In each area there is a tendency to overplay the importance or benefits of IT. This tendency ranges from the development of IT for its own sake, through politicians and senior management seeing IT as a panacea, down to the church that installs a beamer (data projector) because they assume it will make them look up-to-date. To facilitate discourse and research in each area, various conceptual frameworks have emerged, on the basis of which issues may be understood and new issues emerge. These frameworks are sets of assumptions that drive our attempts to understand a field, including its ethics, down certain avenues, and this can highlight some issues while making others invisible. It should be apparent, then, that the 'ethics of IT' is far more complex than is usually assumed. What contributions might Christians make?

Christian contributions – should we?
Before we discuss *how* Christians might make a contribution in the field of IT/IS, we need to satisfy ourselves *whether* we should.[2] Whether we should contribute to an academic discipline depends on what we believe is of ultimate importance in God's eyes. Some types of pietism often lead their adherents to assume it is a waste of time trying to do so. By contrast, I believe God's ultimate plan is for a creation that 'works well' together in Christ, in which all works for the joy of all the rest (true godly piety contributes to that joy). I further believe that, as part

of this, humanity has a mandate to 'open up' the potential in creation in such a way as to increase and enrich this joy (see http://www.abxn.org/nv/).

The development of science, technology, democracy, art and so on may be seen as humanity's opening up of various kinds of creational potential. IT may be seen as part of the opening up of the potential that is of an informational kind. Writing, printing and film have all opened some of this kind of potential (for public sharing of ideas, for widespread distribution, and for dynamic presentation of ideas). IT may be seen as taking the next step, in offering interactivity and active inference in our engagement with information. This is what motivates me to contribute to my field in Christ's name. Eventually, all types of potential might be opened up and brought together in Christ.

It must be stressed that the way in which sinful humanity has in fact opened up creational potential is not as God intended. IT has been developed either for its own sake or to serve unworthy, unnecessary or even harmful ends (e.g., mere pleasure, convenience, competition). A good guideline is that no potential within creation should be opened up for its own sake but only for the sake of good in all other types; this echoes the self-giving nature of agape-love. On the basis of this core idea, and inspired by a biblical vision, the Dutch thinker Egbert Schuurman devised 'a liberating vision for technology' (see Basden, *Philosophical Frameworks*, 312-316). Unfortunately, his views did not enter mainstream discourse in the field. So we come to the question: How may Christians contribute?

Christian contributions – how can we?
Some Christians think that one way to contribute to their academic field is to apply statements from Scripture directly to that field. But that does not usually offer a contribution which the field can value, both because the authority of the Bible is not recognised and because the application of Scripture depends on contested interpretations. Another more familiar way is to let non-Christians offer the radical new ideas, with Christians then reacting and responding, perhaps by charitably 'clearing up the mess' caused. Though sometimes necessary, there are dangers in this approach. One is that Christians will either acquiesce without critique or become mere fault-finders. But why wait for the problems to be generated in the first place?

Should not the people of God – those who claim to know the Creator – be prepared to take the lead in humanity's process of opening up creation? How do

we go about this? Sadly, because Christians have seldom in the last century taken a lead in any academic field, making radical but authentically biblical contributions that shape their fields, there are few recent precedents to follow. So I will relate my own experience, making it sound rather more 'logical' than it in fact was.

I discovered that a good way to approach the ethics of IT was not to worry away at individual ethical problems separately but first to seek a wider framework by which to understand IT in each of its areas and as a whole. In addition to the obvious ethical imperatives like being a witness for Christ through integrity, honesty and hard work, I find a deeper ethic more important and wide-ranging. To do this, I let the main messages of Scripture shape my attitudes to various broad (philosophical or intuitive) issues that others often overlook. For example, the belief that God created the world implies we should treat all of it, including IT itself, with love and respect – while others worship or deride it. Meaning is of central importance – others often focus merely on structures or opinions. That humanity was given the role of shepherding creation towards its destiny in Christ implies joyful responsibility in all areas – others ignore ethics or reduce it to power. That the Mosaic law and prophets were concerned with structural good and evil implies that we should be too – many focus only on individual ethics. That evil arises because we turn away from God and that Christ came to save implies we should not look to IT to solve our problems, but should focus on changing the human heart. That we live in God's world implies that ideas emerging from supposedly godless minds might include some genuine insight – I am therefore challenged to sift and discern.

I find that such implications work themselves out in the various areas in the following ways.

- As an IT User, I should be self-critical about how IT is used in life. In addition to what IT is used for, I always look for indirect and unexpected repercussions, especially how IT can surreptitiously shift attitudes towards self-centredness or laziness in individuals and organisations. IT should bring benefit (blessing), not harm. It is not always easy to understand these but I am called to responsibility and so must go the 'second mile' in working them out.
- As an IS developer, I should treat users, clients and environment with respect. My relationship with them is not one of control versus freedom, but one of joyful co-responsibility to open up the informational aspect in their application. This involves subjugating my own preconceived ideas to their needs, but also being prepared to be critical of their ideas ('what the customer demands'). So I probe what is really important and valuable underneath, and can be proactive in suggesting things they have overlooked. For example I was once proactive in suggesting an environmental option in an expert system aimed at farmers.
- As a computer scientist, I find current languages expect us to represent the world as logic, numbers or 'objects'. But this does not respect the diversity of the world, such as its spatial or textual aspects. So I develop general algorithms and computer languages appropriate to each aspect. In this way I oppose 'reductionism'.
- In trying to understand the nature of computers, I focus on meaning rather than essence. In the artificial intelligence debate about whether computers are like humans, I felt the debate was carried out without sufficient regard to the role of humanity as both part of creation and with its special role.
- The issue of IT and society is mainly approached from an apparently a-moral, structural point of view, though feminist thought inserts a moral imperative. I found Bob Goudzwaard's religious notion of idolatry very useful in accounting for how we too unquestioningly welcome IT and let IT shape our lifestyles towards harm.[3] Eschatology makes me sensitive to issues of destiny: is humanity destined to be trapped forever in hours of email or Facebook? Is IT itself destined to be our curse?

Though some of these sound obvious to ordinary people, most are quite radical to most specialists engaged in IT research, and are at first resisted. This is not usually because of their biblical basis as such, but because the prevailing humanist-academic basis of most research has prevented them seeing as problematic what I have come to see as problematic. But eventually some do get recognised. For example, twenty years ago someone told me, 'You're the only one who spoke of benefits' – but now, academics are discussing this issue. These others too live in a world governed by God's laws. So I had to find a way to make these ideas, and how they together form a 'whole story', relevant to those in my fields.

I turned to philosophy. But I find most strands of philosophy unsuited to this task. Greek philosophy tends to drive apart the conceptual and the material, but I want them integrated. Scholastic philosophy tends to drive apart the sacred and the secular, but I want them integrated. Modern and postmodern

philosophy tend to drive apart human and non-human, freedom and determination, Thought and Thing (Kant) and Being and Morals (Hume), but I want them all integrated. A radically different philosophy did serve my needs, however, that of Herman Dooyeweerd (for a summary, see http://www.dooy.info). This was not simply because he tried to work from an explicitly biblical set of presuppositions, but because I found his thought more able to shed light on the full diversity of meaning in all the five areas listed above. I believe his biblical framework enabled him both to resist reductionism in any field and to be alert to the rich complexity of the created order.

Dooyeweerd proposed a suite of 'aspects' of reality that cannot be reduced to each other but which manifest themselves in all areas of reality (human, non-human, conceptual, material, free, determined, sacred, secular). Among these 'aspects' of reality are those of quantity, space, movement, energy, life, feeling, distinction, formation, signification, sociality, frugality, aesthetics, justice, love and faith. I have found most of these important when reflecting on my everyday experience in all areas of IT/IS – to evaluate quality of IS use, to guide IS development, to make computer languages more appropriate, to understand the nature of computers, and to identify society-IT relationships and types of idolatry. Frequently, this revealed issues that the mainstream had overlooked, or was itself just discovering, which gave the opportunity to lead rather than reactively follow the field (see Basden, *Philosophical Frameworks*, chs, IV to VIII).

Conclusion

I have suggested that the field of IT is much more diverse than we might think, and relates to ethics in various ways. This article has suggested a distinctive approach. Rather than attacking the problem of ethics in IT head on, and in isolation from other issues, I have proposed we first seek a framework for understanding the various disciplinary areas of IT/IS, and from this begin to situate ethics in a wider context in order to find new ways to think about it. I have reported that, in my experience of research in the field, Dooyeweerd's framework of multiple irreducible aspects of reality has proven particularly useful for understanding and honouring its diversity. This approach does not give answers. It does not even directly give questions. Rather, it provides ways of understanding the field that allows us to pose fruitful questions that those working in the field find stimulating. It has allowed me to understand extant ideas, engage with them and perhaps even enrich them.[4] The starting point, then, is not the 'ethics of IT' as such, but rather a recognition that IT fits into God's order of creation. We can then view IT as part of humanity's shepherding of the rest of creation, the mandate that God gave us in Genesis 1, and so develop an understanding of how it can serve humanity in a distinctive way.

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End notes:

1. (Hershey, PA: IGI Global, 2008).
2. See the Christian Academic Network: www.c-a-n.org.uk.
3. Bob Goudzwaard et al, *Hope in Troubled Times* (Grand Rapids: Baker Academic, 2007).
4. See Andrew Basden, 'Engaging With and Enriching Humanist Thought: the Case of Information Systems', *Philosophia Reformata* 73.2 (2008), 132-153.

For further reading

- Andrew Basden, *Philosophical Frameworks for Understanding Information Systems* (Hershey, PA: IGI Global, 2008).
- Andrew Basden, 'Engaging with and Enriching Humanist Thought: the Case of Information Systems', *Philosophia Reformata* 73.2 (2008), 132-153.
- David Lawrence, *Heaven ... It's Not The End of the World!* (Scripture Union, 1995).
- Arnold Pacey, *The Culture of Technology* (Cambridge, MA: MIT Press, 1996).
- Egbert Schuurman, *Technology and the Future: A Philosophical Challenge* (Toronto: Wedge, 1980).

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