Thesis Submitted to
Charles Sturt University
for the Degree of Doctor of Philosophy

Towards a Theology of Technology: A Theological Inquiry into Technological Culture and the *Koinonia* of the Church

Christine F. Ledger
MScSoc, BSc(Hons)

March 2004

Copyright © Christine F. Ledger 2004

Contents

Chapter 1 Introduction 9

Chapter 2 Technology and Technological Society: Issues and Challenges 16

2.1 Introduction 16

2.2 Martin Heidegger: The "Essence of Technology" 19

2.3 Technological Culture: Contemporary Commentators and Critiques 26

2.3.1 Jacques Ellul: Technology as Autonomous 26

2.3.2 Ernst Friedrich Schumacher, Langdon Winner et al.: Technology as Value-laden 36

2.3.3 Albert Borgmann: The Limits of Technology 42

2.4 Technological Distortions of Relational Life 52

2.4.1 The Culture of Instrumentalism 52

2.4.2 Technology as Idolatry 55

2.5 Conclusion 59

Chapter 3 Enframing Technology: Creation andNatural Relationality 61

3.1 Creation as Founding Reality 63

3.1.1 Creation and Redemption 66

3.1.2 Transcendence and Immanence 70

3.1.3 Humankind in the Image of God 73

3.2 The Naturalness of Relationality 76

3.2.1 Alfred North Whitehead: The "Reciprocal Relation" of Transcendence and Immanence 76

3.2.2 Martin Buber: "The *a Priori* of Relation" 78

3.3 The Trinitarian Doctrine of Creation and Natural Relationality 80

3.3.1 The Trinitarian Basis of Relationality 81

3.3.2 "Otherness-in-relation": The Fundamental Dynamic 85

3.3.3 *Imago Dei* as Relational Being: The Created Co-creator 89

3.4 Conclusion 98

Chapter 4 Towards a Theology of Technology: A Relational Approach 100

4.1 Introduction 100

4.2	A Theological Critique of Technological Culture	103
	4.2.1 The Trinity and Instrumentalism	103
	4.2.2 Idolatry and "Otherness-in-relation"	107
4.3	Construction of a Theology of Technology: The Relational Nature of Human Creativity	112
	4.3.1 The Christological Ground and Eschatological Destiny of Human Creativity	115
4.4	Technology, Relationality and Natural Theology	120
4.5	Conclusion	126
CHAPTER 5	A THEOLOGY OF TECHNOLOGY: ECCLESIOLOGICAL PERSPECTIVES	127
5.1	Introduction	127
5.2	Ecclesiology and *Koinonia*: The Nature and Quality of Trinitarian Relationality	128
	5.2.1 The Ontology of the Church as *Koinonia*	128
	5.2.2 *Koinonia* in the Church and the World	130
	5.2.3 The Relational Quality of *Koinonia*	132
5.3	Ecclesial Distortions in a Technological Culture	136
	5.3.1 Consumer Spirituality	136
	5.3.2 The Weakening of Sacramental Life	140
	5.3.3 Secularism: The Fracturing of the Church from the World	142
5.4	*Koinonia* and a Theology of Technology	145
	5.4.1 Holy Things and Practices	145
	5.4.2 The Eucharistic Co-inherence of the Church and the World	149
5.5	Conclusion	152
CHAPTER 6	CULTURES OF *KOINONIA* IN A TECHNOLOGICAL WORLD	153
6.1	Introduction	153
6.2	Cultures of *Koinonia*	155
	6.2.1 The Culture of the Table	157
	6.2.2 The Culture of the Word	160
	6.2.3 The Culture of the Body	164
	6.2.4 The Culture of Vocation	170
	6.2.5 The Culture of Peace	174
	6.2.6 The Culture of Celebration	177
6.3	Conclusion	180
CHAPTER 7	EPILOGUE	182
	REFERENCES	185

Certificate of Authorship of Thesis and Agreement for the Retention and Use of the Thesis

I, Christine Florence Ledger

hereby declare that this submission is my own work and that, to the best of my knowledge and belief, it contains no material previously published or written by another person nor material which to a substantial extent has been accepted for the award of any other degree or diploma at Charles Sturt University or any other educational institution, except where due acknowledgment is made in the thesis. Any contribution made to the research by colleagues with whom I have worked at Charles Sturt University or elsewhere during my candidature is fully acknowledged.

I agree that the thesis be accessible for the purpose of study and research in accordance with the normal conditions established by the University Librarian for the care, loan and reproduction of thesis.*

7 October 2004

Signature Date

* Subject to confidentiality provisions as approved by the university

Acknowledgments

I am grateful to all those who made this thesis possible. The Australian Government provided the scholarship that allowed me to step out of the workforce and focus on research. The staff of Charles Sturt University Research and Graduate Training administered the scholarship, guided me through the processes of postgraduate research and provided skills training. St Mark's National Theological Centre in Canberra provided the library resources and physical space for my work. The staff, students and volunteers of St Mark's and its library provided advice, coffee, conversation and times of worship together. I am particularly grateful to those staff and students who were members with me of the regular postgraduate seminars. Those of us who also shared a room in the research centre shared our aches and pains and our small triumphs along the way on an even more regular basis. This special circle of friends included David Hunter, Heather Thomson, Winifred Wing Han Lamb, Sarah MacNeil, Merilyn Clark, John Robinson, Matthew Anstey, and Bruce-Paul. David lost his battle with cancer in December 2003. His faith, courage, generosity and persistence were an inspiration to all of us at St Mark's.

Stephen Pickard, my principal supervisor, accompanied me on the journey of research and writing, always encouraging and constructive in his advice and generous with his personal library. Despite a heavy workload and even when on leave, Stephen always made time for and gave careful attention to my work. John Painter, my associate supervisor, issued me the initial challenge to enrol in a PhD and guided me through the enrolment processes. Ian Barns, whose friendship extends back to my time at Murdoch University, gave generous advice and comment on my early ideas for a topic and also on the final draft. Geoff Alves, Robert Alves, Winifred Lamb, Louise Scott and Sue Walker also read the final draft. Winifred suggested very helpful stylistic improvements, Robert indicated where my prose was inaccessible or clumsy and Louise and Sue did the painstaking work of proofreading. Last, but not least, my husband Geoff Alves gave me not only his emotional support but also the benefit of his publishing and computer skills. His assistance with editing, proofreading and layout have been invaluable and his company on evening walks lifted my spirits when the task seemed too big.

I dedicate this thesis to my parents, each of whom passed away in the course of the writing of this thesis. Their gifts to me are immeasurable.

Dorothy Jean Ledger (née Spooner)
3 April 1915 – 8 August 1999

Arthur Phillip Ledger
26 January 1916 – 17 May 2003

Abstract

The theology of technology is a relatively new academic field. It provides a bridge between the more established fields of science and religion studies and the ethics of technology. Science and religion studies include little specific attention to technology and often carry an underlying assumption that technology is the value-free practical application of science. Ethicists of technology specialise in the ethical implications of particular technological innovations and generally give little attention to theological understandings of human capacities to create and destroy as manifested in the broader context of technological culture. This thesis is written from the standpoint that technology is more than the value-free application of science. It is a culture, a way of being human. Our technological culture raises theological questions regarding our vocation as human beings made in the image of God. This is the basis for a theology of technology.

In seeking to contribute to this new field, this thesis brings into dialogue the philosophy of technology and the doctrine of creation. The philosophy of technology provides insights into the nature of technological culture. Drawing on the insights of Martin Heidegger, Jacques Ellul, Langdon Winner, Albert Borgmann and others, this thesis concludes that technological culture tends to disregard and distort the dynamic of relatedness between humankind, God and the world around us. The doctrine of creation, understood in trinitarian terms, provides a framework for understanding the nature and significance of this natural relationality. Wolfhart Pannenberg, Colin Gunton, Daniel Hardy, David Ford and others demonstrate that relational life belongs to the very structure of creation. The dynamic of otherness-in-relation of the triune God is echoed throughout all creation. With the assistance of Philip Hefner's thought, this leads to an understanding of human beings as the created co-creator.

The theology of technology presented in this thesis is based on this relational approach. It involves both a theological critique of technological culture based on trinitarian relationality and also a construction of a theology of technology based on a relational view of human creativity. Its key insight is that true human creativity is grounded in loving relations as

revealed in Christ. The implications of this theology of technology for the life and practice of the church are then explored from this basis. The thesis suggests that *koinonia* describes the nature and quality of trinitarian relationality that the church is called to embody and practise in liturgical and daily life. Some particular examples of cultures of *koinonia* are elaborated. These demonstrate the world-view and lifestyle consistent with a theology of technology in which our relatedness with God and the world is honoured and nurtured.

The thesis concludes by indicating how a theology of technology may provide direction for the ethics of technology.

[Chapter 1]

Introduction

The aim of this thesis is to contribute to the development of a theology of technology. The words "theology" and "technology" are not commonly associated with each other and so this task may seem a strange one. The fields of science and theology, and ethics of technology, are better known. Some writers contribute to both of these fields. For example Ian Barbour has written two companion books, *Religion in an Age of Science* (1990) and *Ethics in an Age of Technology* (1993). Ted Peters' recent book, *Science, Theology and Ethics* (2003), brings the two fields together in one volume, with an emphasis on genetic and nuclear technology. Such linkages suggest that an ethics of technology arises naturally out of the conversation between science and theology. This thesis is written in the conviction that these linkages could be deepened and strengthened if particular attention were given to our theological understanding of technology. A theology of technology may then provide a helpful bridge between science and theology and the ethics of technology.

So, while this thesis has a bearing on science and theology debates and the ethics of technology, its task is quite distinct. It argues that technology is more than the practical application of science. Technology has become our cultural context. An ethics of technology requires more then a consideration of the benefits and dangers of particular devices or procedures. It needs to be undergirded by an understanding of how devices and procedures arise from and influence contemporary culture. Technology and technological culture blur into one another because the machinery of technology cannot be easily separated from its mutually determining cultural setting. A consideration of technological culture leads in turn to fundamental questions about the creative and destructive roles of human beings in the world. This is the domain of theology which is concerned with our relationships with each other, the world around us and with God. A theology of technology, arising from this line of inquiry, may therefore provide a foundation for an ethics of technology. It is this less explored territory between, on the one hand, debates about science and theology

and, on the other hand, debates about the ethics of technology, that this thesis aims to address.

Science and theology discussions are closely related to those of science and religion. As Peters comments, religion encompasses the living profile of a religious tradition, including its practices and doctrines, whereas theology is restricted to "the rational reflection within a given religious tradition" (2003, 4). In the academic field of science and theology, conversations take place between scientists and theologians seeking ways of understanding reality and gaining knowledge. The scientists may or may not identify themselves with a religious tradition. There is an interest in what is and what is not accessible to human understanding through science as compared to theology. Similarly, there is an interest in discerning what is common and what is in conflict between the two disciplines. A recurring theme is the nature of the relationship between science and religion. Are they enemies, strangers or partners? (Barbour 2000).

Science and theology studies, and its closely related field, science and religion, have a long history and there is an extensive literature in this area. The volume edited by Lindberg and Numbers, *God and Nature* (1986), provides an historical overview of these interactions. Writers influential in science and religion studies in the late twentieth century include Arthur Peacocke (1993b), Ian Barbour (1996), John Polkinghorne (1999), Thomas Torrance (1984), Charles Birch (1981) and Ted Peters (2003).

Just as the science and theology field stands within the science and religion tradition, so too is the ethics of technology field part of a wider science, technology and society community, commonly known as STS (Cutcliffe and Mitcham 2001). This interdisciplinary community has developed since the 1970s as an umbrella for those researching the sociology, politics, history, philosophy and ethics of technology. Those within this network who are concerned with the ethics of technology address the dilemmas raised by specific technological innovations. These innovations are many and varied and include biomedical technology (e.g. genetic engineering, in vitro fertilisation, cloning, genetically modified foods), information technology (e.g. computerisation, electronic communication, the Internet, mobile telephony), and military technology (e.g. nuclear, chemical and biological weapons). Some writers bring a religious framework to their contribution while others write from a secular point of view.

The church is present in both the science and theology discussions and the ethics of technology debates. The World Council of Churches, for example, held a world conference in 1979 which encompassed both (Abrecht 1980; Shinn 1980). The church is expected to,

and does, pronounce judgement on the moral and ethical implications of particular technologies. This thesis focuses its attention on the challenges facing the life and practice of the church in contemporary technological culture. However, in so doing, it goes beyond how the church might or should judge particular technologies. Rather, it addresses the implications of technological culture for the ways in which the church understands and practises its sacramental life in the context of creation.

The field that specifically identifies itself as the theology of technology is small and relatively young. It emanates primarily from philosophers of technology with an interest in theology. Many draw their inspiration from the post–World War II work of the philosopher Martin Heidegger. In particular his essay *The Question Concerning Technology* (1993d) provides a rich resource for theological reflection. Carl Mitcham and Jim Grote (1984) edited a volume called *Theology and Technology* in 1984 arising from the community of the philosophy of technology. Albert Borgmann is one of the most influential thinkers in this community. His book, *Technology and the Character of Contemporary Life* (1984b), is a key contemporary text in the philosophy of technology. In recent years he has turned his attention increasingly to the theology of technology. His latest book, *Power Failure* (2003), considers the place of Christianity in technological culture. Gaillardetz (2000) has written on the implications of Borgmann's work for spirituality, community and liturgy. Other writers, while not naming their interest as "theology of technology", bring together in their own writings insights from both the philosophy of technology and theology. Jacques Ellul, for example, wrote dialectically i.e. his critiques of technology and his theological books need to be read side by side (Ellul 1989, 45). Systematic theologians who write on the doctrine of creation also touch on the theology of technology, without naming it as such, by virtue of their interest in the vocation of human beings in the world. Wolfhart Pannenberg (1994) and Colin Gunton (1993) are among these.

This thesis is interdisciplinary. Specifically, it aims to build a bridge between science and theology and the ethics of technology. In doing so, it draws upon the resources of the philosophy of technology, systematic theology and ecclesiology.

The philosophy of technology is fertile ground for this discussion as it brings together thinkers who give specific attention to technology and technological change. Philosophy is a natural and historical partner to theology, and especially to systematic theology, as both seek to find coherence and intelligibility in understanding reality. In science and theology conversations, it is the philosophy of science that meets systematic theology. In this thesis, the philosophy of technology and systematic theology are brought together in the expectation that the consequent cross-fertilisation will bring new ways of understanding

the creative and destructive activities of humankind. Ecclesiology, the study of the church, is a branch of systematic theology and provides the resources for framing the implications of a theology of technology for the life and being of the church.

Philosophy of technology, systematic theology and ecclesiology are themselves large fields and I need to be selective within them. Within the philosophy of technology there are three broad schools of thought (Borgmann 1984b, 9). The first is the substantive view. Thinkers in this school view technology as a powerful force shaping our world. The second is the instrumentalist view. This understands technology as a collection of tools to be used for good or ill and is the view most apparent in public policy. The third is the pluralist view, which sees technology as just one part of a complex web of influences—political, economic and social—in which no recognisably distinct pattern emerges for understanding technology. The writers considered in this thesis are all influenced by the substantive view. They have been chosen because they give serious consideration to the nature of technological culture. They are critical of an instrumentalist approach to technology. Each argues that technology does have a distinctive influence on society and that this influence is much more than that of a value-neutral tool. These writers include Martin Heidegger (1993d), Jacques Ellul (1980), Langdon Winner (1978), Ian Barbour (1993) and Albert Borgmann (1984b). They represent a school of thought that seeks to understand the intrinsic nature of technological society as it is known and lived in industrialised societies. As they see it, technology forms our way of life. Therefore this school of thought does not draw a sharp distinction between "technology" and "technological culture". The terms are often used interchangeably and this usage is adopted in this thesis.

Within systematic theology I have chosen to focus on contemporary writers in the doctrine of creation. It is here that insights can be drawn about the creative and destructive roles humankind can play, including through our technology. Contemporary theology of creation is trinitarian and so focuses not only on the actions of God as creator of all that is, but also on the redemptive life, death and resurrection of Christ and the ongoing work and inspiration of the Spirit in our lives. This provides solid ground for understanding our human vocation in the world, including our technology. Wolfhart Pannenberg (1994), Colin Gunton (1993) and Daniel Hardy (2001) are among those considered here.

A major theme to emerge in this thesis from these considerations of the philosophy of technology and the doctrine of creation is that of relationality. The trinitarian doctrine of creation emphasises the importance of the loving communion in the very being of God, three-in-one, a communion that is echoed in and with God's creation. The prevailing approach to the philosophy of technology argues that our technological culture encourages

us to hold an instrumental world-view and this world-view can blind us to the relational nature of creation and human life.

The theme of relationality becomes the basis for the proposed theology of technology and subsequently for ecclesiology, the third partner in the interdisciplinary conversation. In considering the implications of relationality for the life of the church, I explore the specific characteristics of *koinonia* or loving community. How might *koinonia* provide insights for the practical expression of a theology of technology? This raises questions of both world-view and lifestyle. There is a pressure, both from within and outside the churches, to give speedy and succinct affirmation or rejection of any particular technological innovation. What is not so often expected of the churches is to provide insights into our technological way of life in general. Yet specific technological innovations arise from this daily culture, and the philosophy of technology helps us to understand the importance of coming to terms with that culture. Thus, a further aim of this thesis is to explore the implications of a theology of technology for the life of the church as it discerns its being and mission in everyday life. While this includes opinions and judgments the church may reach about particular technological innovations, the aim is broader and deeper. It addresses the world-view and lifestyle of the community of the church and its interaction with the natural world and the wider human society.

Two interweaving methodologies flow through this thesis. The first is a theological critique of technological culture. In this sense, the thesis addresses theology *and* technology. The second is a positive construction of a theology *of* technology. Insights arising from the theological critique help us to see what is flawed, inadequate and dangerous in contemporary approaches to technology and technological culture. In turn, these insights indicate how humankind might express our God-given creative nature in relationship with each other and the world around us in healthier ways. This provides the basis for the positive construction of a theology of technology. These two threads are tightly interwoven. The church cannot be set apart from the society and the culture in which it lives. The theology and life of the church are influenced by technological culture too. Therefore, this thesis is not an exercise in showing how the church might condemn technological society. Rather it strives to show how the life of the church and the nature of contemporary society may be enriched by a theology of technology.

This is the broad scope of the thesis. It does not directly address the associated interdisciplinary fields of science and religion nor the ethics of technology. However, it raises new questions and challenges for each of them. I hope that the insights of this thesis may encourage researchers in science and theology not to regard technology simply as the

value-neutral application of science and that the proposed directions towards a theology of technology might provide Christian ethicists with a stronger theological framework from which to discern ethical directions for church and society.

In its critique of technological society, this thesis concerns itself primarily with societies living with, and even dominated by, the latest technology. Many countries in the Third World do not yet have access to this technology which raises questions of power relations between the world's rich and poor. These are important matters that I have addressed to some extent in my earlier postgraduate research (Ledger 1981; Ledger 1985). In this thesis, however, I will be focusing on the implications for churches immersed in advanced technological societies. Given the rapid development of globalisation, this thesis may have some relevance worldwide, but it does not attempt to address questions of access, distribution and international power relations concerning technology.

All direct quotations are faithful to the original source in language and spelling. While I prefer to use inclusive language, gender-specific references are included without the repeated qualification of "sic". I have chosen the gender-inclusive terms "humanity", "humankind" and "human beings" rather than "man" and generally follow these with the pronoun "our" rather than "their". A note about the term "church" is also necessary. I am aware that there are many denominations of the Christian church, most commonly referred to as "churches". In my discussions on ecclesiology, I use the term "church" to refer to them all.

The structure of the thesis is as follows. The next chapter, Chapter 2, considers a selection of philosophical critiques of contemporary technological culture. Where the philosophers reviewed speak theologically, these insights are also included. It begins with the work of Martin Heidegger (1993d) and continues with that of Jacques Ellul (1980), Langdon Winner (1978), Albert Borgmann (1984b) and others. This chapter argues that technological culture is characterised by a disregard and distortion of patterns of relational life.

Chapter 3 reviews the Christian doctrine of creation and its grounding in an ontology of relation. It explores the work of contemporary theologians who argue for the trinitarian basis for this doctrine. Foremost among them is Wolfhart Pannenberg (1994), whose systematic theology includes a volume devoted to the doctrine of creation. Colin Gunton (1993) specifically addresses the theme of relationality in the theology of creation and so provides valuable insights. Alfred North Whitehead's process theology (1929) and Martin Buber's thought (1970), while not overtly trinitarian, also offer some insights into

the nature of relationality. Finally, Philip Hefner (1993) contributes ideas to the nature of human vocation in the light of the doctrine of creation.

Chapter 4 is the pivot of the thesis. The conclusions from the two previous chapters are drawn together to form the basis of a theology of technology based on relationality. The insights from Chapter 2 about the nature of technological culture are set in the context of the understanding of the doctrine of creation developed in Chapter 3. Two threads are developed: the theological critique of technological culture and the positive construction of a theology of technology. In the process of this discussion, implications for our understanding of natural theology and also for our vocation as human beings created in the image of God are indicated.

From this pivot, Chapter 5 explores the implications of this theology of technology for church life and practice. From an ecclesiological understanding of the church based on the Trinity, it suggests that relationality manifested as *koinonia* is basic to the very being, life and practice of the church. Following the two strands formulated in Chapter 4, this chapter considers, first, how technological culture has distorted the *koinonia* of the church and the world and, second, how a theology of technology may help to energise the *koinonia* of the church and the world. It elaborates the framework for a world-view and lifestyle that nurtures this *koinonia*.

Chapter 6 seeks to give substance to this attitudinal and lifestyle framework through a collection of specific windows onto our daily cultures and their corresponding liturgical practices. These are called cultures of *koinonia* and include the cultures of the table, the word, the body, vocation, peace and celebration.

Chapter 7 is an epilogue to the thesis. It draws together the insights of the thesis and suggests directions for further research.

[Chapter 2]

Technology and Technological Society: Issues and Challenges

2.1 Introduction

Modern Western society is characterised by its reliance on technology. It can be described as a technological society reliant on such things as electronic communications, a globalised economy and sophisticated medical systems. Technology forms the pattern of our days and the face of our world. So much do we take it for granted that we hardly notice it is there, let alone reflect theologically about it. This chapter examines the nature of technology and technological society. It provides a basis for a constructive engagement with theological insights about humankind's technological activities.

This exploration is not a catalogue of new machinery, devices and techniques and the uses, good and bad, to which they are put. Rather it is an inquiry into the nature of technological society itself. I argue that the significance of technology lies not so much in the particular devices we use as in the technological culture and world-view that is expressed through those devices. The machinery of technology and the cultural context in which it is set cannot be easily disentangled, according to this argument. Technology is our way of life. As will become apparent in the following discussion, the terms "technology" and "technological culture" are therefore used interchangeably.

The philosophy of technology is the primary resource for this inquiry along with insights drawn from the sociology, history, politics and theology of technology. Often these fields are not sharply distinct but flow into each other in multidisciplinary conversation. This chapter will explore the nature of technology and technological society drawing on the work of some of the key thinkers in these fields. This will lead to fundamental questions of metaphysics and theology. How are human beings' understandings of God, the creation of the world and our very human nature expressed in our technological way of life? As Davi-

son puts it, "Technology is not only world-building, it is simultaneously world-revealing" (2001, 115). Critiques of technology reveal layers of understanding about humanity, the world and God, which in turn provide the basis for a theology of technology.

The chapter begins with a consideration of the work of Martin Heidegger, one of the first and most influential philosophers to give serious consideration to technology. His work is chosen as a starting point because he was one of the first great thinkers to argue that an understanding of technology that is limited to the utilisation of machinery is an inadequate, and and even dangerous, way of conceiving human being and action. From this perspective other key scholars, who give serious attention to the nature of technological culture, are considered. From this survey, some key themes will be elaborated. The chapter will conclude by indicating how these themes illustrate the importance of relationality as a focus in critiquing technological culture. Technological culture often fails to recognise, honour or nurture the fundamental relatedness of all things with each other. This lack of awareness leads to a technological distortion of the relatedness of life, an issue that is further developed in Chapter 3, which suggests that relationality is also an important theological theme in the doctrine of creation. It is at this interface between the philosophy of technology and the doctrine of creation that the central features of a theology of technology will be sought.

What is technology? A succinct definition of the term is difficult and somewhat problematic because the very definition of technology is currently part of the debate. The word "technology" has entered the vernacular quite recently and is loosely defined. The word can refer to specific tools and machines, e.g. a computer, or to areas of technical development e.g. biomedical procedures, or to large organisational structures and networks, e.g. telecommunications, or to technique and technological society itself. Willoughby teases out and proposes distinctions between technology, technique, technology-practice, technical, technological and other related terms (1990, 15–44). He concedes, however, that the term technology "is employed in the English language to denote a mixture of phenomena and concepts; it is therefore impossible to provide a precise and universal definition of the term without it becoming specialized jargon" (26). Winner suggests that this looseness of definition may be a symptom of the rapidity of technological change over the last century (1978, 8–12). While each specialist field is developing its own language, language about the phenomenon of technology itself is lagging behind. This can hamper, or at least complicate, constructive discussion about technology and its relationship to society.

One effect of this ambiguity of language is a tendency for commentators of technology to be categorised either as "technophiles" or "Luddites", pro-technology or anti-technology

(Graham 1999, 6–14). This polarisation inhibits reflection on technology and possibilities for human communities to influence technological change. Critics of technology run the danger of being dismissed, most commonly as Luddites, whereas their intention and goals are to stimulate constructive reflection and debate on healthy human societies and culture. As Winner comments:

> [D]iscussions of the political implications of advanced technology have a tendency to slide into a polarity of good versus evil. Because there is no middle ground for talking about such things, statements often end up being expressions of total affirmation or total denial ... Conversations gravitate toward warring polarities and choosing sides. One source of fascination in my inquiries has been that existing discussions are often thoroughly nervous, even hysterical. When intelligent persons can become so upset about ostensibly mundane matters, there is something peculiar going on (1978, 10–11).

It is precisely because technology is so identified with contemporary culture and is associated with those devices, commodities and services that give shape to our daily lives, that a critique of technology is a sensitive topic. This may at least partially explain the depth of feeling discussions about technology can engender, with the subsequent stereotyping of views as pro-technology and anti-technology. The intention of this thesis is to examine contemporary technological culture in order to understand ways in which humankind may better recognise, honour and nurture God's creation.

While the definitions of technology may be loose and varied, this should not prevent us seeking to understand technology and technological society. This thesis proceeds on the basis that consideration of the machinery and the objects of technology requires consideration also of the cultural context that supports them. The two are interdependent and give form to each other. The writers surveyed here share this general starting point, some to the point of collapsing the use of the terms "technology" and "technological culture" into each other. It is only as human beings seek to understand technology and technological society that our language to speak about them develops.

This chapter does not attempt to consider all twentieth- and twenty-first-century critiques of technology and technological culture. Attention is focused on writers who take seriously the ways in which technology gives shape and substance to contemporary human society and culture. This choice is made from the expectation that a theology of technology will arise from a consideration of the implications of the doctrine of creation for human creativity and human culture. As Borgmann puts it, "Our pretheoretical intuition

that technology is a human enterprise that somehow determines or constitutes the set of features that distinguishes our time is a sufficient guide" (1984a, 307).

2.2 Martin Heidegger: The "Essence of Technology"

My consideration of critiques of contemporary technology begins with the work of the German philosopher, Martin Heidegger. Technology was a major theme in Heidegger's writing, most especially in his 1953 essay "The Question Concerning Technology" (1993d) and his 1949 essay "The Turning" (1977). Both originated in a series of lectures given in 1949, at a time when the world was recovering from World War II. These essays were not translated into English until 1977. According to Borgmann and Mitcham, this has contributed to some delay in serious attention being given to Heidegger's philosophy of technology, at least in English-speaking academic circles (1987, 108). Also, Heidegger's controversial involvement with the Nazi regime in the early 1930s cast a shadow over his reputation. The implications of his wartime political views for his philosophy continues to be analysed and debated (Borgmann and Mitcham 1987). I will not enter into these debates here, but rather focus on the importance of Heidegger's thought as a catalyst and point of reference for philosophical discussions of technology in the late twentieth and early twenty-first centuries.

Heidegger challenges what he calls an instrumentalist view of technology, that is the view that an understanding of technology can be reduced to a simplistic understanding of the utilisation of value-neutral tools. He argues that one must look beyond the tools and machinery of technology and the uses to which these are put to the essence of technology (1993d, 311). To understand technology requires a consideration of the world-view within which technology operates and which technology itself bolsters. To ignore this deeper world-view and to focus only on tools and the use or abuse to which they are put is, according to Heidegger, not only an inadequate understanding of technology, but dangerous:

> [T]he essence of technology is by no means anything technological. Thus we shall never experience our relationship to the essence of technology so long as we merely represent and pursue the technological, put up with it, or evade it. Everywhere we remain unfree and chained to technology, whether we passionately affirm it or deny it. But we are delivered over to it in the worst possible way when

> we regard it as something neutral; for this conception of it, to which today we particularly like to pay homage, makes us utterly blind to the essence of technology (1993d, 311–312).

Heidegger's essay, then, is about the "essence" of technology, the way human beings see and relate to the reality of the world around us, "our way of taking up with reality" (McCullough 2002, 21). It is about our blindness to the essence of technology and the danger that this blindness harbours. Heidegger's insights direct our attention to the importance of deep-seated human attitudes and self-understandings, rather than to the machinery of specific technological forms. Davison captures this concept nicely: "Technology is not the neutral vehicle of human agency, it is the essence of human agency" (2001, 101). Graham remarks that Heidegger regards technology as an ontological force, a force which possesses "the capacity to constitute human existence" (2002, 7). Heidegger's preoccupation is not with the risks associated with particular technologies but rather with the "human distress caused by the technological understanding of being ... The danger, then, is not the destruction of nature or culture but a restriction in our way of thinking—a leveling of our understanding of being" (Dreyfus 1995, 99). Heidegger, then, is not a Luddite advocating the destruction of machinery and a return to pre-technological times. He asserts, "We can affirm the unavoidable use of technical devices, and also deny them the right to dominate us, and so to warp, confuse and lay waste our nature" (Heidegger 1966, 54). He is more a prophet seeking to open our eyes to the world in new ways so that we may recover our full capacities as human beings.

Heidegger reaches the conclusion that technology is the end of metaphysics, the culmination of centuries of Western philosophy. Technology is not simply a matter of applied science. Rather, Western science itself is a product of a particular way of dealing with the world that finds its expression in technology and finds its roots in centuries of Western metaphysics (Heidegger 1993d, 327). Heidegger argues that the way in which we relate to the reality of the world around us has deep roots in Western philosophy: "Technology is in its essence a destiny within the history of Being and of the truth of Being ... As a form of truth technology is grounded in the history of metaphysics, which is itself a distinctive and up to now the only perceptible phase of the history of Being" (1993c, 244). According to Hediegger, metaphysics, as attempts by human beings to understand and explain ultimate truths of the existence of the universe through Western philosophy, has culminated in the way of understanding and relating to the world as experienced through technology. This metaphysics has become so dominant that it is commonly regarded as the only way to understand and relate to reality.

Borgmann summarises Heidegger's view that technology is the culmination of metaphysics this way:

> He has tried to show how the profound vision of the world that the pre-Socratic thinkers have articulated came to be restricted to the foreground of things and projects in the philosophy of Plato and Aristotle. The ground on which everything rests and the light in which everything appears moved into oblivion. Heidegger traces this movement through the stages of thought that were advanced by Descartes, Leibniz, Kant, Hegel, and Nietzsche. In Nietzsche's will to power Heidegger sees the final and extreme attempt on the part of western humanity to establish itself absolutely, i.e. independent of any ground or illumination that would be other and greater than human existence. Modern technology, then, is just the final stage of metaphysics (1984b, 40).

Western metaphysics grasps only that which is comprehensible and present to the rational mind. Other ways of thinking and of engaging with reality open us to mystery and to the other. "This openness to mystery is that which is most distinctively post-metaphysical in Heidegger's thought" (Smith 1991, 383). As Heidegger sees it, technology blocks off relation to the otherness of reality and this has brought alienation. As Smith puts it, "The entire history of the West is the history of the growing alienation from and oblivion of Being. To allow Being to again presence initially involves seeing that there is something Other than man that is not his object" (379). Heidegger's claim that technology is the end, the culmination, of metaphysics is a claim that relating to the world only in technological terms blocks human beings' capacity to relate to the deeper mysteries of being. In his essay "What Is Metaphysics?", Heidegger (1993e) argues that metaphysics needs to address the question of "nothing", i.e. the great mystery of creation: why do we and other beings exist at all? He maintains that metaphysics must take account of transcendence, the relation of human beings to the incomprehensible, that which is beyond human perception and control. He therefore challenges the capacity of science to explain all. He writes, "Science would like to dismiss the nothing with a lordly wave of the hand. But in our inquiry concerning the nothing it has by now become manifest that scientific existence is possible only if in advance it holds itself out into the nothing. It understands itself for what it is only when it does not give up on the nothing" (109).

So, what is this essence of technology that, according to Heidegger, is the culmination of metaphysics? Heidegger finds this essence in the particular way in which technology "reveals" the world and the world's hidden truth (1993d, 318). He compares this mode of revealing to other modes as found in poetry and the arts and concludes that the technological and the artistic modes of revealing the world are quite different from each other. The

artistic and poetic modes "bring forth" truth in the way a potter brings forth the hidden beauty of clay into the creation of a pot. The artist works with and respects the materials and processes of nature. Through technology, however, what is concealed is also revealed, but by ordering and "setting upon". Through technology, the world is revealed as a "standing-reserve" to be ordered and used by human beings. Heidegger calls this technological world-view "enframing", a way of approaching the world and its truth by imposing order on it and understanding it as a resource to be exploited. It draws on the exact sciences such as physics in its service, but is not simply applied science (1993d, 320). It is typified by its rational, instrumental and reductionist nature.

Heidegger argues that the "enframing" mode of regarding the world and seeking truth is in danger of becoming the one and only way in which human beings relate to the world, at least in the West. Human beings come to understand each other as part of the "standing-reserve" while at the same time seeing ourselves as "lord of the earth" (332). If the world and other people are understood solely as a "standing-reserve", commonly known today as "resources", then we live with great danger (Borgmann and Mitcham 1987, 109). We lose the capacity to relate to the world, each other and God in other ways. As Heidegger explains,

> The threat to man does not come in the first instance from the potentially lethal machines and apparatus of technology. The actual threat has already afflicted man in his essence. The rule of enframing threatens man with the possibility that it could be denied to him to enter into a more original revealing and hence to experience the call of a more primal truth (1993d, 333).

Heidegger's writings provide a sharp critique of modernity and human beings' corresponding "faith in human reason and its ability to transform the world" (Smith 1991, 370). They elaborate the mode of "enframing" as one that orders, analyses, uses, calculates, exploits and transforms according to human will. This mode has little need of God and draws a sharp distinction between science and religion. As Smith puts it, "[T]he most profound longing for modernity has been to fashion a world that is the product of human choice" (369). But what of postmodernity? Has this late-twentieth-century critique of modernism brought a challenge to technology as well? Smith argues that postmodernism is but the "logical outcome of modernity" as discerned by Heidegger. In our postmodern society, our drive to recreate the world according to our own choices and our own technical competence remains, and has yet to be radically transformed (384–385). Heidegger argues that this transformation can only come about by our coming to see and understand, rather than being consumed by, the essence of technology itself.

It is in this very danger of enframing, in the technological world-view becoming an all-consuming obsession, that Heidegger locates the potential for what he calls the "saving power" to grow. "But where the danger is, grows the saving power also", he says, quoting a poem by Hölderlin (1977, 42). If human beings come to understand for ourselves the very essence of technology, come to understand the rule of "enframing", then we might go beyond its thrall.

> The granting that sends one way or another into revealing is as such the saving power. For the saving power lets man see and enter into the highest dignity of his essence. This dignity lies in keeping watch over the unconcealment—and with it, from the first, the concealment—of all essential unfolding on this earth. It is precisely in enframing, which threatens to sweep man away into the surrender of his free essence—it is precisely in this extreme danger that the innermost indestructible belongings of man within granting may come to light, provided that we, for our part, begin to pay heed to the essence of technology.
>
> Thus the essential unfolding of technology harbors in itself what we least suspect, the possible rise of the saving power.
>
> Everything then, depends upon this: that we ponder this rising and that, recollecting, we watch over it. How can this happen? Above all through our catching sight of the essential unfolding in technology, instead of gaping at the technological. So long as we represent technology as an instrument, we remain transfixed in the will to master it. We press on past the essence of technology (Heidegger 1993d, 337).

Heidegger's hope in the "saving power" lies in the expectation that human beings might "catch sight" of technology. If we are able to see and understand the essence of technology then we would understand its limitations as a way of understanding and relating to the world, and by implication, God. We would regain our capacity to acknowledge the Other, the mysterious, that which is beyond our power to order, organise, exploit or even to understand. The utter givenness of existence, beyond the capacity of human beings to grasp and control, would come into the foreground rather than disappear into oblivion (Kateb 1997). Was Heidegger meaning a divine power when he writes of the "saving power"? We are left to speculate, though in response to a question in an interview regarding how technology might be controlled, Heidegger made his now famous remark: "Only a god can save us" (quoted in Borgmann and Mitcham 1987, 152). But certainly, Heidegger elevates poetry, art, music and craftsmanship as pre-metaphysical modes of revealing that present the hidden truths of reality in ways denied to technology (Heidegger 1993d, 339–341).

Lovitt suggests that Heidegger's juxtaposition of the "danger" of technology with the "saving power" is the place where humanity's ongoing creative responsibility is lodged. But to exercise this responsibility, we need first to understand the essence of technology, its way of "enframing". Otherwise, says Lovitt,

> [man] becomes entrapped in one of two attitudes, both equally vain: either he fancies that he can in fact master technology and can by technological means—by analyzing and calculating and ordering—control all aspects of his life; or he recoils at the inexorable and dehumanizing control that technology is gaining over him, rejects it as the work of the devil, and strives to discover for himself some other way of life apart from it. What man truly needs is to know the destining to which he belongs and to know it as a destining, as the disposing power that governs all phenomena in this technological age (1977, xxxiii).

The salvation, the saving power, of which Heidegger speaks flows from coming to understand that the technological is an important, but limited way, of viewing reality. From this understanding flows, in turn, a recognition of otherness, mystery, the divine. As Dreyfus points out, "[E]ach time Heidegger speaks of releasement and the saving power of understanding technology as a gift he then goes on to talk of the divine" (1995, 104). By coming to understand technology, by stepping back and seeing the essence of technology for what it is, human beings gain or regain the capacity to realise that "we receive our technological understanding of being", and to realise that we are contingent and ultimately not able to control everything simply as a resource (102).

Heidegger's insights, therefore, have implications for the theology of creation and the nature of humankind's relationship with God and the world. In his essay, "The Turning", Heidegger stresses that the "saving power" rests in human beings' discovery, or rediscovery, of the essence of being human, the essence of their own being: "When insight comes disclosingly to pass, then men are the ones who are struck in their essence by the flashing of Being. In insight, men are the ones who are caught sight of" (1977, 47). The danger is that a view of understanding the world blinkered by technology will blind us to other ways of perceiving reality. "[W]e do not yet hear, we whose hearing and seeing are perishing ... under the rule of technology ... So long as we do not, through thinking, experience what is, we can never belong to what will be" (48–49).

For Heidegger then, to grapple with understanding technology is not about grappling with the wise use of instruments and machines. Rather it is about the way in which human beings take up with reality, how we discern and know the truth of the world (Mc-

Cullough 2002, 22). Western metaphysics has culminated in a profound rationalism and instrumentalism manifested in the essence of technology. This is just one way of relating to the world and to God and just one way of discerning truth. Salvation lies in opening our eyes and coming to terms with the danger of this obsession and being open to the givenness of our existence, a givenness that is ultimately beyond the control of technology. By its need to control, order, use, and organise technology has no need of the other. As Smith puts it, "We come to see ourselves as the only thing in Reality. We lose our relation to that which is not simply our projection ... Technology is immune to simple willful control, but it is not immune to another form of revealing" (1991, 378). Heidegger anticipates that this form of revealing will be found in the realms of poetry and art and in the acknowledgment of the way in which "man is linked fundamentally to the mysterious ground from which he alienates himself only at his own peril" (387).

Heidegger's insights have provided rich material for other thinkers to grapple with, develop and question. First, Heidegger alerts us to the dangers of what Davison (2001) calls "technological sleepwalking". Our blindness to the essence of technology means we are trapped into one way of understanding and dealing with the world. Second, our instrumentalist view of technology, which understands technology simply as a collection of tools to be used for good and ill, is not only partial, but is dangerous, because it blocks our awareness of other ways of living and being. Third, we must take seriously the ways in which technology forms and defines our culture and our very vocation as human beings.

The next section examines a number of contemporary thinkers who share Heidegger's view that technology is more than value-neutral tools, but rather is crucial in forming our technological world-view and our technological culture. Each of these thinkers reject an assumption, commonly held in society, that to understand and assess technology requires simply the consideration of the application of a specific technological innovation. They argue that technology has a much deeper and profound interaction with the shaping of human culture and that this interaction needs to be made apparent if we are to begin to understand technology.

This thesis, therefore, works with the premise, argued by Heidegger, that technology is not neutral in regards to social and cultural formation and also to our formation as human beings. Through his writings, Heidegger encourages us to "catch sight" of the technological culture we take so much for granted (1993d, 337). The next section reviews the attempts of several thinkers who try to do just that.

2.3 Technological Culture: Contemporary Commentators and Critiques

Heidegger's work paved the way for the substantive, also known as the essentialist, view of technology (Feenberg 2000). Writers of this stream dismiss the instrumentalist view of technology as too limited and simplistic. Neither do they subscribe to the pluralist view whose corollary is that a specific study of technology is pointless. The substantive view is the understanding of technology that writers considered in this thesis identify with most closely. These writers have been chosen because they share an understanding of technology as tightly interwoven with contemporary culture. However, while there is a general acceptance among them that technology is a profound influence on our world, on our world-view and on human culture, the writers considered here differ regarding the degree of power vested in technology. Is technological culture self-determining? Is technology and technological culture shaped by human decision and action? Does technology have its own inherent limitations in giving shape to a healthy human culture? Has technology taken on the vestments of religion? These are some of the debates to emerge in the following discussion. They represent attempts to catch sight of technological culture.

2.3.1 Jacques Ellul: Technology as Autonomous

One of the most incisive critiques of technology in the twentieth century is of autonomous technology, technology out of human control, or technological determinism. The writer most commonly associated with this view is Jacques Ellul. Ellul began writing about technology in the 1950s and remains one of the better known critics of technology, particularly through his three books, *The Technological Society* (1965), *The Technological System* (1980) and *The Technological Bluff* (1990). These were written primarily from a sociological perspective. However, Ellul was also an influential biblical scholar of the Protestant tradition. Some commentators on Ellul point out that Ellul's books were in fact written in counterpoint (Neville 1994, 26). His theological works as well as his sociological writings need to be considered to gain a full appreciation of his thought. Indeed his life's work was self-consciously expressed in a dialectical fashion. He remarks,

> I have found myself forced to affirm both the independence of analysis of contemporary society and the specificity of theology, to affirm both the coherence and importance of the world in which we live and the incomparable truth of revelation in Christ—two factors that are alien and yet indissolubly linked. Thus the relation between the two factors can only be a dialectical one and critical one (1989, 44).

He goes on to say that his works were written to be read in correlation with each other. "*The Ethics of Freedom* is the exact counterpoint of the two books on technique (*The Technological Society* and *The Technological System*)" (1989, 45). *The Meaning of the City* was also written in counterpoint to his works on technology (Neville 1994, 26).

Sturm comments,

> The sociological efforts are efforts, from the perspective of faith, to state as fully and accurately as possible the character of this world, the specific context and condition of human life in this historical epoch. The theological studies, in turn, are formulated as messages of hope and the possibility of new life addressed precisely to persons in this world. In Ellul's affirmations, both are accomplished in light of eschatological expectations (1984, 565).

In this way, Ellul wrote his own theology of technology. As Neville comments, "Theology ... provided Ellul with a transcendent reference point for his sociological analysis and criticism" (1994, 26).

This section will first consider Ellul's sociological critique of technological society and then the theological framework in which this critique is lodged. Ellul's critique of the overpowering instrumentality of technology leads to the conclusion that technology works counter to the natural relatedness of nature, humanity and God. We can only await technology's self-destruction because of its denial of this natural relatedness. Humankind's obsession with, and faith in, the instrumental power of technology denies and disrupts the relatedness of all things. The inevitable consequence of this denial and disruption of relatedness is "global disorder" (Ellul 1990, 412). Technology and healthy relational life are posed in direct opposition to each other.

In his critique of technology, Ellul draws on the French concept of "technique". This does not translate easily into English, where the distinction between "technique" and "technology" is often blurred and the terms consequently used interchangeably (Ellul 1980, 33). Ellul defines "technique" as "the totality of methods rationally arrived at and having absolute efficiency (for a given stage of development) in every field of human activity" (1965, xxxiii). He then defines "technology" as "discourse on technique. It involves the study of a technique, a philosophy or sociology of technique, instruction in a technique" (1990, xv). While insisting on the difference between the two terms, Ellul nevertheless has permitted an English translator to use the Anglo-American use of "technology" for "technique" (1980, 33). Accordingly, the following consideration of his work uses both terms quite interchangeably, in the Anglo-American fashion.

While Ellul makes few direct references to Heidegger, much of his thinking travels a similar path. Ellul ascribes enormous power to technology in its dominance of contemporary society. He speaks of the "technological system" (1980) to which all aspects of contemporary life conform. This system has become, in effect, the environment into which people are born and to which they adapt (311). In this sense, his thesis that technique has become a dominating force and world-view resonates with Heidegger's concept of the dominance of "enframing" as a mode of revealing. However, as Graham comments, Ellul's view of technology is more deterministic than Heidegger's. "Ellul sees no escape from the inexorable 'iron cage' of rationality" whereas Heidegger "while insisting on the ontological nature of technology ... argues that it may be possible to establish a relationship between technology that is not nihilisitic" (2002, 7).

Ellul maintains that while technology arose from the world of machines, it has branched much further than the purely mechanical and now permeates all aspects of people's lives. As a result, technological problems are not confined to fixing or controlling a machine but also embrace the social and cultural realms. Societies have adapted their social and cultural traditions to the technique of machines. The logic of machines is now applied to all spheres of life and thought, so that technology shapes our politics, language, culture, administration and even our very thought patterns. "Technique integrates the machine into society. It constructs the kind of world the machine needs and introduces order where the incoherent banging of machinery heaped up ruins. It clarifies, arranges and rationalizes ... It is efficient and brings efficiency to everything" (Ellul 1965, 5). The logic of the machine has entered human culture to the point where to fix a machine does not fix a problem. Rather technological culture, by being oriented to the dictates of efficiency, order, predictability and control to the exclusion of other human values, becomes a problem in itself.

Science, too, has come to depend on technology. Technology is often understood as an extension of science, as applied science. However, science now depends on technology for its progress and has become increasingly reliant on sophisticated machinery for the testing of its theories. Technology is driving science, not the other way around. Ellul posits, "It is not a question of minimizing the importance of scientific activity, but of recognising that in fact scientific activity has been superseded by technical activity to such a degree that we can no longer conceive of science without its technical outcome" (10). That is, pure science is dying out. The search for innovation and solutions drives technology which in turn drives science and both seek immediate commercial outcome. "[T]oday it is scarcely possible to effect a separation between scientific and technical research. Indeed, our omnivorous technique ... may in the end make science sterile" (10).

Ellul maintains that the power of technique is now so overarching that it controls all aspects of life, even the actions of human beings. He questions human control of technology and the underlying assumption that, through technology itself, society can solve the world's problems, including those created by technological development. He points to the multiplication of risks and their magnitude related to modern technology and questions whether this can represent real mastery or control (1990, 149). He goes on to assert:

> I will simply emphasize the incredible contradiction ... between the supposed mastery over technique and the commonly asserted ability of technique to do anything ... Here we have the absolute belief of the modern world which implies our absolute renunciation of mastery; we delegate power to technique. Thanks to it we have achieved an unequalled power. But the greater the power is, the harder it is to master it (156).

The implicit trust that humanity affords technology is grounded, in part, in the value given to human reason as characterised by science and technology. As technology is understood as standing on scientific foundations it is seen as having an inherent rational logic. What began as the application of science and technology to subdue nature has now extended to the application of technical rationality to all spheres of life—politics, economics and ethics. This is an indication of the adjustment of human society to the logic of technology and its corresponding distress, because, as Ellul points out, the human spirit is more than the rational: "[Human beings] are not rational in their feelings and opinions and conduct, and they do not find it easy to live in a purely and exclusively rational milieu" (168). More than that, technical society, despite its rational base, is becoming increasingly irrational in its outcomes, with the proliferation of technological devices leading to an absurdity (169).

Technology has not always dominated society and culture, according to Ellul. It was not until the eighteenth century that technique began to be applied to all spheres of life in Western societies (Ellul 1965, 42). Postman (1993) identifies three stages in the increasing dominance of technology, namely tool-making, technocracy and technopoly. All three still exist somewhere on the planet, but Western society is now characterised by technopoly. The first, tool-making, is characterised by the social, religious and military cultures of the day giving general direction to the invention of tools and the uses to which they are put (23). The tools do not fundamentally challenge the prevailing world-view. The second, technocracy, is characterised by tools shaping an alternative world view that challenges the existing culture. Postman identifies the medieval period as the turning point when the invention of the mechanical clock, the printing press and the telescope changed the relationship between tools and culture (28–29). By the eighteenth century, industrialisation brought machinery and technique to the centre of everyday life, yet did

not entirely supplant the traditional world-views of the tool-making culture. Rather, two world-views—traditional and technological—co-existed in tension. Finally, technopoly came into existence when technology became the dominant world-view, redefining art, religion, politics and all other aspects of culture (Postman 1993, 48). This is what Ellul describes as the dominance of technique in contemporary Western culture.

According to Ellul, technological society has brought with it the triumph of the absurd. He points to the production of things we do not need in Western societies concurrent with the failure to meet basic needs in the Third World. A growing fascination with diversion and gadgets suffocates the ability to live in a reflective way. Information proliferates, but history, wisdom and knowledge are stunted. "What happens when we discern that in this technical milieu the possibility is the necessity and the necessity is our only possibility?" (Ellul 1990, 219).

The search for happiness has been reduced to the acquisition of gadgets, many of which we do not need. The drive to produce new devices, because it can be done, leads to overconsumption and increasing waste. Productivity and economic growth fuelled by technological innovation are regarded as idols. Advertising sells not only a particular product but the virtue of technology itself. Indeed, technology has become today's magic, expected to solve all problems and promoted as the source of all happiness (Stivers 2001, 13).

Ellul concludes that living in a technological world such as this has led to diversion, not only for entertainment, but also diversion from reflection on deeper human questions. The endless diversion that technology offers, the filling up of our time and space, has made it easy for us to ignore deeper questions of meaning and morality. Technology is presented as offering endless freedom but its noise drowns out reflection. "[W]e have a poor, foolish, mediocre idea of freedom if we call all these exploits freedom! For diversions are always against freedom inasmuch as they are against conscience and reflection" (Ellul 1990, 359). Ellul's technological system has little room for human freedom: "Are we then shut up, blocked, and chained by the inevitability of the technical system which is making us march like obedient automatons thanks to its bluff? Yes, we are radically determined. We are caught up continuously in the system if we think even the least little bit that we can master the machinery ... and plan everything" (411).

Ellul argues that irresponsibility as a distinguishing feature of human behaviour in a technological society. No one individual or organisation can, or does, accept responsibility for problems or crises that find their root cause in the nature of technology itself. "Who can foresee the landslide that causes a dam to shift and finally crack? Who can calculate

exactly the trajectory of the second, discarded engine of a rocket? … All that we attempt with our leading techniques (e.g. space, computers, lasers, and atoms) is the result of detailed operations and interwoven micro-decisions. In no operation does there seem to be one clear responsibility" (1990, 407). Ellul attributes this growth in irresponsibility to the ignorance we have of technical systems on which our lives depend and to the complexity of those systems (406).

Ignorance and its consequence, irresponsibility, may be understood as our loss of appreciation and understanding of the relatedness of the world around us. In general, it is beyond our capacities to know, understand or control the technology we use. This leads to a break in relations with the physical world around us and an abdication of responsibility for the effects of our actions, through our technology, on that world.

Ellul's sociological vision of the future is a pessimistic one. He sees technique as the dominant influence on our thought processes, on the structures of society and on reality itself. Human judgment has not kept pace with human knowledge. Instead, there is a progressive integration of the human into a technical system, as revealed by adaptation to the machine, diversion from reality and fascination with gadgets. Ellul holds political powers and churches responsible for not resisting these trends, instead integrating themselves into the technological culture for fear of being seen as reactionary (395).

The only glimpse of hope that Ellul finds is in his conviction that the technical system is, in the end, unstable. He locates this hope in our becoming aware that the impression that technique and technology can ultimately control everything is a gigantic bluff. Cracks and indications of chaos will open up and, if human beings can exercise a degree of self awareness and self-criticism, these cracks may be moments of opportunity for "installing in them a trembling freedom which is not attributed to or mediated by machines or politics, but which is truly effective, so that we may truly invent the new thing for which humanity is waiting" (412). There are echoes here of the "saving power" of which Heidegger speaks being found precisely where the "danger" of the essence of technology is to be found. There is hope if human beings understand the reality of technology and see past its bluff.

Ellul's theory is devastating in its portrayal of technology as an all-powerful and dominant force in contemporary society that robs us of our humanity. It is pessimistic in that technology is afforded enormous power over human society itself. Ellul reveals humanity's investment of technology with the robes of salvation and power. He demonstrates that this power is shrinking the capacities of human beings, rather than enhancing them. Yet

Ellul holds on to an optimism that humanity will pull back from the edge through the cracks of technology's own mistakes and absurdities (1990, 412).

Ellul believes that technology is the primary and dominant force shaping contemporary Western society. "No human activity is possible except as it is mediated and censored by the technical medium" (Ellul 1965, 418). We now live in a technological system that carries inherent dangers. Ellul maintains that for human beings to be free we need not to rid ourselves of technology, but to go beyond technology. However he acknowledges himself that he does not know how this might be done (xxxi).

Ellul's sociological critique of technology, read in isolation from his theological works, is profoundly pessimistic. According to this view, society is a technological system where all dimensions of human behaviour have become beholden to technique. Technology and its instrumental logic is in control. While human beings have the impression of being in control, it is actually technique that dominates all aspects of our lives. Because technology is such a force of domination, it suffocates other ways of being in and with the world. Its instrumental logic forces out other ways of doing and being. Other people and the natural world are reduced to a means to an end.

It is clear to see why Ellul's critique of technological society is commonly interpreted as being deeply pessimistic, yet he does speak of hope. This is elaborated in his theological works in which technological culture is identified with humanity's sinfulness, lack of freedom and separation from God. Ellul's hope is not found in technology but in what he calls the "cracks" of technology's failure (1990, 412). For Ellul, hope comes from the rejection of the deification of technology's instrumental power and the embracing of the freedom found in turning back to God. Davison suggests that Ellul is often falsely credited—or discredited—with technological determinism when, in fact, Ellul places his hope in humankind seeing what an idol we have made of our technological powers. In Davison's words, "The target of Ellul's polemic was not the demon of modern technology. His targets were the technological somnambulists, the frantically productive human agents who persist in the illusion of instrumentalism while building a deformed world in which humanity can only ever encounter itself as the agent of technology" (2001, 99).

Technology, then, is the medium through which human beings have separated themselves from and broken relations with God. Ellul develops this theme in *The Meaning of the City* (1970). He argues that biblical stories of the building of cities are stories of humankind separating themselves from God. The stories of cities are stories of technique (Sturm 1984, 574). They are stories of humankind seeking out their own security, power, satisfac-

tion and control, with no reference to God. “[T]he city is the great means of separation between human beings and God, the place human beings made to be alone” (Gorringe 2002, 144). Referring to the story of Cain, he comments:

> It is man’s high-handed piracy of creation that makes creation incapable of giving glory to God. Cain bends all creation to his will. He knows full well that by order he has received dominion over creation, and he assumes control. He forces creation to follow his destiny, his destiny of slavery and sin, and his revolt to escape from it. From this taking possession, from this revolution, the city is born (1970, 6–7).

The city as a symbol of humanity’s technological power expresses the separation of humanity from God and from nature. “[The city] has within her every disorder because she is the great means of separation between man and God, the place man made to be alone. [T]he city can calculate, but not live, any word concerning God’s order” (119).

Ellul draws a sharp distinction between God’s creation and humankind’s technological achievements as symbolised by the city:

> [T]he city is man’s greatest work. It is his great attempt to attain autonomy, to exercise will and intelligence. This is where all his efforts are concentrated, where all the powers are born. No other of man’s works, technical or philosophical, is equivalent to the city, which is a creation not of an instrument but of the whole world in which man’s instruments are conceived and put to work ... Just as Jesus Christ is God’s greatest work, so we can say, with all the consequences of such a statement, that the city is man’s greatest work (154).

The city, then, symbolises humankind’s counter-creation, carried out in defiance of God and in the mistaken belief that self-sufficiency, control and power can be founded by our own technological efforts.

According to Ellul, Jesus himself condemns the city—the technological system—but not the people. The inference is that by rejecting the idolatry involved in worshipping humankind’s technical capacity and by recognising God’s sovereignty, right relations with God and God’s creation can be restored.

> Jesus, in his very person and in his entire life, shows himself to be a stranger to the world of the city. In no way does he participate in this work of man, he who in all other aspects participated fully in man’s life. And it is precisely because he

> took on himself the fulness of human life that he refused this false remedy, this false source of help, this false greatness. And it was because he was establishing the Kingdom of God in the midst of the world that he totally rejected man's counter-creation (Ellul 1970, 124).

Ellul also asserts that the ecological crises facing humankind are a direct result of humankind's technological culture, which in turn is symptomatic of separation from God. He sums it up this way:

> [T]he devastation of the world, the ecological disaster that awaits us, is not only a result of belief in the technological system, but it follows, above all, from the fact that man no longer believes in the creator God, who is God of Jesus Christ. There has been no long delay between the proclamation and exaltation by theologians that man has finally become adult, master of his destiny, gone out from the divine tutelage, come of age, etc., and the discovery of the ecological disaster. The fact is that the second follows on the heels of the first. The man who has freed himself for himself, who no longer has a "Father", he no longer has a Lord to whom to respond and bear responsibility. The man who has come of age and is adult is above all irresponsible, and therefore he behaves towards creation in just such a manner (1984, 151).

Despite this bleak picture of the sin of the city, Ellul grounds his hope eschatologically in the New Jerusalem, the heavenly city. Hope is not to be found in humankind's technological culture but is to be found in God's redemptive actions and the return of right relations between God and humankind. As Neville puts it:

> The city as an image or symbol of human rebellion, alienation, and self-sufficiency since the time of Cain is persuasively developed, but Ellul's interpretation of the New Jerusalem is strikingly profound. While the New Jerusalem is strictly God's creation rather than the inevitable outcome of human achievement, nevertheless God's free decision to consummate history by building a *city* reveals that God adopts our achievements and invests them with meaning and value. God's love for us extends to our work and results in the conservation and transformation of even our most rebellious efforts (1994, 25).

Ellul acknowledges his debt to Karl Barth as a strong influence in his theology (1981, 93). This can be seen in his emphasis on the primacy of revelation and the lack of any reference to natural theology in his writing. Technology, formed by humankind's wilful isolation from God, is the antithesis to Christianity. Speaking of Christ as our absolute reference point, Ellul says:

> If He came down to us, then He is not included in our system. We can then place ourselves where he situates us, that is, in His transcendence. This then gives us the outside vantage point that permits the critique of the system. This also guarantees freedom, because there is no freedom that we can claim to have in relation to technology. We need a freedom that is given us from the outside ... Only the transcendent in the technological system guarantees freedom to humanity and a possible way out for society (1994, 102).

In his theological works, Ellul finds a vantage point both to judge our technological culture and to indicate where our hope lies. His critique of technology remains sharp. His faith and hope in God who will restore right relationships is equally intense.

> Ellul's theology focuses on traditional themes of Reformed Christianity: the sovereignty of God over history; the strength and solidity of sin in history; and the presence of hope for a new creation, a New Jerusalem, beyond history but inclusive of history. In each instance, however, the theme is intended for and is a judgment on the modern world (Sturm 1984, 573).

How might we describe Ellul's theology of technology? What are its elements?

First, Ellul associates technology (in his sociological works) or the city (in his theological works) with humankind's grasping after self-sufficiency, control, exploitation, and the building of walls of protection and separation. Second, he identifies humankind's technological activities, the building of the city, as a direct challenge to and a dangerous mimicking of God's creation. Third, he suggests that it is God's love for humankind that leads God to adopt the city, humankind's technological activities, so as to transform them. However the transformation of the city, the transformation of technology, requires radically transformed relationships. Fourth, he insists on a sharp distinction between the determinacy, the lack of freedom, to be found in technology, and the freedom to be found in God. "We are faced either with technology as our fate or the existence of the transcendent" (Ellul 1981, 101). He rejects his critics who accuse him of being pessimistic because, ultimately, his hope is founded in God, not technology. "I am not pessimistic because I am convinced that the history of the human race, no matter how tragic, will ultimately lead to the Kingdom of God" (104). Fifth, he identifies the vocation of the human being with identifying and living out this freedom to be found in Christ. This is to live with, but counter to, the technological systems of society. This involves being critical of technology in the light of revelation and being bearers of Christian hope and freedom in a society that is radically determined by technology (108–110).

Technology, according to Ellul's view, then, is identified with separation from God and exploitation of nature. It is identified with the loss of relatedness brought about by humankind's alienation from God through our idolatry. Redemption flows from God's grace in transforming humanity's work and technology so as to regain union with God and break down walls of separation. God judges us for our technological attitudes but does not desert us. Rather God seeks to re-establish communion with humankind despite our desire to exclude God from our technological activities (Goddard 1996, 149).

The theme of relatedness, then, is significant in Ellul's critique of technology and his own theological reply. Contemporary technological culture—or technique—is an expression of humanity's grasping after control over nature in our own right and our self-sufficiency as an alternative to God's creation. Our preoccupation with the efficiency and the power of technology is a form of idolatry of our own human capacities. In Ellul's analysis, technology is separation from God, a denial of relatedness. It is not an expression of humankind's God-given vocation. His theology has a strong emphasis on the Fall as humankind's break in relationship with God (152). However, he asserts his belief that God's grace and God's love never desert humankind. In the New Jerusalem relationship is restored and even our technological cities are thus transformed and have no use for walls of separation. He finds his hope in God's enduring grace and love, and the hope that human beings may respond by opening our eyes to the true nature of the technology in which we have vested so much power.

2.3.2 *Ernst Friedrich Schumacher, Langdon Winner et al.: Technology as Value-laden*

To what extent Ellul was a technological determinist remains a subject of debate. Certainly he, along with Heidegger, is recognised for trying to open our eyes to the way technology shapes our lives, our world-view and our culture, believing that our failure to do so leads to mortal danger. This section considers writers who draw our attention, not so much to the way technology might be out of control, but rather to ways in which technology might be shaped and directed along paths towards a good society. Within it there are two main streams of emphasis: first, that technology's power can be limited, or constrained, by the application of specific political goals, second, that appropriate technology, carefully moulded and chosen according to specific criteria, can bring social and political transformation. Both of these streans emphasise that technology is value-laden, not value-free. They contend that technology is not a neutral tool to be used for good or ill. Rather, technology has a profound influence on the nature of the society within which

it operates. Conversely—and this is where this view diverges from that of Ellul—human political and social institutions can direct technological development along certain paths according to political values. Technology and human values are closely interrelated and influence each other.

Langdon Winner's book, *Autonomous Technology* (1978), analyses Heidegger's philosophy of technology and Ellul's sociology of technology, and concludes that both give a sense of technology out-of-control with human beings powerless to influence its future. Winner questions this and seeks a political solution. He approaches the subject of technology's perceived autonomy by first considering its obverse, i.e. human mastery. He suggests that an anxiety accompanies the belief that technology has its own life, its own momentum and that this anxiety derives from a feeling of loss of control, a loss of mastery over the created world. "[R]eports of autonomous technology can be interpreted as signs of a disorder of the mind at the collapse of an ordinary point of view" (19). He goes on to identify this "ordinary point of view" as Western culture's belief that "its continued existence and advancement depend upon the ability to manipulate the circumstances of the material world" (19). That is, the fear of technology has deep roots in the belief that, through science and technology, human beings should have control over our environment and their tools. For human beings to lose this control challenges our self-understanding as conquerors of nature, a self-understanding closely interwoven with a view of scientific technology as "a means of control and manipulation" (24). To regard technology as autonomous, as beyond human control, therefore, calls into doubt humanity's dominion over nature.

Winner identifies some symptoms of this feeling of loss of control. Users of technology often have little understanding of what they are using. Technological development and application appear out of the reach of citizens to influence or control them. In Winner's words, "In summary, the loss of mastery manifests itself in a decline of our ability to know, to judge, or to control our technical means" (30).

While acknowledging that technology has indeed permeated so much of contemporary life, Winner does not himself subscribe to the belief that technology is completely out of control. Instead he embarks upon "a search for limits in an age of high technology" (1986). He affirms humankind's ability to control and direct technology according to political ends. However, he notes the difficulty in reaching a social consensus about the nature of the society we strive for. Technology assessment programs, he suggests, are not guided by deep moral principles but by limited criteria of consumption and safety.

> To argue a moral position convincingly these days requires that one speak to (and not depart from) people's love of material well-being, their fascination with efficiency, or their fear of death … [F]or the most part we continue to disregard a problem that has been brewing since the earliest days of the industrial revolution—whether our society can establish forms and limits for technological change, forms and limits that derive from a positively articulated idea of what society ought to be (1978, 51–52).

This leads Winner to evaluate new technologies by the kind of society they are destined to mould. In acknowledging that technology shapes political and social life, Winner aims to limit technological development according to political criteria such as freedom and social justice, "technological change disciplined by the political wisdom of democracy" (55). He considers other attempts to reform technology and concludes that many of them do not seek to address such basic questions but instead are self-limited by the language of technology itself—efficiency and material wellbeing. His own agenda requires technological developments to be judged and limited according to political criteria before implementation (58).

In searching for limits by which to contain technology, Winner considers ecological concerns, risk assessment and human values and finds each wanting. He argues for criteria and language that address more directly and sharply the sort of technology needed for human wellbeing in political terms. In summary, Winner acknowledges the widespread view of an autonomous technology and the anxiety it generates, agrees that technology has profoundly transformed our world and our lives and affirms that it is very difficult to influence technological change. He stresses that technology's progress has debunked notions that technology is neutral and that humankind has control over all spheres of life. Yet he asserts humankind still have the power to limit technology's progress by political means by developing institutions and procedures that judge and direct technology according to the sort of society we choose to create.

Willoughby, in his book, *Technology Choice: A Critique of the Appropriate Technology Movement* (1990), also considers the concept of autonomous technology. He suggests that this might helpfully be understood as "a mode of technology-practice in which no limits have been placed upon the scope and dominance of technicity" (324). Willoughby describes technicity as that which is "efficient, rational, instrumental, precise and goal-oriented" (40). Willoughby argues that, while technicity is a defining feature of technology, some forms of technological practice are more dominated by technicity than others (328). He does not downplay the power of technicity and the danger of its dominating our society but rather proposes that "human beings can exert control over technological systems but

only when deliberate constraints have been placed upon technicity. In other words, human autonomy vis-à-vis technology is not automatic in the technological society but requires deliberate and concerted effort" (Willoughby 1990, 328). According to this view, technology may be moulded to honour and nurture relational life rather than destroy it, but a self-conscious effort is required to counter instrumentality.

Willoughby suggests that the appropriate technology movement has the potential to direct technology along paths that avoid technicity and nurture healthy social and ecological relations. Whereas Winner embraces political categories to describe how technology's dangerous tendencies might be limited, the appropriate technology movement uses the language of human and ecological values. Defined as "technology tailored to fit the pyschosocial and biophysical context prevailing in a particular location and period", appropriate technology gives serious attention to the pattern of relationships in which it operates (15). Popularised by E.F. Schumacher's book *Small Is Beautiful* (1973), this movement seeks to bring social justice, ecological sustainability and healthy community life to society by the development of technologies appropriate to such values. Schumacher, an economist, was profoundly influenced by Ghandi and by his knowledge and experience of India and Burma (Willoughby 1990, 62–65). His people-centred economics takes into account the cultural context in which technology operates. This brings an emphasis to small-scale and decentralised technologies using renewable sources of energy. These technologies minimise harm to the environment and work well in communities where power, technical control and decision-making are decentralised.

Features of contemporary industrialised societies, according to this view, can be largely explained by the technology of these societies. The growth of cities at the expense of the countryside, environmental degradation and the concentration of power and wealth at the expense of the world's poor can all be attributed to large-scale, resource-hungry and centralised technologies. Appropriate technology that is decentralised, driven by renewable energy and understood and controlled by the community will, therefore, promote a healthier and more communal society more in tune with ecological systems. Proponents of appropriate technology have developed long lists of characteristics of a "hard technology society" versus a "soft technology society" to illustrate the transformation they seek (Dickson 1974, 103–104).

Unlike Winner, Schumacher does not believe it is necessary first to change the dominant political and economic systems of society before effecting change with appropriate technology. This does not mean that he did not try to get the support of political authorities. A practitioner as well as a theorist of appropriate technology, Schumacher became frustrated

when governments did not support his vision. However, he proceeded in the hope and expectation that appropriate technology as a people-centred movement has the capacity to change people's lives from the grassroots (Willoughby 1990, 68–69). He proposes that small-scale environmentally friendly technology could meet the needs of neighbourhoods and communities badly served by large-scale technology (Schumacher 1980). In the process, he argues, values of social justice and ecological sustainability would be furthered and political systems transformed.

The practical application of such technologies occurr most commonly and successfully in village settings in Third World countries. These are called by a variety of names, including appropriate technology, alternative technology, soft technology and intermediate technology (Barbour 1980, 296–297). The development of appropriate technologies is not so obvious in industrialised countries. Winner attributes this to the difficulty of applying its concepts in countries where the dominant culture raises enormous political and ideological barriers (1986, 63). In this regard, he disagrees with Schumacher that appropriate technology can be developed effectively despite overarching political and economic systems. He maintains that the political climate and human values of a society must first be transformed so that the technology developed in this context will incorporate and reflect these values.

The appropriate technology movement was largely a phenomenon of the 1960s and 1970s and, perhaps for the reasons of political naivety that Winner suggests, has not been an enduring force, at least in industrialised countries. It "has failed to be adopted into the mainstream as the dominant form of technology-practice" (Willoughby 1990, 332). However, its legacies are apparent in the greater awareness and availability of alternative energy sources, e.g. solar power, and the greater awareness of everyday environmental issues such as the recycling of waste. Appropriate technology has not transformed industrialised societies but its influence has, to some extent, been incorporated into the mainstream by raising our awareness of wasteful practices. This has made it harder for people to argue for obviously inappropriate technology (332–333).

Though the appropriate technology movement itself has faded, its basic premise—that the technology is value-laden and not neutral—has been taken and developed by other writers. Winner himself, though critical of the movement's political and economic naivety, has himself adopted much of its language when proposing his own solutions. He speaks of new technological forms, direct everyday participation of those concerned with these new technologies and technology intelligible to non-experts as attributes of appropriate technology (1978, 326–327).

Ian Barbour proposes understanding technology as "an ambiguous instrument of power whose consequences depend on its social context" (1993, 15). He allows for some technologies being neutral but agrees that the majority have their purposes inherent in their designs. He too seeks the redirection of technology according to specific environmental and human values and has written in detail elaborating those values and how they might be nurtured through the development of specific technologies, including agriculture, energy and computers. Rejecting the view of technology as autonomous and out of control, he has faith in democratic institutions and legislative bodies to redirect technology as long as basic values are honoured in the process (240). He proposes an understanding of the relationship between science, technology and society that is contextual with each of the three in complex interaction. Technology influences society and its political and economic shape, but so too can society's procedures and institutions influence and redirect technology. The same interaction applies for science and scoiety (20). In this way, Barbour describes the way in which the interaction between technology and human values flows both ways.

Technology and technological culture may be also evaluated according to specifically feminist values. Judy Wajcman identifies two dominant strands in feminist thought in regard to technology, "whether the problem lies in men's domination of technology, or whether the technology is in some sense inherently patriarchal" (1991, 13). Both identify technology with masculinity. According to the first strand of thought, this identification is manifested by the relative absence of women in fields of engineering and computer science and by technology itself being associated with the activities of men rather than women. The inventiveness of women, particularly in domestic and agricultural realms, is often unacknowledged and not recognised as contributing to technological development (16–17). Noble gives historical examples of the "powerful cultural affinity between technology and masculinity in Western society" (1997, 209ff). He also argues that this affinity has been strengthened by the identification of technology with religious attitudes and aspirations which also exclude women (212ff). This is consistent with the second strand of feminist critique which maintains that "[t]echnology, like science, is seen as deeply implicated in the masculine project of the domination and control of women and nature" (Wajcman 1991, 17). This critique argues that the essential values of women and men diverge, with male values being associated with aggression and militarism and female values associated with nurturing and pacifism. Both strands have the effect of alienating women from technology, whether it be for historical or cultural reasons. Wajcman proposes another analysis. She suggests that "women's exclusion from, and rejection of, technology is made more explicable by an analysis of technology as a culture that expresses and consolidates relations among men" (22). If women were more involved in technological development,

technology itself may be shaped and influenced quite differently. "Preferences for different technologies are shaped by a set of social arrangements that reflect men's power in the wider society" (Wajcman 1991, 24). According to this view, technological culture is influenced and distorted by an underlying imbalance in power relations between men and women. Generally, however, these various feminist critiques of technology all exemplify the nexus between technological development and human values.

Though the writers reviewed in this section disagree with each other to some extent, a basic underlying theme is apparent in their thinking, i.e. that there is a close interaction between technological development, political systems and human values. Technology is not a neutral tool. Rather it is value-laden, carrying within it the capacity to change the very nature of the society, culture and world in which it operates.

The value-laden view of technology leads us to choose, or develop, specific technologies that honour and protect relatedness. The protection of ecological systems and human societies is a primary goal of this view of technology. It highlights the need to give primacy to relational life and suggests our instrumental attitudes do not allow us to do this. By choosing technological forms which nurture, rather than destroy, healthy ecological and human relationships, we can disallow the rule of instrumentalism.

2.3.3 Albert Borgmann: The Limits of Technology

The views describing technology as autonomous and technology as value-laden have in common the belief that technology has the inherent capacity to shape, even dominate, the world. Technology is regarded as limitless in its capacity to influence the world for better or for worse. Ellul proposes that it is almost impossible to constrain this power of technology, Winner seeks to find and impose limits by political means and Schumacher and Barbour seek to redirect the power so as to reflect basic values.

Albert Borgmann, in contrast, believes that contemporary technology has its own inherent limitations and therefore can never fully satisfy the human spirit. Of the writers considered here, Borgmann is the one most obviously influenced by Heidegger. Though critical of some of Heidegger's philosophy, Borgmann nevertheless draws deeply on his fundamental insight that the essence of technology is dangerously limited in its blinkered approach to reality, reducing life to the utilisation of commodities. Borgmann goes on to develop Heidegger's elevation of the importance of works of art and of craftsmanship, of

those "things" that focus the interplay of the creative human spirit with the nature of reality (Borgmann 1984b, 196ff).

Like Ellul, Borgmann writes within two disciplines, in his case, philosophy and theology. While Ellul writes from a Protestant tradition, Borgmann has a Roman Catholic background (Borgmann 1992, 145). He comments:

> [I]f with the Protestant tradition one thinks of Christ and his message as wholly other than the world and its ways, as irrupting into this world and transforming us from the ground up, then it suffices to expose technology merely as other than and opposed to Christianity. To explore technology with a view to new challenges and opportunities for Christianity would be a misguided and even perilous endeavour. Traces of this Protestant approach can be found in the contributions of ... Jacques Ellul (1984a, 306).

Borgmann addresses the interplay of religious and liturgical life with technological culture and illustrates how one affects the other. It is in this respect that he brings a more sacramental approach to his thinking than does Ellul.

Borgmann's own theory of technology follows a "device paradigm". He suggests that the way we now relate to the world is typified by the use of more and more technological devices, which distance or disengage us from the reality of the physical world. These devices, while making commodities available to the user, are characterised by their abstractness and remoteness from the machinery which operates them. This machinery is becoming smaller and more hidden from the user. Such devices are replacing things and practices that traditionally were used, understood and enjoyed in a more engaged fashion. Borgmann uses everyday examples to illustrate his theory, for instance the device of a stereo set compared to the practice of playing musical instruments and the device of central heating compared to a fireplace. Stereos and central heating are now commonly used to provide the commodities of music and heating respectively. They have effectively replaced what Borgmann calls focal things and practices, e.g. the practice of a family playing musical instruments or a household cooperating in all the interrelated tasks in keeping a fire going in a fireplace. What was once an important social tradition has been reduced to an abstract provision of a commodity with little engagement or understanding on the part of the users in how the commodity is produced. "A thing requires practice while a device invites consumption ... Things constitute commanding reality, devices procure disposable reality" (Borgmann 1995, 90).

The terms, “device”, “commodity”, “focal thing” and “focal practice” are key concepts in Borgmann’s paradigm. A technological device is an object that exhibits a sharp division between the easy availability of a commodity, e.g. heat or food, and the complexity and inaccessibility of machinery used to provide that commodity, e.g. central heating or a microwave oven. A focal thing or focal practice is something that is rooted in a particular context and network of physical and social relations and which centres and engages us,e. g. a fireplace or a wood-fired stove.

Borgmann’s thesis is that in today’s world, at least in affluent industrialised countries, focal things and practices are being replaced by technological devices. The effect is not simply one of the progressive sophistication of machinery but a displacement of practices that provide centres and meanings to people’s lives. Our expectations shift from interacting with “things and practices” to accessing commodities at the push of a button. While central heating is solely a device to provide heating, a fireplace is literally a focus, a hearth that gives a household a place to care for and to share in community and so provides more than the commodity of warmth.

“[D]evices split means and ends into *mere means* and *mere ends*” (Strong and Higgs 2000, 29). Technology ignores or disregards the relatedness of reality. In contrast, focal things and practices that call upon people’s skills, memory, tradition and interaction with the physical world and other people engage people in this relatedness of all things. Borgmann uses the word “focal” figuratively: “[A] focus gathers the relations of its context and radiates into its surroundings and informs them” (1984b, 197). This echoes Heidegger’s argument that the meaning and power of a “thing” is found in its ability to focus the “gathering” of relations (Higgs, Light, and Strong 2000, 6). A bridge, a temple or a work of art gathers in its physical being the relatedness of God, the natural world and humankind. Whereas devices are the expression of an instrumentalist world-view, focal things and practices are “matters of transcendent importance” (Hickman 2000, 89). “[W]hereas focal things unify and gather, devices divide and scatter” (Strong and Higgs 2000, 32). Borgmann takes seriously the influence of the material and of physical objects on reality. He encourages us “to attend to the significance of our physical world and tangible things” and the way in which technological devices displace existing practices and traditions (Strong 2000, 332).

Borgmann identifies technology as “the crucial force that more and more detaches us from the persons, things, and practices that used to engage and grace us in their own right” (1984b, 76). He suggests that the promise of technology began as liberation from poverty and misery but now it is identified with consumerism and the easy provision of commodities. This trend erodes humanity’s traditional cultures and relationship to nature. There is

a general unease with modern technology because people feel as if we are torn away from the context of social and physical relations that have given meaning to our world. Focal things and practices are being replaced by disembodied commodities provided by devices whose machinery we neither understand nor control. While these commodities may give us a freedom from drudgery, they can also rob us of the relationships we value. Borgmann calls this the "irony of technology when liberation by way of disburdenment yields to disengagement, enrichment by way of diversion yields to distraction, and conquest makes way first to domination and then to loneliness" (1984b, 76). Elaborating on this point, Davison comments:

> [T]he pure freedom afforded by pure ends, the freedom that devices afford is a form of freedom that simultaneously undermines what makes the ideal of freedom valuable and commanding in human life ... Devices undermine our relationships to those things, places, and people we want to be free to be able to cherish. The social and ecological reality around us is thus de-formed (in contrast to being in-formed) by the medium of devices within which our practices are suspended into an aggregation of sensory instrumentalities (2001, 111).

Borgmann identifies the loss, or deformation, of such relationships as a form of poverty. In technologically advanced countries our belief in our self-sufficient security cuts us off from the full range of relationships with others, including God. Borgmann calls this "advanced poverty". Meanwhile, it is assumed that only technology can remove the material poverty, or what Borgmann calls "brute poverty" of those in oppressed communities. As our advanced poverty deepens, it stifles our ability to feel compassion. It "exhibits a profound insensitivity to the misery beyond its boundaries" (Borgmann 2003, 103). Our expectation is that technology will solve all the world's problems, including poverty. But our adoration of that same technology brings another form of poverty, that of the stunting of caring and sharing relationships. "It is the accomplishment of unquestionable comfort and security that has all but paralyzed our capacity to help and to be helped and so to have part in the fullness of life" (106). Borgmann concludes that while brute poverty needs to be addressed urgently, practically and compassionately, it is advanced poverty that needs our deep theological reflection and subsequent action.

The technological way of life can be regarded as "disposable" and focal things and practices as "commanding" (Borgmann 1995, 87). Both co-exist in our world, but the technological is now the dominant template of our lives. The technological way of life induces a life of distraction that is isolated from the environment and from other people. A lifestyle guided by focal things and practices calls forth a life of engagement that is oriented within

the physical and social world (Borgmann 1995, 92). The former denies networks of relationship. The latter honours them.

Borgmann illustrates his paradigm by considering the implications of technology for social control, democracy, political engagement and the nature of work and leisure. He shows how the paradigm of technology is deeply embedded in all these spheres and tends to be invisible to the point where "technology is the rule today in constituting the inconspicuous pattern by which we normally orient ourselves. But whenever the turn from a thing to a commodity or from engagement to diversion is taken, the paradigm by contrast comes into view at least partially, and an occasion of decision opens up" (1984b, 105). At such moments, we "catch sight" of technology.

This leads Borgmann to consider the possibilities for the reform of technology. He first critically examines other attempts at reform, pointing out that many of these attempts reform from within the paradigm of technology and do not reform the paradigm itself. They accept the promise that technology offers and seek to direct technology in the most beneficial direction. As a result they are rather piecemeal and ineffective. Borgmann finds an exception with the appropriate technology movement which shares his own concern that we "speak in a principled and forceful way about the good life when we allow ourselves to be guided by focal things, matters of ultimate concern that are other and greater than ourselves" (169).

Borgmann's reform of technology suggests that "if we are to challenge the rule of technology, we can do so only through engagement ... To found a practice is to guard a focal concern" (207). Any reform of technology must make room for focal things and practices, which, rather than simply increasing our economic standard of living and possession of devices, enhance the good life that brings a wealth of engagement with the world and other people.

In the midst of a technological world, focal things and practices—whether they be walking in the wilderness, art, music, a family meal or gathering around a hearth—acquire a heightened importance and meaning and demand a commitment to nurture and practise them if they are to survive. Technology and focal practices throw each other into greater relief:

> Generally, the local and bodily intensity of focal engagements preserves our sensitivity for the wide-ranging and effortless way in which technology provides a context of security, comfort and enlightenment. It also sharpens our sensitivities;

> engagement provides resonance for those commodities that represent and support excellence, and, finding no echo in the trivial and frivolous, it ignores banal commodities and helps to reduce them (Borgmann 1984b, 248).

What implications follow for our lives? Borgmann argues that technology and technological practices should not be rejected but rather relegated to the margins of society. He suggests that focal things and practices should be accorded greater importance and prominence in individual and social choices. Focal things and practices provide a counterpoint to technology, throwing into relief both the valuable and the trivial in technology. He calls for the restriction of technology to a supporting role so that, as the influence of focal practices grows, the dominance of the instrumental technological world-view shrinks. "Consumption of commodities and engagement in focal practices are found in one and the same life. Nevertheless, they cannot substitute for one another, and if one expands, the other must shrink" (Borgmann 1996, 40).

Borgmann argues, then, for engaging with the world in ways other than the technological.

> We are all implicated in this [technological] way of life, and our implication in the device paradigm is a difficult and complex relation. Contrary to what technological determinists would have us believe, we are not simply under the sway of technology. And, *pace* the instrumentalists, we are not normally elevated above technology as wakeful and rational choosers (38).

He suggests that, by recognising and understanding technology as the "ever more definite template of reality", we might self-consciously embrace and nurture other ways of taking up with the world and with God (1984a, 319). In so doing, he is not advocating a rejection of all that is technological but rather a rejection of technology's dominance over our lives. He calls this "the realm of the holy" or "the world of simple things and practices" (320).

> If the time has now come to accept more fully what all along has been ours, it is still true that for a long time to come technology will constitute the common rule of life. *The Christian reaction to that rule should not be rejection but restraint.* Technology ought to be revoked as the dominant way of taking up with the world and relegated to securing the margins and underpinnings of our lives. Within that environment, we must make a clearing for the celebration of the Word of God. But since technology as a way of life is so pervasive, so well entrenched and so concealed in its quotidianity, Christians must meet the rule of technology with a deliberate and regular counter-practice (320).

As focal practices take the centre of life's concerns, obsessions with the instrumental and controlling aspects of technology fade. Even technological practice can itself be enhanced by the individual and society's greater focus and orientation on the dignity and relatedness of all things. As our sensitivity to, and awareness of, our relationships with other people and the world around us is sharpened by our engagement with focal things and focal practices, so might our technological choices be shaped to care for and respect these relationships.

> Technology so reformed is no longer the characteristic and dominant way in which we take up with reality; rather it is a way of proceeding that we follow at certain times and up to a point, one that is left behind when we reach the threshold of our focal and final concerns. The concerns that move us to undertake a reform of the paradigm lead to reform within the paradigm as well. Since a focal practice discloses the significance of things and the dignity of humans, it engenders a concern for the safety and well-being of things and persons (Borgmann 1984a, 220).

In this way, Borgmann does not explicitly reject technology but argues for what he calls "metatechnological things and practices". These are neither pretechnological or antitechnological. They do not return us to primitive ways of life or fight against technology.

> Rather they unfold their significance in an affirmative and intelligent acceptance of technology ... [T]hey provide an enduring counterposition to technology. They provide a contrast against which the experience of specific technological liberty and prosperity remains alive and appreciated. Not only do focal concerns attain their proper splendor in the context of technology; the context of technology too is restored to the dignity of its original promise through the focal concerns at its center (247–248).

Artistic, sporting, culinary, craft and recreational practices are all examples of focal practices. Walking in the wilderness, playing the violin, preparing and sharing a family meal, reading fine literature—all these are examples of practices counter to the technological activities of easy consumption of recorded music, television and fast food (Borgmann 1996, 39). However, it is in religious faith and practice that Borgmann finds the most powerful examples of focal practices, for it is in them that an overt recognition of our relatedness with, and dependence on, God is apparent. "Christians ... owe what fidelity to persons and festive things they possess to a strong reading of cosmic contingency—the history of salvation. Whatever definition they attain as persons through their engagement with reality they see as precarious and in need of final resolution" (Borgmann 1999, 233). "[I]t is but a

short step from the culture of the word to the Word of God and from the culture of the table to the Breaking of the Bread. The history of salvation that is set out in scripture and centered in the Eucharist certainly provides for the coherence that the diaspora of focal things and communal celebrations is lacking" (Borgmann 1996, 40).

The culture of the word and the table are elaborated by Borgmann as specific examples of sacramental practices that gather and focus God's relationship with the world. The celebration of the Eucharist and the reading of and listening to the Bible are ancient disciplines through which people engage with transcendent and immanent reality. These religious acts are built on cultural foundations of family meals and listening to stories or reading literature. However, these everyday disciplines are being lost in technological cultures built on the consumption of convenience foods and entertainment. The commodification of everyday living can thus also erode the depth of meaning of religious practices which then lose their power to mirror the depth of meaning of the relatedness of everyday life (40).

The orientation given to life by an awareness of God's grace and sacrament runs counter to a technological world-view, according to Borgmann. With the deification of technology we look to devices to solve all our problems and fulfil all our needs. The sense of the sacred has been squeezed out by a dominant technological world-view. "Reality today is ruled by the device paradigm and therefore inhospitable to the holy" (41). Borgmann argues that communal celebrations are a union of discipline and grace. However this union has been shattered by technology whereby discipline has degenerated into the labour of machinery and grace into the gratification of consumption (42). Control and consumption have become the defining characteristics rather than the gift of community.

Though the sacraments may have lost, to a great extent, their centring influence in society, "we must be concerned to strengthen reverence and piety wherever we find it, the natural piety of environmentalists, the aesthetic reverence of the arts community, the sense of wonder in the sciences" (41). In this way, Borgmann is suggesting that we "move inward from the culture at large towards the center of religion" (42). As focal practices grow, so too will an appreciation of grace and sacrament, the non-instrumental, the non-technological. However, he also encourages a move "outward from the focal point of the Breaking of the Bread to its cultural context". If the practice of the Eucharist is not mirrored by communal celebrations in the daily sphere of life, it loses its meaning. What society yearns for is "a promise of daily freedom and well-being that breaks with the device paradigm and holds out a sacramental life invigorated by a continuity of sacraments and sacramentals, of worship, focal things and practices and of communal celebrations" (43). Salvation

and a fullness of life are not to be found in technology but in regaining the sense of the sacred through "the recovering of one's capacities for the fullness of nature, of art and for the pretechnological things and practices of daily life that lie half-buried under the surfeit of consumption" (Borgmann 1984a, 314).

Borgmann carries a strong sense of the contingency and mystery of life in his philosophical and theological writings. He concludes one of his articles this way:

> Science makes reality ever more transparent and technology makes it more and more controllable. But at the end of our inquiries and manipulations there is always something that reflects rather than yields to our searchlight and presents itself as given to us rather than constructed by us. It is intelligible not because we have seen through it or designed it but because it speaks to us from within the continuities of history and nature. Thus the task of cosmology is to understand the interconnection of lawfulness and contingency, of human construction and objective givenness. There is then the possibility that at the far end of scientific transparency and technological control an uncontrollable reality newly presents itself and will suggest a resolution of contemporary ambiguities.
>
> In particular we may come to answer the question of the status of focal things. At times they look like driftwood from a once-flourishing grove, now uprooted, worn and bleached, drifting along on the supporting flood of technology. Within a new cosmology, however, we may learn to recognize focal things as islands, once the high country of an ancient continent and still anchored and connected with one another beneath the surface of technology.
>
> If these places are firm and inhabitable, they can provide those points of orientation and restful celebration that lend life dignity and pleasure. Such points and periods of rest are compatible, however, with a higher kind of restlessness, the one Augustine had in mind when ... he said, "Restless is our heart till it may rest in thee." (2000, 369).

Borgmann's view is not in the end anti-technological. He does not suggest returning to pretechnological days before the convenience and ease of technological devices. He acknowledges and affirms the value of technology in providing for the physical and basic needs of life—medicine, transportation, food and shelter. But this value is not idolised as the one and only way of being in the world, but is put into proper context by a recovery of the realm of the holy. The natural limitations of technology are realised. Borgmann argues that in a world of technology, focal things and practices are endangered and need to be protected and/or developed so that they might counterbalance technology. The reform

of technology he suggests "would prune back the excesses of technology and restrict it to a supporting role ... The destiny of focal things ... is the fulcrum of change" (1984b, 247–248).

Borgmann laments the dominance of technology as a way of being in the world and seeks to relegate it to its proper role of "securing the margins and underpinnings of our lives" (320). Building on the ideas of Heidegger and in common with Ellul, Borgmann argues that it is imperative that humankind come to a clear and critical understanding of the nature of the technological culture around us, a culture that has become so familiar and close that it is rarely questioned (Strong and Higgs 2000, 25). However, whereas Ellul reached the conclusion that technology's power is so all-consuming that nothing positive may be gained from it, Borgmann argues that by understanding and experiencing technology we are able to glimpse other ways of living in and with the world while restricting technology to its useful, but limited, role. We no longer take technology for granted as the only way of being. "[A] radical theology of technology would be one which, through the experience of technology, could call into question what now counts as unproblematic ... In so doing it would help us to listen to the word of Christ in a new way" (1984a, 307). This echoes Heidegger's claim that "the essence of technology must harbor in itself the growth of the saving power" (Heidegger 1993d, 334). As Hickman puts it, "The vacuity of technology serves as an opening or clearing in which focal things can once more be engaged with clarity and purpose" (2000, 92). Malet explains it this way, "We have to acknowledge the danger in science and technique, but this is only the negative aspect of a positive reality and the possible obverse of a liberating call in which man is held" (1984, 97). By coming to a clear awareness and understanding of technology, we may see more clearly its power and its limitations. The message of the Gospel is thus thrown into relief and its power to offer true fullness of life more sharply appreciated.

The view of technology that Borgmann represents encourages us to protect focal things and practices that nurture relational life, and to understand that technological devices distance or disengage us from relational life. Borgmann's critique of technology is, therefore, firmly grounded in relationality and relationships (Higgs, Light, and Strong 2000, 12). Focal things and practices gather the network of relationships in everyday reality while technology distances us through its devices,. The implications for technological practice is twofold: first, to be aware of the ways in which physical devices affect our relationships with each other, the world around us and with God and second, to practise disciplines and nurture things that strengthen those relationships. In so doing, the apparent dominance of technological ways of being will lose their defining hold.

2.4 Technological Distortions of Relational Life

The critics of technology considered in the previous section were chosen on the basis that each of them takes seriously the interplay between contemporary technology and today's dominant culture. Their analyses and views differ to some degree. However there is a common theme in the work of these writers. I will call this theme the technological distortions of relational life. Technological culture is characterised by its propensity to be blind to, or careless of, patterns of ecological and social relationship that are crucial to healthy and just ways of living. This blindness or carelessness leads to the distortion of those relationships and subsequent alienation from God, the source of our being.

These technological distortions of relational life have various identifying characteristics. They fall into two basic categories. The first is humankind's instrumentalist attitude to the world. The second is humankind's idolatrous reverence for our technological abilities. Each of these may be understood as a symptom of our denying, or seeking to loosen, the bonds of relation with each other, God and the world around us.

2.4.1 The Culture of Instrumentalism

The writers surveyed above are all critical of an instrumentalist view of technology. That is, they challenge the view that technology is a collection of value-neutral tools to be used for good or ill. Some go further, maintaining that this instrumentalist view has become a common and pervasive ideology in contemporary society, an ideology that distorts and damages healthy interrelationships. Hence, while rejecting an instrumentalist understanding of technology, these writers identify instrumentalism itself as a crucial and dangerous world-view in contemporary technological society. They are critical of a world-view that involves the objectification and utilisation of the natural world and other people in a way that can lead to a disregard of the interests and inherent value of others. There are two distinct but interconnected ways, then, in which instrumentalism pervades our technological culture. First, we view technology itself instrumentally and are not very aware of the way in which technology can define our culture. Second, our technological world-view causes us to perceive the world around us and even other people as objects to be used and manipulated. Instrumentalism is closely associated with scientific rationalism, which seeks to objectify, quantify and order reality. Technology, commonly understood as the practical extension of science, is thereby associated with all that is objective, scientific and efficient.

Gunton sums up instrumentalism this way: "We use the other as an instrument, as the mere means for realising our will, and not in some way integral to our being. It has its heart in the technocratic attitude: the view that the world is there to do with exactly as we choose" (1993, 14).

Heidegger, as we have seen, is influential in identifying the danger of our instrumentalist attitudes. He maintains that the essence of modern technology is found in the attitude of regarding the natural world as a "standing-reserve", i.e. as a resource to be used and exploited in its own right (1993d, 322). He further suggests that this attitude is bolstered by modern technology's close association with science and a corresponding ambition to find and impose order on the world. He calls this limited way of seeing and relating to the world "enframing" (324–325) and identifies two dangers for humankind that flow from it. First, that human beings come to be regarded as resources to be used and second, that, through our ordering and manipulating activities, human beings adopt an arrogant attitude in relationship to the rest of the world (332). This, he argues, runs counter to the relationship that human beings have with the world through art and poetry which reveal the mystery of creation in a poetic, not an instrumental, way (339).

Instrumentalism is an integral part of Ellul's all-encompassing technological system. He maintains that technology "is inevitably *simplifying, reductive, operational, instrumental, and rearranging*. It reduces all that was natural to the fragment of a manageable object. And anything that cannot be thus managed, manipulated, utilized, is rejected as worthless" (1980, 45–46). Technology is the means to solve problems. All problems are understood in terms of technology, and to be solved in terms of technology (48). Ellul argues that technology is now our environment. Humanity is becoming more and more distant and disengaged from the natural world and accustomed to an artificial environment of machines and gadgets. Experience of the world is increasingly mediated by technology. While life is still fundamentally dependent on the ecosystems of the natural world, humanity's knowledge and experience of that world is increasingly screened and mediated by the technological environment (34ff). Ellul argues that the simplifying, reductive nature of technology runs counter to the complexity of natural ecosystems, resulting in a splintering of humanity's knowledge of, and engagement with, reality (45). The technological system seeks to simplify, manage and ultimately supersede natural ecosystems but this is, in the end, impossible. The result is a distancing and disengagement from natural systems and the reducing of all problems to technological ones. "This technological environment forces us to consider everything a technological problem and, at the same time, to lock ourselves up, enclose ourselves in, an environment that becomes a system" (48).

Winner describes how human culture and human behaviour are characterised by such instrumental norms as speed, efficiency and productivity, which are sought and applied to all aspects of life. (1978, 229ff). The result is the formation of a "technological ego", which elevates the importance of work, rationality and analysis above that of play and feeling (232). Human needs and priorities become distorted or truncated in a process of "reverse adaptation" to instrumentalist values (227). That is, technology itself moulds people's desires and actions according to its own technical ideology.

> [P]eople come to accept the norms and standards of technical processes as central to their lives as a whole. A subtle but comprehensive alteration takes place in the form and substance of their thinking and motivation. Efficiency, speed, precise measurement, rationality, productivity, and technical improvement become ends in themselves applied obsessively to areas of life in which they would previously have been rejected as inappropriate (229).

Hence those ends such as freedom and well-being to which Winner himself argues technology should be directed become buried by instrumentalist values such as speed and efficiency. Also human needs become identified in a limited way with particular technologies. For example the need for communication becomes identified with the telephone and the need for food with supermarkets (234).

Schumacher argues that technology applied as a value-neutral tool often fail to take into account the effect on ecological and social systems. He argues for an approach that involves choosing forms of technology that protect and nurture these relationships. The choice of technology in this way is thoroughly contextual, going beyond criteria of efficiency or profit, and taking as its starting point the health of a particular community and its environment (Willoughby 1990, 7).

Borgmann's device paradigm demonstrates how technology transforms the pattern of our daily lives from holistic engagement in a variety of relationships to the consumption of commodities. Meals, communication, music and entertainment are progressively losing their grounding in a social context and taking on the form of a commodity to be consumed in an instrumental fashion. In this way, instrumentalism dominates our way of being in the world. Through his device paradigm, Borgmann describes how the commodification of daily life is separating people from engagement with the natural world and with each other. The machinery of technology has become smaller, more hidden and obscure, not only out of sight but also out of mind. The easy availability of commodities of food, shelter, warmth, communication and transport disburdens us of physical labour, cooperation with others and involvement with natural processes.

The danger of a culture of instrumentalism is a clearly defined and common thread in the critiques of technology considered. The instrumentalist view of technology, coupled with instrumentalism itself, is a powerful influence on human culture. Culture is being moulded by its technology and its own preoccupation with the dictates of technique, a preoccupation that masks deeper human values and needs. Barns calls this the "cultural project of deep instrumentalism" (2001, 23) and comments:

> Growing up in a technological world, we know instinctively how to use new technologies, not just at a technical or functional level, but culturally as well. We are already aligned to the possibilities of new communication devices such as mobile phones, network computers and so on, and become active agents in the further expansion of "technique" (24–25).

Instrumentalism, then, is one expression of our technological distortion of relational life. The natural world is objectified, regarded as a natural resource for the use of human beings. The intrinsic value of other living things is ignored as is the importance of nurturing healthy ecological relationships with and between them. This attitude is extended to human beings whose well-being is subjugated to the machine or the dictates of efficiency. Instead of being regarded as loved and inherently valuable creatures of God, people can be reduced to disposable resources.

2.4.2 Technology as Idolatry

A second theme emerging from at least some of the critics of technology reviewed here is that of humankind's idolatrous reverence for our technological capabilities. We have vested so much power and expectation in our technology that we expect it to solve all our problems and relieve all our burdens. Technology can be understood as an idol, in the sense that it promises control over the world (Crouch 2001, 72).

The development of technology has been associated with improved shelter, food, health care and other basic human needs. Technology is thereby associated with the relief of suffering and an improved quality of life. Indeed, modern technology has brought a great deal of comfort and ease to daily life. Critics of contemporary technology, however, argue that this association of technology with relief from suffering, while valid and important, has now reached the point where there is a cultural expectation that all problems have a technological solution. Further, there is an expectation that, through technology, humankind can escape from suffering entirely. Technology is seen as a saviour, providing

salvation from the world. The Christian message of salvation becomes increasingly irrelevant to a culture where technology solves all problems (Borgmann 1984a, 311). Through technology, humankind sees no need of God. Some writers describe this phenomenon as technology taking on the garb of magic (e.g.Stivers 2001). Others describe it as the religion of technology (Noble 1997). Here, I will describe it as a form of idolatry.

The influence of instrumentalism in technological culture, as discussed in the previous section, implies an underlying faith in all that is rational, objective and scientific. A natural corollary would be the decline in influence of all that is seen as irrational, subjective and religious. However, Heidegger proposes that our very obsession with the rationality of technology is itself irrational. "Perhaps there is a thinking that is more sober-minded than the incessant frenzy of rationalization and intoxicating quality of cybernetics. One might aver that it is precisely this intoxication that is extremely irrational" (1993b, 449). Kateb draws on this thought of Heidegger to show that, while technology is commonly associated with the practical, the rational and the dispassionate, technology stems from deep-seated passions and drives that may even be understood as extremist. "Not only are the feats of technological prowess, in their profusion, a cause for wonder, the passions and so on underlying them are the amazing heart of the story and must be attended to, if the feats themselves are to be properly appreciated and properly marveled at" (Kateb 1997, 1229). He points out the irony that while technology is associated with all that is rational, that which drives technology is deeply irrational. "[T]he passions and drives or motives that push rationalism everywhere and to an apparently limitless extent are themselves not rational, but irrational" (1229). This irrationality is in itself an expression of our adoration of all that is technological.

Borgmann comments that without the comfort and ease people now expect and demand of technology, the common response is impatience and anger. "To suffer misery is no longer to be reminded of one's fundamental incompleteness and incapacity, but to be scandalized at the senseless remnant of a time long gone." (1984a, 311). He notes that salvation and transcendence in the Christian tradition have a much deeper meaning than the attainment of comfort and ease. Salvation speaks of a wholeness of life not provided simply by technology (314). Transcendence speaks of union with God, not escape from our mortality.

Of the writers reviewed above, Ellul is the one who argues most directly that technological culture is an expression of humankind's idolatrous attitudes. By vesting so much power in our technology, and by expecting our technology to solve all our problems, we effectively raise it up as our saviour. Ellul suggests that by claiming all power and control

through technology we thereby deny our relationship with and our ultimate dependency upon God.

Heidegger and Borgmann argue that our world-view has become limited to the technological, as if we are wearing blinkers that block our other ways of seeing and relating with God, other people and the world around us. This too might be understood as a form of idolatry as the technological world-view enframes our perspective and so exaggerates its own power and value.

While Ellul identifies technology as an expression of humankind's alienation and rejection of relationship with God, and Heidegger and Borgmann identify humankind's dangerous preoccupation with the technological, David Noble (1997), a historian of technology, charts the way in which technology has become a religion in itself.

Noble associates the development of technology with humankind's (and more particularly, mankind's) aspirations to achieve transcendence from worldly suffering and to regain the divine likeness lost in the Fall. Technological development has also been closely associated with eschatological anticipation. He suggests that our contemporary fascination with technology, to the point of idolatry, can be traced to these historical associations.

The use of the word "transcendence" in this context can be problematic. As Gaillardetz points out, "a defining feature of humanity is its capacity for transcendence, its ability to acknowledge both finitude and the presence of limits even as it yearns to go beyond these limits". However, whereas our religion helps us to "project human existence" beyond these limits "what modern technology seems to offer is less a *transcendence* of limits than a *circumvention* of limits. Human transcendence involves the grappling with our finitude precisely as a way of creatively transcending it. The circumvention of limits requires that one sustain the illusion that finitude can be avoided altogether" (2000, 69). Graham describes this circumvention of limits as "ontological hygiene, an assertion that human destiny lies in the fantasy of 'transcendence' ... in the pursuit of an omnipotent, incorporeal, immortal, invulnerable route of becoming" (2002, 231).

In writing about technologies of transcendence, Noble (1997) uses the term "transcendence" to refer to both the circumvention of limits and human beings' search to regain divine likeness. He identifies the Middle Ages as the period when the church began to identify the useful arts, the precursor of technology, as a means to regain lost perfection. Monastic orders such as the Benedictines included manual labour and practical arts as integral components of their spiritual life. Noble suggests that this embrace of technology

as spiritual, rather than mundane, accompanied the introduction of the heavy plough and consequent greater domination over nature (1997, 12). The twelfth century also brought to the monastic community a new millenarian mentality that located the process of salvation in human history and harnessed it even more tightly to human technological achievement. "[T]he pursuit of renewed perfection ... gained coherence, confidence, a sense of mission, and momentum ... Technology now became at the same time eschatology" (22).

Noble follows this thread of the religious moorings of technology through the beliefs and attitudes of scientists such as Francis Bacon, explorers such as Christopher Columbus and the Freemasons (a pseudo-religious association that arose from the old craft guilds), to the point where this attitude became buried in the secular projects of socialism and was taken up by engineers and technicians. "The incarnation of a thousand years of elite expectation, the engineers represented the renewal and elevation of the arts and personified the promise of technological transcendence" (82).

Arguing from this history, Noble maintains that this association of the development of technology with humanity's religious aspirations of salvation and transcendence has been a strong and persistent thread in the Western world. He identifies atomic weapons, space exploration, artificial intelligence and genetic engineering as twentieth-century "technologies of transcendence". Each of these symbolises and manifests humanity's fascination with domination over nature and the road to perfection and transcendence. He points out that "these technologies have not yet met basic human needs because, at bottom, they have never really been about meeting them. They have aimed rather at the loftier goal of transcending such mortal concerns altogether" (206). He goes further to suggest that obsessions with the religion of technology threaten our very survival. Also, the promise of perfection has never been for all, but has always been for the chosen few: first monks, then missionaries, then scientists and engineers. He elaborates this theme to illustrate how technology and masculinity have been closely aligned, even today generally excluding women from the project to achieve transcendence and glory through science and technology (209–228). Noble challenges the perception that contemporary technology is designed to meet basic human needs and suggests that, through technology, humanity aspires to transcend the limitations and burdens of being human.

In idolising technology to the point of giving it religious status, we displace God as the true focus of our praise and worship. In believing that technology can solve all our problems and relieve us of all our burdens, we deny our very mortality and relatedness with other creatures. Idolatry involves the breaking of these bonds of relation, primarily with God but also with our fellow creatures.

2.5 Conclusion

The previous section identified technological distortions of relational life arising from the instrumentalism and idolatry of technological culture. Instrumentalism weakens or distorts our relationships with one another, with other creatures and with the world around us. Idolatry is a denial, a turning away from, our relationship with God. The act of objectifying the other separates, or disengages, one from the other. By seeking to deny, or circumvent, our human limitations by raising technology as an idol, we disengage from God and the world around us. Gunton identifies disengagement as symptomatic of modernity arising from rationalism and instrumentalism: "Disengagement means standing apart from each other and the world and treating the other as external, as mere object" (1993, 14). The result, he suggests is alienation from each other, the natural world and from God.

Heidegger's philosophy speaks of the radical disengagement from the fullness of being, of reality itself. With our technological mindset, we relate to the world in a profoundly distorted and limited fashion that ultimately traps humankind as a resource and shrinks human beings' creative capacity to an instrumental one. The instrumental rationality of technological culture leads to fragmentation at all levels, even the level of self. "[T]echnology means fragmentation—of life into a succession of problems, of self into a set of problem-generating facets, each calling for separate techniques and separate bodies of expertise" (Bauman 1993, 197).

Heidegger (1993a) writes about the fracturing of "building" from "dwelling" in technological culture. He suggests that the building, constructive and technological activities of human beings need to emerge out of a deep awareness of dwelling, of relatedness between the "earth and sky, divinities and mortals". In this poetic language, Heidegger speaks of the unity of creation and the way in which human beings are called to exercise their creative "building" powers while keenly aware of, and honouring, this unity. Our instrumental thinking leads us to understand our creative powers, our act of building, as "merely" constructing a dwelling. Heidegger upturns this thinking to indicate that true building and creativity emerge from a proper dwelling in relation with the rest of creation and God.

What, then, are the main insights to be drawn from the critiques of technology and technological culture considered in this chapter?

First, it is crucial that we become aware of the technological culture that provides the pattern to our lives. It is not only insufficient, but it is dangerous, to regard technology as

a collection of value-neutral tools. To understand technology, we need to understand our technological culture.

Second, technology is our way of life, our way of being and our way of understanding, and it has been shaped by centuries of Western metaphysics. But it is a blinkered and overbearing way. Its dominance is marginalising other ways of living, being and understanding.

Third, technological culture is characterised by instrumentalism and idolatry. We tend to regard each other and the natural world as disposable resources, and accord undue faith in our technological abilities to solve all our problems.

Fourth, this instrumentalism and idolatry may be interpreted as our technological blindness to relational life and the consequent distortion of relationships between people, the world around us and with God.

Is technology the end of metaphysics? Heidegger believes that "philosophy is ending in the present age" with the result that "the need to ask about modern technology is presumably dying out to the same extent that technology more decisively characterizes and directs the appearance of the totality of the world and the position of man in it" (1993a, 435). The technological blindness to, and distortion of, relational life mitigates against a philosophical—and theological—examination and understanding of technology. If technology is the end of metaphysics, as Heidegger suggests, then what is needed is a new way of thinking about and relating to the world that gives honour and reverence to the other and to the source of all being, and that acknowledges the relatedness of human beings with divine and earthly realities. Only then can we fully grasp and live out our full creative potential.

The features of a theology of technology then are to be found in theological insights into relational life. Gunton (1993) argues for a theology of relatedness and suggests that it is in the doctrine of creation that such insights might be found. Chapter 3 therefore focuses on this ancient doctrine as it is interpreted by contemporary theologians.

[Chapter 3]

Enframing Technology: Creation and Natural Relationality

The previous chapter argued that contemporary technological culture is characterised by distortions of relational life. This is evident in our exploitative attitudes to each other and the world around us and in the way in which we idolise our technological capacities for control and manipulation. By displaying such attitudes we disregard, distort and erode our relations with God and others and deny the natural relationality that inheres in creation and human life.

The world's relatedness to God is natural in that the very existence of the world depends on God's bringing the world into being. Further, this relatedness is evident within the created order in its ecological and human relationships. Relational life, and not self-sufficient isolation, is a defining feature of God and God's creation. In this context the phrase "natural relationality" is meant to indicate that relationality is a "transcendental". "Transcendentals are 'necessary notes of being'; ... as such they constitute fundamental features of the cosmos" (Hardy 1989, 27). The nature of this relationality is the subject of theological debate for it involves attempts by human beings to understand the nature of God and God's creation. Not all relationships are good relationships as they are subject to the distortion of sin and alienation. The challenge is to discern, understand and nurture the relatedness that is of God.

This chapter explores a theological understanding of relationality in the context of the trinitarian doctrine of creation. Why the doctrine of creation? Technological culture raises a concern for the ways in which the creative talents and destructive actions of human beings are manifested. In the Christian theological tradition, the doctrine of creation includes an important emphasis on human beings made in the image of God. This relationship and identity gives us particular roles and responsibilities, a unique vocation in relation to the world around us. If we were to live true to that vocation, what would the implications be for our technological culture? The doctrine of creation, as the body of

wisdom regarding God's creative, redeeming and sustaining actions in the world, and our human response, may provide some answers.

There is a growing consensus among contemporary theologians that relationality is key to understanding the doctrine of creation in a trinitarian perspective. Indeed, Cunningham goes as far as to say, "If we had to name a single issue on which recent trinitarian theologians have achieved the greatest degree of consensus, we might well point to their collective enthusiasm for the category of 'relationality'" (1998, 25). He suggests that relationality is being embraced as an alternative to the "metaphysics of substance". Instead of the world—and God—being understood as a collection of independent entities each known by its specific essence, the concept of relationality gives emphasis to "both God's internal relationality and God's loving relationship with the world" (25). Relations are no longer being seen as subordinate or dependent on the existence of prior substance (Gunton 1991, 156). Rather, persons and other beings cannot exist apart from, and are identified by, their relations with others. Relationality, in Gunton's words, is a "transcendental", a quality that comes from God and speaks of God's being and way of being with the created world. This relationality is demonstrated in our very understanding of God as three yet one. A trinitarian understanding of the doctrine of creation, therefore, speaks of the relatedness that suffuses reality, of "being in communion" (10).

It is with this intuition that relationality is crucial in our attempts to understand God, God's actions in the world and ourselves as human beings, that this chapter considers the doctrine of creation and natural relationality. It does so in the context of the insights of the previous chapter, i.e. that human beings, through our contemporary technological culture, tend to disregard and thereby distort and damage our relatedness with the world and with God. In this way, this chapter "enframes" technology. It draws on insights into natural relationality found in the doctrine of creation to construct a framework from which to interpret technology.

The first section of this chapter examines key themes in the doctrine of creation which help to understand relational life. The second section focuses on the concept of "natural relationality". The third section elaborates how natural relationality is crucial to understanding contemporary trinitarian understandings of the doctrine of creation and, in particular, the implications for the true vocation of human beings. This discussion provides the basis for the next chapter, which draws together the central features of a theology of technology.

3.1 Creation as Founding Reality

The doctrine of creation is much more than its name suggests. The word "creation" has a variety of theological meanings. One cluster of meanings refers to the origins of the earth or the universe. Creation in this sense refers to the original moment of formation, the creation of all around us, before which nothing existed. Another cluster of meanings refers to the natural world, creation around us. This may refer simply to the natural environment of planet earth or, more widely, to the whole universe. A third cluster of meanings refers to an ongoing relationship between God the Creator and all that God has created.

Schwöbel points out that these clusters of meanings are held together by two complementary Latin roots for the word creation: *creatio*, which refers to the act of creating and *creatura*, which refers to the result of such creating (1997, 161). The natural world, which may be referred to as "nature", "the universe", "the world" or "the cosmos", is known as *creatura*, whose existence depends fundamentally on God's action. *Creatio* and *creatura* each presupposes the other: an act of creating implies the existence of a creature and the existence of the universe implies an act of creating. Hence both *creatio* and *creatura* run through any broad-ranging theological reflection on creation.

In the history of the doctrine of creation, various understandings and emphases have been apparent. Pelikan charts how Old Testament understandings of creation were influenced greatly by Greek thought. For the people of Israel, he says, creation was "not principally an account of origins, but of dependence" (Pelikan 1990, 11). According to this understanding, God is sovereign over both nature and history. Neither has ever been without the presence of God (12). This Old Testament view of creation is not concerned with how God created the world but rather with humankind's basic dependence on God for all life, every day.

In the days of the Old Testament, therefore, the belief in God as Creator was so profound that it was unstated as an article of faith. It was more a presumption than a belief. Human beings could not conceive of any other possibility than the world originating in God. Westermann suggests that this deeply held assumption had an important consequence in Old Testament thinking and writing. The question, "How did God create the world?" was not an article of faith. Hence varied accounts of the origins of the world could co-exist quite happily, as seen in the different creation narratives in Genesis (Westermann 1974, 5). These narratives were not written with the empirical mindset of a scientific age keen to understand the mechanics of the world and its origin. Rather the creation narratives

reflect attempts to give expression to the relationship of God to the world, of the Creator to the creation (Clifford 1991, 198).

Pannenberg stresses that "the concept of creation developed in Israel as an extension of saving faith in the covenant of God, who elects and acts in history as also the beginning of all occurrence" (1994, 9). Israel's understanding of the divine origin of the world was influenced by Canaanite cosmology, which included the gods El and Baal, both of whom were associated with creative activity. Yahweh, the God of Sinai and the exodus, took on the cosmological functions of these creator gods. The result was that the "cosmic order and origin were traced back to the God of salvation history ... In both nature and history the universe is then the field of Yahweh's acts" (11).

The creation stories of the Old Testament, therefore, held within them an understanding of God who both creates and saves. The theology of creation of the writers of the New Testament amplified this understanding of God. The saving action of Jesus Christ, the Son of God, was identified with the creative as well as the redemptive actions of God. Belief in Jesus Christ required belief in God as both creator and redeemer. Salvation and creation were drawn more closely together. As Clifford sums up:

> [J]ust as the primary purpose of the Old Testament accounts of creation is not to report the physical beginnings of the world but is to express faith in God, so the New Testament creation theology is a reflection of the meaning of Christ. Its purpose is to provide an interpretation of salvation in Jesus that is closely linked with creation, so closely linked that salvation is looked upon as a renewal of the original creation through the saving presence of God in Jesus (1991, 209).

The coming of Jesus Christ to the world required the writers of the New Testament to articulate a theology that reinforced the link between the redemptive actions of God, through Christ, with the creative actions of God, the source of their being.

The holistic understanding of creation that the early church brought with it from Judaism was challenged by Greek thought. The church found it needed to defend its faith that the world is utterly dependent upon God and that nothing existed without God. This brought a strong articulation of, and emphasis on, the doctrine of *creatio ex nihilo*, creation from nothing (Pelikan 1990, 12–13). "Wherever and whatever God creates is without any preconditions" (Moltmann 1985, 74). The particularly Christian emphasis in the formation of this doctrine was on the "nothing". That is, God did not create the world from pre-existing matter and did not create the world from external necessity. This emphasis

on *creatio ex nihilo* also led to a distinction between original and continuing creation in a way that was not explicit in Judaism. Pelikan argues that *creatio ex nihilo* became the “root meaning” of creation in the centuries that followed and profoundly influenced theological thought and the relationship between science and theology (1990, 13).

Creation came to be understood, first and foremost, as a question of origins and causality. As Moltmann remarks, by the nineteenth century the doctrine of creation had taken a narrow focus of *creatio originalis*, creation in the beginning. The ongoing relationship between God and all created things, the doctrine of *creatio continuata,* and the doctrine of the new creation to be known eschatologically, *creatio nova,* received less attention (Moltmann 1985, 193). The result was a restricted understanding of creation. “[T]he relation between God and his creation was restricted to a relation of causality, and the wealth of God’s other relationships to the world, and the world to him, was disregarded” (193).

This restriction in the understanding of creation meant that Christian theology came into direct conflict with scientific theories of evolution which suggested natural biological processes were the means of creation (Pelikan 1990, 15). This led to a popular understanding of the doctrine of creation, apparent to this day, which is associated with the origins of the universe and with corresponding debates between evolution and creationism. This understanding of creation, as the origin of life as we know it, is an important element of the doctrine, but it is only one element.

As theologians and scientists engaged in constructive discussion in the twentieth century, theological understandings of creation broadened (16). Today, discussions of the doctrine of creation, especially as it is expounded by contemporary theologians, address understandings of humankind’s role in the world, eschatological understandings of the ultimate meaning, goal and purpose of God’s creation, the on-going activities of God as Creator, Redeemer and Sustainer, and the self-understanding and mission of the church. It provides a rich resource for understanding God, the world and humanity’s place within the world. Clifford describes the doctrine of creation this way. “The doctrine of creation expresses the belief that God is the origin, ground, and goal of the world and everything in it. Creation is a fundamental belief from which flows much of what Christians profess about God, about the cosmos we inhabit, and about our destiny and hope” (1991, 195). This broader understanding of the doctrine of creation is needed to appreciate fully the insights into the dynamics of relatedness that the doctrine affords.

3.1.1 Creation and Redemption

The relationship between creation and redemption has been a topic for theological debate for centuries and remains so. It has generated many questions in theological circles. Is creation basically good or basically corrupt? When regarding the created world, do we have in mind "Behold, it was very good" or "Behold, I make things all things new"? Is the destiny of all creation to be fulfilled or restored? Should the natural world be the basis of our ethics and behaviour? Or, is all creation flawed by the Fall and in need of redemption? In all of these questions, we find the tension between creation-focused and salvation-focused theology.

Iranaeus, an early church father of the second century, is credited with the classical exposition of a theology of creation in the context of salvation. In his *Against Heresies* (Iranaeus 1885) he argued against the Gnostic teaching of the time, which was driving a wedge between the God of the Old Testament and the God of the New Testament, between God the Creator and God the Redeemer. Iranaeus rejected this dualism and insisted on the unity of creation and redemption, that the Jesus of the New Testament is the Word of God in creation (Clifford 1991, 212). Gnosticism, which preached a radical discontinuity between creation and redemption, was rejected by the early church fathers. "Therefore the God who acts in history is the Creator: this fundamental conviction of Israel's faith found an echo in the church's faith as patristic theology defended the faith against gnosticism" (Pelikan 1990, 13).

However, the relationship between creation and salvation has remained a primary point of debate among theologians. The development of modern science brought renewed arguments about this relationship. When science concerned itself with the origins of the world through astronomy and the biological sciences, rifts developed between scientists and theologians. These led to a period of conflict between science and religion, as evidenced in the controversies surrounding the work of Galileo and Darwin. This period of conflict was later replaced by a period of demarcation. The church lost interest in the doctrine of creation, ceding that ground to science. The increasing power of science and technology meant that the natural world came to be regarded as a domain for human mastery rather than a realm of divine mystery. Interest in the relationship between Creator and creature revolved around a fascination with understanding and manipulating the world through science and technology. With this dominance of a scientific and technological world-view, theology retreated to fields of enquiry "beyond the reach of science" (Lønning 1989, 7).

By the early twentieth century, the concepts of creation and salvation had become quite separate topics of theological conversation, at least in Western Protestant churches. This was further exacerbated by the experience of World War II. A polarisation occurred in Nazi Germany between proponents of natural theology and revealed theology, i.e. between those who drew their ethics and morality from God's given order as seen in a particular understanding of the natural world and those who based their morality and ethics on the Word of God as revealed in the person of Jesus Christ (Moltmann 1985, xi). The doctrine of creation subsequently became identified with a restrictive and dangerous natural theology justifying Nazism and racism, and so fell out of favour. Hardy remarks that this was an example of an attempt to define "orders of creation" in such a way that a particular race or group is elevated above others in God's creation. He concludes:

> What is important here is to recognise that a failure at the pragmatic level does not falsify at the transcendental level; it only shows that the particular interpretation of the transcendental level has failed ... [A]rguing that there is a social transcendental does not guarantee the quality of a particular content for it. That requires a further movement identifying the basis of the unity, truth, goodness and beauty of society. Such a movement, like the Doctrine of Creation itself, is a fundamental operation of human thought and life, and perfect results should not be expected (1989, 31).

The doctrine of creation and, in particular, natural theology, fell out of favour because of a distorted understanding of the orders of creation. Attempts to discern a direction for human society and culture from a theology of creation had had tragic results. The history of salvation became the primary theological focus for the Protestant churches as their interest in creation faded.

This abandonment of the doctrine of creation was largely a phenomenon of Western theologians and churches. Eastern and Oriental Orthodox traditions retained a strong school of theological thought on the doctrine of creation with an emphasis on the sacredness of God's creation and the ongoing creative relationship between God, nature and humanity (Lønning 1989, 7–9).

As the twentieth century progressed, there was a resurgence in interest in creation theology. This was largely due to a growing concern for the ecological problems that followed rapid technological change. As these problems increased in number and intensity, governments, community organisations and churches became increasingly concerned about the natural world and its wellbeing. Theologians revisited the doctrine of creation so as to understand and respond to the pain of the created world. As ethical problems arose from

environmental crises, theologians were challenged to provide theological foundations and directions for caring for the natural world. This link between the ecological crisis and renewed theological interest in creation is explicit in the writings of key thinkers of the time. For example, Moltmann subtitled his book *God in Creation* as "An Ecological Doctrine of Creation" and begins with the comment, "Faced as we are with the progressive industrial exploitation of nature and its irreparable destruction, what does it mean to say we believe in God the Creator, and in this world as his creation?" (1985, xi). This sense of urgency was apparent in the World Conference on Faith, Science and the Future convened by the World Council of Churches in 1979 (Abrecht 1980; Shinn 1980). This conference typified the search for new theological understandings of creation and subsequent ethical and practical implications.

The twentieth century also saw deepening ecumenical interchange. This brought increased awareness and interest across confessional lines in the various understandings of the doctrine of creation and fostered debates about them (Lønning 1989). A central question in these ecumenical debates was: which should be our primary theological reference—the ontology of created being or the history of salvation? This is the question that most obviously runs through comparisons between the various confessional understandings of creation. For example, Eastern and Oriental Orthodox theologians commonly criticise traditional Western Roman Catholic and Protestant theology for digging a false chasm between creation and salvation, for making too strong a distinction between the activities of God the Creator and God the Redeemer. They argue that the Western doctrine of creation has become identified with God the Creator to the exclusion of Christ and the Holy Spirit. For Orthodox theology, the distinction between the creative and redemptive actions of God had never been sharply distinct. Eastern Orthodox theology has a more contemplative character regarding nature as "the element of divine presence" (Lønning 1989, 174). It also has a strong emphasis on the dynamic and organic unity of the three persons of the Trinity. Lønning identifies two main themes in the Eastern Orthodox critique of Western theology: "the tension between an undue exaltation and an undue degradation of nature, allegedly caused by an disproportionate emphasis on sin and redemption; and an idea of nature as the object of human domination" (10).

In broad terms, Roman Catholic theology had become identified with an exaltation of nature, and with natural theology. Protestant theology had become identified with the degradation of nature to merely being the stage on which human history was played out. Largely as a result of ecumenical interaction and ecological concerns, both Protestant and Roman Catholic theologians reviewed their traditional understandings of the relationship between creation and salvation. In the case of the Roman Catholic theologians, there was

a moving away from understanding the natural world as normative and providing the basis for insights in the nature of God and moral ethics. Greater attention was given to salvation history as a basis for theology and ethics. This shift occurred when traditional cosmologically based theology and its static view of nature proved inadequate and it could not respond meaningfully to new scientific and societal developments (Lønning 1989, 61). Meanwhile, Protestant theology was making its own adjustments from the opposite end of the creation–salvation divide. Largely due to the ecological crisis and a greater awareness of environmental concerns and a search for environmental ethics, Protestant theologians began to seek a more dynamic understanding of creation while maintaining their traditional focus on salvation. Hence the ideas of Roman Catholic and Protestant theologies, while retaining some distinctiveness, began to converge regarding the importance of holding together creation and salvation.

While there has been greater ecumenical exchange and mutual understanding with Orthodox churches, a corresponding shift in Orthodox theology due to an influence from Western theology is not so apparent. Lønning suggests that much more dialogue has yet to happen between Eastern Orthodox and Western churches regarding fundamental differences in understandings of the doctrine of God and ancient disagreements about the the creed (177).While there is unity between the churches in their confession of God as Creator, division between the churches still exists about the *filioque* clause. Does the Holy Spirit proceed from the Father, as stated in the Niceno-Constantinopolitan Creed still held by the Orthodox churches? Or does the Holy Spirit proceed from the Father and the Son, as maintained by the Western Churches? This division between the Eastern Orthodox and Western churches climaxed in 1054 and is still present today (Peters 1993, 63–66). It remains a blockage to constructive ecumenical engagement about trinitarian theology, including the trinitarian doctrine of creation.

While this fundamental doctrinal difference about the Holy Spirit continues between Eastern Orthodox and Western churches, the role of the Holy Spirit in creation and redemption is receiving greater specific attention in contemporary Western theology of creation. Pinnock identifies Pannenberg, Moltmann and Torrance as particularly influential in articulating the creative role of the Spirit. "[T]he Spirit is present everywhere, directing the universe towards its goal, bringing to completion first the creational and then the redemptive purposes of God. Spirit is involved in implementing both creation and new creation. There could not be redemptive actions unless first there have been creative actions. The creative actions underlie the salvific actions. The Spirit who brings salvation first brooded over the deep to bring order out of chaos" (Pinnock 1996, 50). Challenging

a tendency to restrict the role of the Spirit to the personal piety of the life of the church, these theologians emphasise the cosmic, sustaining and reconciling role of the Spirit.

Pannenberg notes that the Spirit was identified with the origin of life in the Old Testament. The Spirit as breath and wind brought associations with the breath of life. In the New Testament, the Spirit is connected with the resurrection of the body and immortal life. However, these early connections between the Spirit and the theology of creation weakened over the centuries. In the early Latin church "the activity of the Holy Spirit was seen in connection with charity and grace rather than with the creation of life" (Pannenberg 1993, 126). The Reformation, while emphasising the role of the Spirit in creation, did not develop a systematic theology of nature and understandings of the Spirit became increasingly subjective and pietistic. Pannenberg argues that a theology of creation that recognises the action of the Spirit in creation needs to be developed. He suggests a "redefinition of the concept of spirit on the basis of the self-transcending tendency in all organic life" as a useful way to understand the action of the spirit (135). Further, the creativity of human beings testifies "to a power that raises our hearts, the power of the Spirit. When we are most creative, we most self-consciously participate in the spiritual power beyond ourself" (137). In the context of creation then the role of the Spirit may be understood as the "Life-Giver, the power of becoming, who enables the unfolding of the universe and the evolution of life on Earth", as the intimate interior presence of God in all creatures and as "the ecstatic gift of divine communion" (Edwards 1999, 78–100).

By the end of the twentieth century, mainstream creation theology had reached a general ecumenical concurrence that a trinitarian formulation for the doctrine of creation is the most fruitful. This approach has the power to hold together the creative and redemptive actions of the triune God. This trinitarian theology of creation is fundamentally relational, concerned as it is with an understanding of God as a unity in diversity, and with God's loving relation with creation.

3.1.2 Transcendence and Immanence

Another basic theme running through the history of the doctrine of creation is the transcendence and immanence of God. What is the nature of God's relationship to the created order? As discussed earlier in this chapter, a central theological theme in the history of the doctrine of creation is that of *creatio ex nihilo*, creation out of nothing. This teaching was unique to Christianity in the early centuries of the church. It stood in opposition to Greek philosophy, which understood God as the architect working with existing matter

rather than as the creator of the world out of nothing (Clifford 1991, 210). The Gnostics, against whom Iranaeus argued, believed in a dualistic cosmology of two gods—one who created the spiritual world and a lesser god who created the material world. Its corollary is that spiritual reality is good and material reality is evil (212). The implications of the Christian teaching of *creatio ex nihilo* include belief in a transcendent God who cannot be limited or contained by the world and belief in the inherent goodness, rather than evil, of creation. It also implies an utter dependency, or contingency, of the world on God for its very existence.

While transcendence implies a clear distinction between creator and created, immanence implies an identification and intimacy of God with the world and ongoing creative processes. This understanding of creation became secondary when *creatio ex nihilo* dominated theological discussions of creation (Pelikan 1990, 13). When science and theology engaged in more constructive and less conflictual ways in the twentieth century it was the immanence of God that attracted renewed attention.

Process theologians are particularly critical of understandings of God that emphasise transcendence at the expense of immanence. Birch, for example, suggests that our preoccupation with *creatio ex nihilo* leads us to think of God as a remote God who created the world, put the world into motion and then left the stage. This is a mechanistic "clockwork" understanding of creation (1980, 64). Birch argues for an immanent God continuously involved through the very workings of nature through the biological processes of evolution.

Process theology builds on the philosophical ideas of Alfred North Whitehead (1929). As its name suggests, it understands creation as being a process of becoming, rather than being, in a way consistent with evolutionary biology. God, nature and humanity are understood in a close unity undergirded by a life-ethic. The work of God as a persuasive, immanent and ongoing presence is fundamental to process theology. The work of God through *creatio ex nihilo* is rejected in favour of a process of becoming as the basis of reality. God's creative action is discerned through ongoing biological processes.

The thesis of process theology has much to commend it to practical application in a world seeking ecological sustainability. Where process theology is weak is in its tendency to collapse Creator and creation into one, to blur the distinctions between divine and human. As Lønning puts it, "[Process theology] has been accused of amalgamating the divine with an empirical world process and delimiting ethics to an ecologically justifiable compromise, thus eliminating the I-you confrontation between God and the human being"

(1989, 22). In essence, process theology emphasises the immanence of God at the expense of the transcendence of God. As Lønning points out, what is lost is a sense of God's divine initiative and grace: "Process theology abolishes the notion of 'gift' in the strict sense, for there is no basic distinction between giver and given, nor between giver, given and receiver" (133).

Discussion of the redemptive work of God as manifested in the person of Jesus Christ is likewise virtually absent in process theology. As a result, process theology does not fit easily into a trinitarian understanding of God's activity in the world. However, process theology does have the potential to dissipate the tensions between theologies weighted towards either creation or redemption. If creation is understood as a process of becoming rather than an ontological state of being, it approaches the historical understanding of reality which suffuses liberation theology and the search for salvation (Lønning 1989, 130). Indeed, one of the main texts of process theology is titled *The Liberation of Life: From the Cell to the Community* (Birch and Cobb 1981). Liberation theology embraces a host of theological approaches from the perspective of particular groups and peoples who suffer discrimination and oppression on the basis of gender, race or class. It is strongly grounded in historical experience and the search for human freedom. As such it resonates with salvation history. Consequently it has received criticism for being oblivious to the created order, for regarding the world simply as a stage for human liberation. As ecological problems demanded more of the world's attention, some theologians of the liberation theology stream recognised this blind spot in their theology and specifically turned their attention to creation theology in search for insights into ecological concerns. Both process theology and liberation theology, while seeking to discern and proclaim God's continuing activity in biological processes and human history, run the risk of losing sight of the transcendence of God and the utter contingency of the world.

Just as the creative and redemptive activities of God need to be held in dynamic relation in the doctrine of creation, so too does the transcendence and immanence of God need to be held together. If transcendence is emphasised and immanence ignored, then the relationship between God and creation is seen as one of a God absent from, and uninvolved in, the world. If immanence is emphasised and transcendence ignored, then the distinction between God and creation dissolves. God becomes identified with the world to such an extent that ultimate questions of meaning and purpose are confined to the creation's—or more specifically—humankind's understanding of itself. We lose our sense of mystery, of the other. Both these attitudes lead human beings to assume all power and control to ourselves by, on the one hand, regarding God as uninvolved in the ongoing processes of

the world and, on the other hand understanding reality as reduced to the physical world we know and manipulate.

Peters suggests that it is in the idea of the Trinity that our experience of God as both "beyond" and "intimate" is held together. "God is transcendent, absolute, infinite, eternal, omnipotent, omnipresent, and neither matched nor exceeded by anything in glory" and yet God is also "nearer to me than I am to myself" (Peters 1993, 19). He goes on to say:

> The Beyond and the Intimate—both belong to the experience of God as apprehended by the symbols of the Christian faith. When Christian theologians tend to favor one to the exclusion of the other, our religious sensibilities get restless until the two are brought back into their paradoxical yet complementary relation ... It is the root of the logical problem of holding together God's absoluteness and God's relatedness (19).

To hold in relation the transcendence and immanence of God, the co-inherence of God's being totally other and totally identified with humankind, opens our eyes to the relation of the mystery of creation and our particular human vocation to discern, and work with, God's continuing presence in the world. We experience the transcendence of God via God's intimacy with us, and vice versa. Transcendence and immanence are not opposites but rather depend on each other. As we come to know God, each other and the world around us more intimately, so we come to know and respect the otherness of those with whom we are in relation.

3.1.3 Humankind in the Image of God

With the rise of science and technology in the twentieth century and the increasing power of human beings to affect the world around them, creation theology has become increasingly preoccupied with the proper role and place of human beings. Theological attention has therefore turned to the doctrine of creation through the lens of the *imago dei,* human beings created in the image of God.

An influential but controversial view about the role of humankind was articulated by Lynn White Jr. (1967) in the 1960s. White blamed the Christian doctrine of creation for humankind's destructive exploitation of the earth. He maintained that the doctrine of creation has been used as a rationale for human beings to assume a domineering role over the rest of nature, a role that is exercised through science and technology. God was restricted to the role of absentee landlord and humankind elevated to god-like status.

God was therefore squeezed out of an understanding of creation, with human beings supplanting themselves as lords and rulers over nature (Abrecht 1980, 29). The result was a dualism in modern Western scientific thought as the nature–humanity–God relationship was truncated to a nature-humanity axis. The development of science and technology and subsequent ecological problems are therefore linked tightly to Christianity and its understanding of creation.

White's claims regarding the culpability of Christianity have been disputed by other theologians (Clifford 1991, 240–241). However what has been more widely accepted is his analysis of an exploitative attitude to nature that typifies modern industrial societies and the dualism between humankind and the rest of creation.

Birch uses the metaphors of silo, factory, laboratory, gymnasium and cathedral to describe these dominating attitudes to nature (1980, 71). That is, humankind regards nature as a source of food and raw materials to be manipulated, a phenomenon to study, a place for enjoyment and recreation and a place to enjoy aesthetically—all attitudes that betray an instrumental view of nature. Such attitudes to the rest of creation reveal an anthropocentrism in which human beings are regarded as the pinnacle of creation and God's representative on earth. The *imago dei* is thus understood in terms of human beings representing an absentee God in a creation that exists for their benefit and use. An awakening ecological sensitivity has tempered such attitudes to nature to some extent but anthropocentrism still underlies an attitude of preserving the environment, not for its own sake, nor God's sake, but for the interests of humankind. Contemporary theology of creation reveals a keen awareness of anthropocentrism and its dangers. There is a strong concern to return God to the relationship and to recognise the intrinsic value of the non-human created order. However the question regarding the roles and responsibilities of humankind in relation to God and God's creation remains.

Ecological approaches to the doctrine of creation have brought other understandings of the *imago dei* that do not have such destructive and domineering overtones as those proposed by White. Clifford has identified several approaches expounded by theologians of the late twentieth century such as Arthur Peacocke and Jurgen Moltmann (1991, 241–246). They include the role of human beings as priest in a sacramental view of the world, human beings as prophets called to recognise and proclaim God's actions in creation, and human beings as co-creators working in co-operation with God's creative processes. Feminist theologians reject a patriarchal and hierarchical view of God and creation, and embrace models of loving community to speak of the Trinity and God's relation to the world (Johnson 1992).

Trinitarian understandings of the *imago dei* are not new. As Thomson (Thomson 2000) points out, Augustine, the early church father, wrote about the *imago dei* in trinitarian terms. She notes, however, that Augustine's theology focuses on an analogy between the trinity of God with the trinity of the human mind—memory, understanding and will. Mind is likened to the Father, understanding to the Son and will to the Spirit. Augustine's trinitarian understanding of the *imago dei*, therefore, was restricted to the rational mind. According to Thomson, it was not until the twentieth century that a more holistic understanding of trinitarian relationality with respect to the *imago dei* was developed. "The image as trinity has been reconceived in such a way that it is not an intra-human trinity, within each person's mind, but inter-human, within our relationships with each other. That is, humanity images God in so far as we relate to each other with mutuality, respect and equality, analogous to the trinitarian relations within God" (83). Whether Augustine's understanding of the *imago dei* is as narrowly rationalistic as this is a matter of debate. Ormerod (Ormerod 2003) argues that the intention of Augustine's writings were more broadly relational than now commonly interpreted. The point remains, however, that in the twentieth century *the imago dei* came to be understood increasingly in relational terms.

The ecological debate of the twentieth century heightened awareness not only of human beings' relations with each other, but also with the world around them. It has brought, therefore, an awareness of the crucial importance of humanity's relationship with God and creation. Human beings are understood as biological animals susceptible to the same biological possibilities and limitations as other species. The interdependency of all life has been recognised and "the community of the common realm of God" upheld (Scott 2003b, 256). However, the specific role of human beings as *imago dei* remains a topic of theological and ethical debate. How are we to understand ourselves in a way that honours, rather than threatens, our relatedness to both God and creation?

This brief survey of the doctrine of creation reveals three ways in which relationality emerges as fundamental. First, a trinitarian approach to the doctrine of creation has emerged as an effective way of constructively holding together God's creative and redemptive actions in a way that avoids claiming primacy for one over the other. This trinitarian understanding emphasises the relational life of the triune God and of God's being with creation. Second, the nature of God's being with the world needs to be understood as both transcendent and immanent, as completely other than, and completely identified with, the world. God's otherness from creation is inseparable from God's relatedness with creation. Third, the particular role and place of human beings in the created order require us to consider the

imago dei and the implications for humankind to understand and seek right relations with God and the rest of creation.

Each of these themes in the doctrine of creation draws our attention to relationality. As Cunningham points out, relationality is an important contemporary theological theme (1998, 25). But in many ways it is a general concept requiring further specificity. The next section seeks this further definition by considering the insights of Whitehead and Buber, both of whom grappled with the importance of relationality.

3.2 The Naturalness of Relationality

Relatedness, relationality, relationship—such terms are used commonly, and often quite loosely, in theological papers and discussions. But what is the ontological status of relationality? What is its inner dynamic? This section considers the contributions of Alfred North Whitehead and Martin Buber, both of whom gave particular attention to these questions. This discussion provides the basis for a theological consideration of a specifically trinitarian relationality in the following section.

3.2.1 Alfred North Whitehead: The "Reciprocal Relation" of Transcendence and Immanence

Whitehead is best known, in theological circles, for providing the philosophical and theological inspiration to the school of process theology. His text *Process and Reality* (1929) has been particularly influential. A mathematician and physicist, Whitehead was concerned to develop a philosophy that took into account the paradigm shifts occurring in physics in the early twentieth century. In the process, he challenges conventional metaphysics with its emphasis on the substance of things and proposed a new way of understanding based on relations. As Suchocki explains it:

> Whitehead ... developed his philosophy to reconceptualize the structures that account for existence. These structures were, of course, thoroughly relational, in keeping with the discoveries of physics. The import for Christian theology has been monumental with respect to the doctrine of God. If relationality, far from being an inferior accident of finite existence, is instead the *sine qua non* of all existence whatsoever, then the tension between God and the world is resolved. The question is not how a totally self-contained and self-sufficient reality can relate to

> anything outside itself, but rather, how one can reinterpret creation, providence, redemption, and eschatology under the new relational paradigm (1997, viii).

Whitehead's metaphysics is influenced by his knowledge of mathematics and physics and especially the then new theories of relativity and force field theory. He challenges the traditional metaphysics based on the being of substance or quality and emphasises instead the being of relation as fundamental (Whitehead 1929, viii). This involves an attack on classical Newtonian physics based on particles of matter occupying space in a particular time frame in favour of understanding reality as lines of force overlapping each other. Whitehead elaborates these concepts in his mathematical work, for example in his geometry, and also in his metaphysics. Instead of particles of matter, Whitehead uses as his fundamental metaphysical category the concept of "actual occasions" in a process of becoming, building on other actual occasions in the immediate past (Audi 1995, 852). He refers to the "relatedness of nature" whereby each thing and creature forms itself "from its interrelations with the whole of its environment" (Urmson and Rée 1991, 324–325). Relational properties are not external or accidental to a thing or creature but are essential and internal to its very identity and makeup.

Whitehead prefers to speak of "becoming" rather than "being" as the nature of reality. The world, according to Whitehead, is to be understood as the becoming of a series of events rather than the being of a collection of independent entities. He calls this a philosophy of organism "based upon the notions of 'system', 'process', 'creative advance into novelty'" (Whitehead 1929, 180).

Whitehead describes God as both "primordial" and "consequent" (488). By this he means that God, while being the ultimate ground of existence and thereby primordial, is not unchangeable. God changes and is affected by the interconnected network of influences and forces of relatedness that permeate all creation. Whitehead describes God's nature as "dipolar". God's nature is "free, complete, primordial, eternal, actually deficient and unconscious" and is also "determined, incomplete, consequent, 'everlasting', fully actual, and conscious" (488–489). God is understood, therefore, by God's very relatedness to creation and God's creative act as one of "infinite patience ... tenderly saving the turmoil of the intermediate world by the completion of his own nature" (490).

This understanding of God holds together the transcendence and the immanence of God's action in creation, the beyond and the intimate. While being primordial, eternal and complete, God is at the same time involved, present, rejoicing and suffering with the ongoing creative processes of the world. "What is done in the world is transformed into

a reality in heaven, and the reality in heaven passes back into the world. By reason of this reciprocal relation, the love in the world passes into the love in heaven, and floods back again into the world. In this sense, God is the great companion—the fellow-sufferer who understands" (Whitehead 1929, 497). This unity of transcendence and immanence is one of the strengths of Whitehead's philosophy and resonates with ecological and evolutionary understandings of the natural world and humankind's place in it. Process theology has developed his philosophy of organism and his emphasis on the relatedness and the becoming of all creation, as can be seen in the writings of Hartshorne (1948) and Cobb and Birch (1981). "Process metaphysics understands every new event to be jointly the product of the entity's past, its own action, and the action of God. Here God transcends the world but is immanent in the world in a very specific way in the structure of each event" (Barbour 1997, 43).

Likewise, Whitehead's metaphysics brings a unity to the one and the many, the universal and the particular.

> God is … the unity of vision seeking physical multiplicity. The World is the multiplicity of finites, actualities seeking a perfected unity … The theme of Cosmology … is the story of the dynamic effort of the World passing into everlasting unity, and of the static majesty of God's vision, accomplishing its purpose by absorption of the World's multiplicity of effort (Whitehead 1929, 493–494).

In Whitehead's metaphysics, therefore, we find some indications about the ontology of relationality. This metaphysics is in sympathy with insights from contemporary physics, evolutionary biology and theological understandings of God as intimately involved and accompanying the history of creation. The co-inherence, the holding together, of transcendence and immanence is a key insight. However, Whitehead and process theologians are often criticised regarding the comparative silence about the person of Jesus Christ and a trinitarian understanding of God and creation (Peters 1993, 115).

3.2.2 Martin Buber: "The a Priori *of Relation"*

The Jewish philosopher, Martin Buber (1970), also addresses the significance of relationality in his book *I and Thou*. Buber draws a distinction between viewing and using the world instrumentally—the I–It experience—and encountering other people, nature and God as I–You. In terms reminiscent of Heidegger, Buber says "The basic word I–You can only be spoken with one's whole being. The basic word I–It can never be spoken with one's whole

being" (Buber 1970, 54). Just as the technological "enframing" is a limited way of understanding the world, so too, according to Buber, is the attitude of regarding others as "its" very limiting as it denies the fundamental relations between people. "[W]here You is said there is no something. You has no borders. Whoever says You does not have something; he has nothing. But he stands in relation" (55). This "world of relation" is apparent with nature, with other people and with God and it is this relation with God that permeates and gives form to all relations. "In every sphere, through everything that becomes present to us, we gaze toward the train of the eternal You; in each we perceive a breath of it; in every You we address the eternal You, in every sphere according to its manner" (57).

The stance of I–It actually diminishes people's capacity to relate fully and truly, according to Buber. "The improvement of the ability to experience and use generally involves a decrease in man's power to relate" (92). He argues that science needs to be grounded in the I–You encounter. "[Science] should do its work faithfully and immerse itself and disappear in that truth of relation which surpasses understanding and embraces what is understandable" (91). Buber warns about the danger of a human culture becoming overly preoccupied with an I–It stance and losing its grounding in relations. "[O]nly as long as [man] himself enters into relation is he free and thus creative. When a culture is no longer centered in a living and continually renewed relational process, it freezes into the It-world ... From that point on, common causality ... grows into an oppressive and crushing doom" (103).

Buber illustrates the primacy of relation by speaking of love. "[L]ove does not cling to an I, as if the You were merely its 'content' or object; it is between I and You ... Love is a cosmic force" (66). The existence of love and our experience of God as love demonstrate relationships that bond God and God's creation. Love involves encountering the whole being of another. Buber suggests this is apparent in a young children reaching out to the people and the world around them, reaching out to the You. "In the beginning is the relation—as the category of being, as readiness, as a form that reaches out to be filled, as a model of the soul; the *a priori* of relation" (78).

Buber's discussion of relation is poetic, not analytical, as if his very language models the relationality of which he speaks. He argues for a recognition that the I–You relation between people, nature and God is fundamental to our being, and is holistic and healthy in nature. Restricting our interaction to an instrumental I–It experience objectifies and alienates us from Creator and creation. Again echoing Heidegger, he says, "[O]nly It can be put in order. Only as things cease to be our You and become our It do they become subject to co-ordination. The You knows no system of co-ordinates" (81). And further, "The It-world hangs together in space and time. The You-world does not hang together

in space and time" (1970, 84). Though critical of the instrumentality of the I–It world, Buber is not arguing that we reject it. But with Heidegger and Borgmann he is suggesting that the technological understanding of reality is a limited one, an understanding that is dangerous if it dominates others. "[W]ithout It a human being cannot live. But whoever lives only with that is not human" (85).

Buber maintains that all relations find their basis in our relationship with God, the eternal You. "For whoever pronounces the word God and really means You, addresses ... the true You of his life that cannot be restricted by any other and to whom he stands in a relationship which includes all others" (124). God is the origin and the context of all relation.

Buber touches on the doctrine of creation when he speaks of the utter dependency we have on God, coupled with complete freedom. Our createdness is bound up with our creativeness. "Yes, in the pure relationship you felt altogether dependent, as you could never possibly feel in any other—and yet also altogether free as never and nowhere else; created—and creative. You no longer felt the one, limited by the other; you felt both without bounds, both at once" (130).

Buber, then, writes about the primacy of the I–You relation that recognises the otherness, the mystery and the integrity of those with whom we relate, whatever the degree of intimacy. He indicates the co-inherence of transcendence and immanence, the holding together of the beyond and the intimate. This insight, shared by Whitehead, is fundamental to natural relationality. An instrumental I–It stance towards others is incomplete, distorted and alienates us from them. It reduces the other to an object to be manipulated and controlled. Both the intimacy and otherness of relationships are damaged as a result, and the holism of relational life is distorted.

3.3 The Trinitarian Doctrine of Creation and Natural Relationality

Whitehead and Buber's insights, while helpful in exploring the nature of relationality, do not address its specifically trinitarian nature. This section will consider the insights of some key contemporary theologians who explore trinitarian relationality. Wolfhart Pannenberg's systematic theology provides the major focus for this section. Many of the other theologians referred to in this section evidence a debt to this influential twentieth century theologian.

3.3.1 The Trinitarian Basis of Relationality

As noted in the survey of the doctrine of creation, mainstream contemporary theologians have embraced a trinitarian understanding of creation. The doctrine of the Trinity reflects the church's attempts to understand the nature of God and God's relationship with the world. It is profoundly relational, speaking as it does of God the three-in one, the communion of the Father, Son and Holy Spirit, the unity and diversity of the being of God.

Before proceeding further, a comment about language is necessary. To speak of the Trinity is difficult for it requires language to explain a divine mystery. Augustine struggled with this mystery and concluded, "But the formula three persons has been coined, not in order to give a complete explanation by means of it, but in order that we might be obliged not to remain silent" (1963, 188). As Peters points out, it is the being of God that is mysterious, not our theology, which should be as clearly articulated as possible, even if limited by human comprehension (1993, 17). The traditional language of Father, Son and Holy Spirit is the most common way in which theologians have described the Trinity. Other writers refer to God, creator, redeemer and sustainer. The language of this thesis incorporates a variety of terminologies according to the author being quoted.

Many of the contemporary debates regarding the trinitarian theology of creation arise out of the contributions of the Cappadocian fathers and Augustine. Studebaker suggests that these debates revolve around what he calls the "threeness-oneness paradigm [which] maintains that the trinitarian traditions and particular theologians within the traditions reduce to an emphasis on either divine unity/substance or plurality/persons" (2003, 268). According to this view, the Eastern Cappadocian fathers emphasise the "threeness", and the Western Augustinian tradition the "oneness", of God. Studebaker believes that this categorisation is an "overgeneralized understanding of the trinitarian traditions" (268). Ormerod also maintains that Augustine, in particular, "has become the whipping boy of much modern Trinitarian theology", identifying Gunton as a main protagonist (2003, 17). He challenges Gunton's claims that Augustine, influenced by Greek thought, produced trinitarian theology that focused on substance, oneness and individualism. It is beyond the scope of this thesis to gauge whose interpretation of Augustine is the more accurate. However, both Gunton and Ormerod agree about the importance of relationality in contemporary theological understandings of the Trinity and it is on this basic insight that I build my argument.

The relations between the persons of the Trinity is known as "perichoresis" and corresponding understandings of the trinitarian God's interaction with and in the world is

known as "divine economy" (Gunton 1993). Perichoresis is a highly speculative concept to address ultimate mysteries. It is from human understandings of the divine economy of God, i.e. the ways in which God's creative, redemptive and sustaining actions are experienced in the world, that perichoresis, the interrelations between the divine persons of the Trinity, is normally inferred. Gunton suggests, however, that the "conceptual mapping" may be reversed (165). That is, perichoresis, the unity and diversity of the Godhead, may inform us about the fundamental relatedness of reality. In this understanding, perichoresis, or relatedness, is itself a "transcendental". In Gunton's words, "If ... the concept of perichoresis is of transcendental status, ... it must enable us ... to explore whether reality is on all levels perichoretic, a dynamism of relatedness. Do we live in a world that can be understood relationally on all its levels?" (165).

Gunton's argument is that a trinitarian understanding of God is that of a being in relation and that a dynamic of relatedness marks God's creative activity in the world. Relationality is therefore, a "transcendental", a quality of the innermost being of God that is the basis of all creation. Creatures and all created things, therefore, cannot exist, nor be understood, in isolation from each other nor from God. As Edwards puts it, "Once the nature of God is understood as relational, then this suggests that the fundamental nature of all reality is relational" (1999, 26). Gunton concludes that relationality is an indispensable concept in the doctrine of creation and flows from the "idea of ideas", a trinitarian concept of God (144).

Pannenberg's theology of creation (1994) shares Gunton's premise on the fundamental character of relationality. Accordingly, the doctrine of the Trinity is the source of insight about the created world's relations to its Creator which he explores in an eschatological context. The eschatological goal of creation, according to Pannenberg, is for all creation to enter fully into the trinitarian life of God and so to know ultimate reconciliation and fellowship with God. In other words, the goal of creation is for the fellowship between God and God's creation, to be full, reconciled and complete (73). This vision of unity and reconciled relations is the basis of Pannenberg's theology of creation. In Pannenberg's words, "the trinitarian life turns outwards, moves out of itself, and becomes the determinative basis of relations between the Creator and the creatures" (5). The dynamic relatedness between the three persons of the Trinity is the origin of, and provides the basis for, the unity in diversity of the whole of creation.

Peters describes Pannenberg's trinitarian theology as a "mutually determining relational view", which holds that "who each person [of the Godhead] is is determined by its relations to the others ... the identity of each is dependent on its relation to the others"

(1993, 136–137). In this understanding of God and the doctrine of creation, it is relationality itself that is constitutive, not the identity of independent persons or creatures.

A trinitarian understanding of the doctrine of creation provides the dynamic of unity with diversity or, in other words, the dynamic of fellowship and otherness. Pannenberg identifies "self-distinction" as the essence of the relationship between God the Father and the Son, with the Holy Spirit binding the fellowship within the Trinity (1994, 83). Taking the creaturely human form of Jesus Christ, the Son freely stands in distinction to God the Father and points to and proclaims the glory and deity of God. The Son remains in fellowship with God the Father through the action of the Spirit yet at the same time embodies the otherness and finitude of the created world. "In his awareness of being a mere human, a creature, in his self-distinction from his father, Jesus recognized the Father as the one God over against himself. In so doing, he gave validity to the independent existence of other creatures alongside himself. This was part of the humility of the recognition and acceptance of creatureliness" (29). The dynamic of the relatedness of creation, in this trinitarian understanding, holds in creative tension distinctiveness and particularity with unity and oneness.

The principle of distinction within unity is demonstrated in the person of Christ. Christ enters the createdness of the world and participates in its distinction from God. The Spirit is the element of fellowship of the created world with its Creator God (83). According to Pannenberg, the principles of distinctiveness and unity within the Trinity are echoed in the distinctiveness and unity in the world, and between God and creation.

Relationality as a transcendental is a theme picked up by other theologians. Moltmann bases his ecological doctrine of creation on trinitarian relations, arguing that a trinitarian understanding of God leads us to understand God's relationship with the world as one of community rather than domination (1985, 2). This relationship springs from the being of God: "Our starting point is that all relationships which are analogous to God reflect the primal, reciprocal indwelling and mutual interpenetration of the trinitarian perichoresis: God in the world and the world in God ... All living things ... live in one another and with one another, from one another and for one another" (17).

Elizabeth Johnson (1992) argues that traditional formulations of the Trinity as Father, Son and Holy Spirit can actually mask the fundamental relatedness appropriate to the dynamic of God's being. The three persons of the Trinity are envisaged as a male hierarchy and the deeper mystery of God the three-in-one is lost. She argues for the "ontological priority of relation in the idea of the triune God ... At the heart of the holy mystery is not

monarchy but community" (Johnson 1992, 216). In speaking of the Trinity, then, it is the "Trinity as pure relationality" rather than the language used to name the persons of the Trinity, which is of central concern. According to Johnson, "The Trinity as pure relationality ... epitomizes the connectedness of all that exists in the universe. Relation encompasses and constitutes the web of reality and, when rightly ordered, forms the matrix for the flourishing of all creatures" (222).

What does this trinitarian understanding of distinction yet unity within and among the persons of the Godhead mean for God's relation to the finite created world? The created world is bound by the finitude and particularities of time, space and diversities of creatures. God transcends all such limitations. Through the loving actions of God, creaturely existence was called into being alongside God and invited to be in fellowship with God. This is the basis of establishment of all relationship and community. While the triune God alone would be a self-sufficient reality, out of the great love of God there is the co-existence alongside God of all created things. The goal of this creation is celebration of this free distinction and diversity in a spirit of fellowship and unity. The freedom of action of all created things and their otherness from God is blessed and affirmed. Yet it is this very freedom and otherness that enables creation to reject God and to separate itself from the goal of creation, and so to turn away from unity and fellowship with God, an action that denies the very relatedness of creation.

Gunton suggests that a trinitarian understanding of creation reveals the dynamic tension between the diversity and unity of the world, a tension which is the basis of a healthy culture. On one hand he criticises the old culture of Christendom for overemphasising the oneness of God and the corresponding association with oppressive political and social structures (1993, 24–25). On the other hand he is critical of today's postmodern culture, which, in rejecting Christendom's universality and embracing concepts of plurality and diversity, has lost the concept of a transcendent unifying God, resulting in a culture of fragmentation. Gunton argues that unity and diversity need to be held together and that it is precisely in the Trinity that we find the creative dynamic of this reality. He explains it this way:

> [A]n account of relationality that gives due weight to both one and many, to both particular and universal, to both otherness and relation, is to be derived from the one place where they can be satisfactorily based, a conception of God who is both one and three, whose being consists in a relationality that derives from the otherness-in-relation of Father, Son and Spirit (7).

Gunton adopts the term "otherness-in-relation" and suggests that the concept is crucial to a trinitarian understanding of God and creation. He uses the term as an alternative to the language of transcendence and immanence, which are often conceived of as opposites or alternatives. "Otherness" and "relation" are more easily "conceived as correlatives rather than rivals" (Gunton 1991, 170–171). The next section gives more specific attention to otherness-in-relation as the fundamental dynamic of creation.

3.3.2 "Otherness-in-relation": The Fundamental Dynamic

The preceding section concluded that the co-inherence of transcendence and immanence underpins a trinitarian understanding of the doctrine of creation. This is explored further here. If relationality is a transcendental and fundamental to the character of creation, then the otherness-in-relation of the triune God is echoed in both the otherness-in-relation of God with God's creation and in the otherness-in-relation within the created world. The way this dynamic works can be uncovered through the traditional distinction between transcendence and immanence.

Debates about the transcendence and immanence of God in the world have focused attention on the way in which God relates to the created world. A trinitarian theology of creation leads us to the conclusion that it is not a matter of choosing between a transcendent God and an immanent God but rather of understanding the co-inherence of transcendence and immanence. Gunton explains this as "otherness-in-relation" (13). Peters talks of God being both "beyond" and "intimate" (1993, 19). Hardy speaks of the other as "unreachable" yet "present" (1980, 88). Powell refers to the "dialectics of identity and difference" (Powell 2003). McFague speaks of "immanental transcendence" and "transcendental immanence" to describe experiencing "the ordinary *as* extraordinary" (1993, 194). Just as the unity and diversity are held together, so too are transcendence and immanence. An emphasis on one at the expense of the other leads to a distorted understanding of God's relationship with the created world. What, then, do we mean by God's transcendence and immanence and how are they to be held together?

The first and fundamental relation between God and the world is that "the world is a product of an act of God" (Pannenberg 1994, 1). The concept of *creatio ex nihilo* is fundamental to the concept of transcendence. The created world as we know it owes its very existence to God. It is contingent. Its very existence depends on the loving action of God calling creation into being. Pannenberg insists that *creatio ex nihilo*—creation out of nothing—is a basic truth. He resists recent suggestions, especially from the school of

process theology, that God's power is purely a persuasive immanence and not a defining transcendence (Pannenberg 1994, 15). Any pre-existing matter, form, influence or power that limits God's absolute freedom is rejected. He explains his insistence on *creatio ex nihilo* this way: "It is essential for the Christian understanding of God's freedom in his activity as Creator that he did not have to create the world out of some inner necessity of his own nature. If he did, he would be dependent in his very essence on the existence of the world" (19).

This absolute contingency of all created things has implications for our self-understanding. It requires a humility, an awareness and acknowledgement of createdness, an awe for the miracle of existence and is a reminder of our fundamental dependency on God the Creator. The world is ultimately not under humanity's absolute knowledge and control. God did not need to create the world, or as Pannenberg explains, "[E]ven if the world had not come into existence, nothing would have been lacking in the deity of God" (9). A trinitarian understanding of God holds that the relationships among the persons of the Trinity are entirely sufficient and complete expressions of divine activity. "[T]he divine life is a self-enclosed circle, which needs no other outside itself" (29). Yet, out of God's complete freedom, God chose to be in relation with creatures and to draw them into fellowship.

Transcendence implies a distinction between God and God's creatures. God is not created and creatures are not God. Pannenberg's trinitarian theology identifies the Son with the principle of distinction and otherness from God as expressed through the Son taking on human form. It is this same principle, distinction and otherness, which defines what it is to be a creature. "The creation of creatures distinct from God rests on the self-distinction of the eternal Son" (63). The world of creatures is known by its plurality of beings and forms distinct from each other and from God, yet held together in a unity of inter-relatedness, and by its finitude and its inhabiting of time and space. As Gunton says, "[O]therness is a concept important for finite relationships" as well as our relationship with God (1991, 171). "To relate rightly to other people is to intend them in their otherness and particularity, to allow them room to be themselves" (172). Hardy calls this "the unreachable height" of the other (1980, 87).

The distinction of created things from each other and from God does not infer separation and autonomy, though this may be a common ambition held by human beings. Just as the Son is distinct from, yet in unity and fellowship with, the Father, so too is this the goal and destiny of all created things. The created order, therefore, is called to recognise and exercise loving and respectful relationships within its own order. "[O]therness without relation is

as destructive as relation without otherness" (Gunton 1991, 172). This has implications for the social and political life of human societies and for the ecological wellbeing of all creation.

The world's contingency and utter dependency upon God, its otherness and distinctiveness from God, its createdness—these are all implications of God's transcendence. God cannot be reduced or contained by the world. However, God's relationship in the world is not a remote one. Just as love and freedom typify God's establishment of relationship with all creation, so too do they typify God's continuing care and faithfulness of creation (Pannenberg 1994, 19). God is with and in the world, and so is immanent as well as transcendent.

According to Hefner, the very meaning and purposes of human life can be found in our relatedness to the natural processes from which we have emerged and within which we find our existence (1993, 264). He argues strongly that God's actions and purposes be understood through natural processes including human activity and for a God who is immanent in natural processes. In fact, he maintains that God and God's will cannot be known except through the medium of natural processes. It is through these processes that all created things interact and know each other (265). God's creation finds its ongoing expression in the biocultural processes of the world. While not going as far as saying that meaning and purpose is preordained by the shape of the world and the nature of its relationships, Hefner does argue for a correlation between natural structures and relations on the one hand, and required human responses and formation of values on the other. In his words, "[I]f we have been created in the form of certain structures and processes, then God must will those structures and processes to be, in some sense at least, fulfilled. This constitutes a version of natural law theology. How this functioning and fulfilment are carried out, however, is subject to human freedom, which includes the human search for what fulfilment means in each instance" (40). In other words, structures and relations in the world can give us hints of God's purposes.

Pannenberg suggests that the natural laws of the universe on which science builds its theories are indicators of God's care and faithfulness to the created world, *creatio continuata*. This is not limited to simple maintenance of given patterns and structures, in a mechanistic fashion. Such a view prevailed when the scientific concept of inertia took the imagination of theologians, dismissing any need for the ongoing activity of God (Pannenberg 1993, 30). Pannenberg draws on an another analogy from physics, force field theory, to describe the way in which God, through the Spirit, is continuously and universally active in the world (40). This vision, he suggests, is consistent with a divine Creator from

whom all existence owes its origin and its continuity and whose influence permeates all. The Spirit embraces like a force field the future of possibility towards the eschatological consummation of creation. Campbell argues that such an ontology based on continuous action rather than fundamental particles provides a stronger basis for trinitarian theology for it helps us to understand the being God as "relational and reflexive" (2003, 199). God's continuing creative activity allows for novelty to break into the world.

Natural laws are one expression of unifying relationships holding together a multiplicity of forms. Creation is governed by natural laws, which, while being an expression of God's immanence and ongoing faithfulness in creation, are also the basis of a predictability and stability that enables human science and technology to proceed (Pannenberg 1994, 72). The very freedom and love of God bestowed upon the world through the provision of natural laws also gives creatures the opportunity to separate themselves from that love through the misuse of the natural world and the laws that sustain it.

Pannenberg argues for "the unity of contingency and continuity in the creative activity of God" as an indication of God's faithfulness and love (1993, 37). This is the unity of *creatio ex nihilo* and *creatio continuata*. Pannenberg warns against a simplistic time-bound understanding of "before and after creation" in conceiving of this unity. *Creatio ex nihilo* is beyond time and embraces the creation of time and space itself. *Creatio continuata*, however, is located in time and history and refers to God's care and preservation of all created things through natural laws. To make a distinction between *creatio ex nihilo* and *creatio continuata* is a very creaturely thing to do as the concept and experience of a beginning is bound up with the experience of createdness. All creative actions of God are embraced in a unity that both transcends time and enters history (35ff). From Pannenberg's vision, we can conclude that the relationality of creation involves the fundamental contingency of all that is created upon God, and also the ongoing faithfulness of God who remains involved in the world through its natural processes and the work of the Spirit.

The transcendence of God implies the createdness, the contingency, of all that is. Every thing, creature and person owes its existence to the actions of a transcendent God in calling the world and its creatures into being. The immanence of God is experienced in the very relations that bind and govern the world in all its ecological interdependency and in the power of new possibilities. While God has accorded creation its own freedom and distinctiveness, God's loving faithfulness is apparent in the everyday miracles of healing and new life as expressed through natural processes. A trinitarian doctrine of creation requires us to hold together transcendence and immanence, not only in our understanding

of our relationship with God, but also in the otherness-in-relation that constitutes our relationships with other people and the rest of creation. This has implications for the role of human beings in the world and for our self understanding as the *imago dei*.

3.3.3 Imago Dei *as Relational Being: The Created Co-creator*

This section considers the implications of the otherness-in-relation of creation for the specific vocation of human beings as the *imago dei*, i.e. a relational understanding of the *imago dei*. This leads to the concept of human beings as "created co-creator" and to the conclusion that the creativeness of human beings needs to be understood in the context of our createdness (Hefner 1993).

There are several theological traditions regarding the *imago dei*. One tradition sees human beings as being like God in the rational sense—our mind mirrors God's. Another sees human beings as being like God in the moral sense—we share in God's dominion over nature. The third sees human beings' participation in God's capacity for relationship—we live in relationship. The fourth sees human beings as being like God in the creative sense—we are partners with God in ongoing creative processes (Peters 2000, 153–155). As discussed earlier in this chapter, understandings of the *imago dei* that are limited to the rational and the moral likeness of human beings with God are associated with the anthropocentric, selfish and exploitative behaviour of humankind (White 1967). By virtue of the human capacities for reason and judgment, human beings tend to regard themselves as separate from the rest of creation. This attitude leads to selfish and careless behaviour. However the nexus between a special role for human beings and destructive behaviour is not a necessary one but flows from an inadequate understanding of the *imago dei*. A relational understanding of the *imago dei*, while affirming that human beings do have a special role in God's world, implies that this role is not to exploit or control others but instead to nurture loving and life-giving relationships in praise of God.

Gunton argues that the primary quality of the *imago dei* is relational, that "to be in the image of God is to be placed in a dynamic of relationships: first of all with other human beings and second with the created order" (1992, 102). He challenges the understanding of the *imago dei* that locates it in the human capacity for reason and maintains that this understanding arose from two influences: first, a dualistic division of mind from body, with the human mind being "the godlike part of the person", and, second, a comparison with the rest of creation, with human beings set apart from other creatures by virtue of our reasoning capacities (1991, 104). This overemphasis on human reason contributes to

a lack of appreciation of humankind's intrinsic relationships with the world. "The human mind, by virtue of its rationality, provides evidence both of a kind of image of God and at the same time a criterion of radical discontinuity from the rest of creation" (Gunton 1991, 105). This in turn leads to two consequences, first an individualistic understanding of the *imago dei*—with an emphasis on the mind of the person—and second a lack of ecological sensitivity. A trinitarian and therefore relational understanding, however, challenges both of these features, the dualism and the discontinuity. It emphasises, instead, the importance of human beings' relatedness with God, with each other, and with the rest of creation.

A relational understanding of the *imago dei* does not require human beings to deny that we have a special and powerful God-given responsibility in the world. However it does require that our roles and responsibilites be exercised in a way that respects the interrelatedness and the otherness of God and of creation. Pannenberg is among those theologians who insist that human beings hold a special role and place in creation. He argues that "the relation of creatures to the Creator finds its supreme and final realization in humanity" and bases his argument on the significance of the incarnation, on God's identifying with the created world by the Son's taking human form (1994, 175). Hence humanity, through the identification of Jesus Christ with the world, holds particular responsibility for the care and nurture of that world (202ff).

The nurturing of respectful and loving relationships requires us to be aware of our createdness as well as our creativeness. To forget or deny our createdness is to distort our relationship with God and this leads us to the danger of idolatry, of worshipping the creature rather than the creator (Gunton 1991, 104). An appreciation of the otherness-in-relation of creation helps human beings to avoid such idolatrous attitudes. It reminds us of our createdness and also of our relationship with other people and with other creatures. Our special role as *imago dei* is to be carried out in a spirit of humility in the knowledge of our contingency and finitude, and also in a spirit of altruistic service in the knowledge of our vocation to cooperate with God's purposes for creation. For human beings to live out our God-given responsibility and destiny we need to accept, rather than deny, our mortal finitude and not claim all creative powers as our own (Pannenberg 1994, 230).

When we exercise our freedom in an arrogant or selfish matter, we turn our backs on our special destiny by alienating ourselves from God, by denying our createdness, our contingency and our finitude. Indeed, the createdness of human beings is just as important as our creativity as a basis for ethics and behaviour (Schwöbel 1997, 170). Awareness of createdness can remind us of our basic dependence on God and our interrelatedness with others. Pannenberg sums it up this way: "Thus the charge that we are to have dominion

over other creatures takes a new turn. We can rightly take up this charge as God's vicegerents in his rule of creation only by accepting our own finitude ... Acceptance of our own finitude must also mean giving to all other creatures the respect that is their due within the limits of their own finitude" (1994, 231).

A relational understanding of the *imago dei* is developed by Philip Hefner (1993) in his theory of human beings as the "created co-creator". In insisting that the creative talents of human beings are inextricably linked to our biological and cultural relationships with the world and to our profound dependency upon God, Hefner elaborates a relational view of what it means to be truly human.

A central element of Hefner's theory is that the "human being is created by God to be a co-creator in the creation which God has brought into being and for which God has purposes" (264). The key clause is "created ... to be a co-creator" for here the createdness of human beings, our very dependency on God, is held together with our creativeness, our capacity and responsibility to make constructive and free contributions to God's world. The dynamism in the theory is the way in which Hefner does indeed hold these two elements together and insists that a dualism between the two is not acceptable. He does this by arguing that the very creativeness of human beings is itself created by the action of God through natural evolutionary processes. This creativeness is located in the freedom found in human beings and expressed primarily in human culture.

At first glance, the term "created co-creator' might appear problematic. As Hefner himself puts it: "It is the co that causes misgivings to theologians, because it implies that humans are somehow on the same level as God. For the scientists, who are deeply impressed with the awesomeness of nature, it seems simply absurd to suggest that human beings are more than tiny actors on the stage" (236). To some degree, these are valid concerns because the term "co-creator", on its own, can imply equality with God (and so concern theologians) or an anthropocentric arrogance (and so concern biologists). To that extent, the term is not transparent and it is not surprising that critics have tried to replace it with an easier one. Arthur Peacocke, in the foreword to Hefner's book, suggests "co-creating creatures" (1993a, xi). Others suggest "creative creatures" (Hefner 1993, 39). However Hefner defends his term, and with justification, because at the heart of it is the concept of humankind's creativity being itself created. It is not that God's human creatures decide to be creative. The createdness of human beings qualifies, describes and sets the context for our freedom, our creativity. To speak of "creative creatures", however, does not speak of the origin and purpose of our creativeness in the same way. Hefner states, "I find neither this

term nor other proposed alternatives to be adequate for conceptualizing the dual nature of the human being—a creature who has been brought into existence by nature's processes, and who has been given by that nature the role of free co-creator within those same processes" (1993, 39). The power of Hefner's term lies in the creative interplay between the two words "created" and "co-creator". This brings a dynamism that can be found in the theory's reliance on relationality and the interlinking of createdness with creativeness. The term "co-creator" used on its own loses this dynamic tension and is more easily associated with anthropocentrism and human arrogance (Ng 2003).

Hefner's theory of the created co-creator is stated thus: "Human beings are God's created co-creators whose purpose is to be the agency, acting in freedom, to birth the future that is most wholesome for the nature that has birthed us—the nature that is not only our genetic heritage, but also the entire human community and the evolutionary and ecological reality in which and to which we belong. Exercising this agency is said to be God's will for humans" (1993, 264). This theory grounds human beings very much within the natural order yet with distinct and unavoidable talents and responsibilities. Peters explains it this way,

> To say we are created reminds us that we are dependent creatures. We depend for our very existence on our cosmic and biological prehistory. Yet we are also creators ... We use our personal freedom and cultural power to alter the course of historical events. We may even find ourselves altering the course of evolutionary events. Theologically speaking, we participate with God in the ongoing creative advance (Peters 2000, 141).

The theory disallows any separation of human beings from nature while at the same time identifying a special role for human beings commensurate with our natural God-given capabilities. The inseparability of human freedom and creativeness from our contingency and our createdness is at the crux of this theory. This inseparability gives form to the relatedness that informs our vocation as *imago dei.*

The createdness of human beings not only reminds us of our utter dependency on God, it also means that, though we may try, we cannot stand above or apart from the world that has given birth to us. Human beings have emerged from, and remain part of, a biocultural evolutionary process. We may have a special role and place, but we cannot claim credit for this role for it is of God's will and purpose, not ours. Our very creativeness is born of our createdness. In this understanding of being created, we find our meaning and decide our actions in our relatedness to God and to the world. Hefner puts it this way:

> For humans to be created means that they also exist within, and for the sake of, the matrix of creation in which they have emerged. Homo sapiens did not emerge to be conquistador, dominating and pillaging as the opportunity arose. Rather, as creature, the human serves the process of the creator, and all of the possibilities, activities, and achievements of the creature are to be referred to the created order and the purposes with which it has been endowed (1993, 36).

How, then, are we to understand the creativeness of human beings and our role as co-creators? "Co-ness" does not refer to human beings claiming an equality with God (36). Rather "co-ness" refers to special qualities specific to human beings that manifest the freedom granted by God to the whole creation. God graciously accords to creation a freedom that finds its clearest and strongest expression in human beings. This freedom comes from God and is of God. It may be understood as the otherness, the self-distinction, of which Pannenberg speaks. In this sense, human beings are co-creators, called to exercise our talents to work freely towards the fulfilment of God's creation, the full realisation of loving community. This freedom is most clearly expressed through our culture and is described by the ability and necessity of human beings to make and act on decisions and construct stories in ways that other creatures are not able to do. The special role and place for human beings in the created order is defined by our capacity to discern, express and co-operate with God's purpose for creation (265).

Hefner describes this freedom as "a condition of existence, one in which humans unavoidably face the necessity both of making decisions and of constructing the stories that contextualise and hence justify those decisions" (1993, 97–98). This is what distinguishes humans from other animals—not only the ability to make decisions and then make sense of those decisions—but also the necessity for humans to do so (Horne 1997, 870).

Indeed, human beings have so shaped the world through our technological civilisation that life in that civilisation depends on the responsible and free decisions and actions of human beings (Hefner 1993, 250). It is in our ability to receive, interpret and pass on information and learned behaviour through our culture that humans are distinct from other creatures. This ability has arisen from evolutionary processes and provides us with a means of working for the wellbeing of creation as well as our own survival. In this sense evolution is "biocultural" (145).

Freedom, then, is of God and is manifested through natural processes. Hefner frames this principle in his second "core element" this way: "The conditioning matrix that has produced the human being—the evolutionary process—is God's process of bringing into be-

ing a creature who represents the creation's zone of freedom and who therefore is crucial for the emergence of a free creation" (1993, 265). Freedom, originating in God, has arisen from nature and nature in turn depends on freedom for its fulfilment, or in Hefner's words "freedom is nature's way of stretching itself towards newness" (99). Freedom is an integral part of biocultural evolutionary processes but it is God who, through God's own freedom, grants freedom to creation. Human beings, as bearers of this freedom, carry the image of God and yet are inextricably connected to the natural world in which we live.

Human freedom and hence human creativity are firmly grounded in our relations with God and God's world. To be human is to carry both a genetic and a cultural heritage and relation with the world, to bear a "symbiosis of genes and culture" both of which find their origins in natural processes (265). However, there is no neat association between "created and genetic" and "co-creator and cultural". The createdness of humans includes our genetic background, our cultural heritage and our community base, i.e. all the relations past and present that mould and condition us. Conversely, freedom is not restricted to the cultural realm. The process of evolution itself has elements of freedom, change and novelty. The freedom of the human being has a deterministic origin anchored as it is to an evolutionary understanding of life. Humans did not become free through some supernatural event. This capacity for freedom is part of our createdness, a capacity that has been given to us through the process of evolution. So even in our freedom and distinctiveness from other creatures, we cannot escape our contingency and relatedness with God and the rest of God's creation. The element of freedom is itself natural and, as with all aspects of creation, derives from God. In this light, the dualism of the "nature versus nurture" debate dissolves (36). While human beings are conditioned by both genetic and cultural influences, it is not a battle between the two. Both our genetic and our cultural backgrounds have elements of determinism and freedom and both interact with each other. According to this view, the roots of human freedom and therefore culture, values and morality are to be found in evolutionary processes and in networks of relatedness.

What, then, are the implications of the vocation of human beings as created co-creator for our technological culture? The challenge is for our creativeness to be undergirded by a strong awareness of our createdness. Only then will the love and freedom of our human vocation be expressed and nurtured. This involves human beings in community engaging with the world around us in a way that acknowledges the contingency and finitude of creation and celebrates the freedom to participate in the fulfilment of God's purposes.

Hefner argues that the purpose of human beings is "to birth the future that is most wholesome for the nature that has birthed us" (264). For human beings to take seriously both

our inescapable relatedness to God and the world means to honour and nurture that relatedness by caring for the "wholesomeness" or, as the World Council of Churches calls it, the "integrity" of God's creation (Niles 1989). Another of Hefner's hypotheses, the third, is built on this principle: "A concept of wholesomeness is both unavoidable and useful as the criterion governing the behaviour of human beings within their natural ambience, as they consider what their contribution to nature should be" (1993, 265). This is our human vocation—to recognise and acknowledge God's creative action in the world and to freely co-operate with God's purposes by working in harmony with processes that nurture the wholesomeness of creation.

Hefner asserts without much elaboration that the world is in crisis today because of the failure of human beings to live out this vocation. Our technological culture is not living in a healthy symbiosis with the earth's biological and other human cultural systems. In short, the freedom inherent in human beings and our culture is being misused because it is not in concert with God's purposes for creation.

The nature of this crisis is rooted in a disregard for the relatedness of all things and in the failure of human beings to work for the wholesomeness of those relations. It is the very freedom of human beings that accords us the capacity to act contrary to our own God-given purpose and vocation, to alienate ourselves from our relationship with God. To be alienated from others is to lose touch with "the way things really are". This expression "the way things really are" is one which Hefner uses to refer to the ultimate reality that is found in God and in the knowledge of God. He suggests original sin is to be found in the vulnerability which accompanies the risks of exercising freedom and in this sense "[t]he ground of human freedom is also the source of human vulnerability" (240).

Hefner's diagnosis is, "There is no greater obstacle to fulfilling the destiny or function for which our teleonomy prepares us than to be committed to that which is genuinely disharmonious with the way things really are" (240) and, further, "Humility is at the heart of human being, not arrogance. To suppose that the purpose of this creature is something other than to be working in the service of the natural processes for the purposes of *what really is*, is to misunderstand the world and ourselves in it" (241).

The vocation of humankind as *imago dei*, then, is to honour, nurture and work for the fulfilment of God's creation and the wellbeing of its relationships. Relational life is so fundamental to this vocation that to reject or deny the existence of basic relationships is to separate oneself from God, the source of life itself. This denial of relatedness is, according to Pannenberg, the source of sin and the path to death. Death is not the punishment

for sin, per se, but rather the natural consequence of separation from God, the source of all creation and life (Pannenberg 1994, 270). More than that, the denial of relationship with God has the consequence of souring relationships between human beings and the rest of creation. "The conflict of sinners with creation, with other people, and even with themselves follows from the nature of sin as a breaking of a relationship with God" (270). Death is, of course, a natural consequence of the finitude of all living organisms. In this sense, it seems too much to claim that human beings can be held responsible for their own natural limitations. Pannenberg argues that it is human beings' fear and resistence of their own finitude, their own limitations, their own deaths, which in itself leaves death as the only conclusion. "The link [between sin and death] is rooted in sin to the extent that only the nonacceptance of our own finitude makes the inescapable end of finite existence a manifestation of the power of death that threatens us with nothingness" (273). Seeking life by our own power and in denial of God cuts us off from God, the only source of life. By accepting our finitude and acknowledging that the source of our life and being is with God gives us the freedom to anticipate the eschatological fellowship with the triune God that transcends temporality and mortal death (271–272).

Sin, then, can be understood as humankind's assuming for ourselves the self-identity of all-knowing, all-powerful beings. This attitude breeds pride, selfishness and arrogance, attitudes that have disastrous effects on humanity's relationship with the rest of creation. Gunton describes such attitudes as idolatrous and concludes that "the mechanisation or technologisation of reality is the fruit of the idolatrous worship of human capacity" (1992, 106). Yet striving to fulfil ourselves entirely this way is bound to fail for two reasons: either because we strive to render God and eternity irrelevant and so depend entirely on the finitude of existence, or we strive to grasp eternity for ourselves by denying our very createdness (Pannenberg 1994, 248). Either way we flounder through separation from the Creator, the real and ultimate source of life. The result is "a frenzy that will finally spoil life, narrow the actual field of freedom of decision, and not infrequently end in death" (Pannenberg 1994, 265). To accept life as a gift from God gives us the freedom to live in thankfulness and confidence of God's ongoing care for creation. To deny the giftedness of life is to trap ourselves in the boundaries of anxiety about our own limitations (251).

The miracle of God's continuing faithfulness is that, despite the sinfulness of humankind in seeking to separate ourselves from the source of creation, God "constantly rescues his creatures from the entanglement of self-centredness ... [and] ... we ... again know the original joy in life ..." (274–275). The identification of God with creation through the life, death and resurrection of Jesus Christ invites us back into relationship with God. God's creation continues through the power the Spirit who enables healing and new possibilities.

How are we to know "the way things really are"? What is the source of human knowledge and discernment? Hefner maintains that religious knowledge and practice—or as he describes it, "myth and ritual"—is an important and largely neglected source of information in today's technological world. Myth, which he defines as "a story of ultimate concern" has the capacity to convey insight from generation to generation about the way things really are (1993, 21). He describes ritual as "those sets of symbolic actions that portray the behaviors that are called for if we are to live in harmony with the depictions set forth in our myths" (21). For Hefner, the doctrine of the Trinity is an important example of a "myth", which conveys crucial insights into the nature of God and God's action, insights into "the way things really are". In his words, "[T]he Trinity represents an authentic attempt to engage in a world-view construction on the basis of Christian faith. It presents an all-encompassing picture of *what really is*, and no sector of nature is distanced from God" (234). Ritual provides a way for human beings to respond by modelling our commitment to God's will and to express our discernment of, and our commitment to, "the way things really are", including the dynamic relatedness of creation. The Eucharist is an example of such a ritual whereby the relatedness of God and all God's creatures is acknowledged, celebrated and reaffirmed. Praxis involves the acting out of these insights in our behaviour and culture formation. The myth–ritual–praxis dynamic is at the heart of healthy and constructive human cultural formation (156).

Hefner rejects the dualism between "doing" and "being". To be a created co-creator is to be faithful to the vocation of who we are and what we do. "If we are made with purposes and functions, then to be caught up in those functions is to be what we were created to be" (242). It is in Christ that we find the paradigm of what it is to be human, what it means to live out the vocation, the function, created for us. Hefner identifies two main ways in which the life of Christ indicates this vocation. First, our life, as Christ's, is to be centred on God, on "what really is". Second, our life is to be self-sacrificial, lived for the benefit of others in a spirit of altruism and love. These two characteristics encapsulate what it means to be a created co-creator—to acknowledge and live according to our fundamental relationship to God, and to live according to the purpose given to us in creation, that is, to live for the benefit of God's world to which we are inextricably related.

Hefner's notion of the created co-creator is a helpful way of elaborating the relationality of the *imago dei* in a language and form intelligible to scientific culture. He argues that human beings do have a distinctiveness and a special role in creation and he grounds this in our deep inter-relation with both God and the created world. Our creativeness, which is grounded in our freedom and personhood, is inextricable from our createdness. In this way, relationality is a transcendental. It is of God and comes from God and we are called

to respect and nurture this relatedness embedded in the dynamic of creation and human creativity.

3.4 Conclusion

What, then, are the insights to be gathered from this chapter that may inform a theology of technology?

The doctrine of creation is most adequately understood from a trinitarian perspective. This emphasises the importance of relationality in our understanding of the nature of God and God's creation. Relationality is a transcendental, a fundamental quality of God's creation that echoes the being of the triune God.

We experience this relationality in the otherness-in-relation of God and creation, the co-inherence of transcendence and immanence. The vocation of human beings is shaped by this otherness-in-relation. Our creative capacities need to be exercised with awareness of our createdness and while respecting God's creation. A trinitarian understanding of the doctrine of creation, therefore, leads to a relational understanding of the *imago dei*.

One aspect of the fundamental relationality of human beings is found in our inseparability from the rest of nature. Even that which makes us distinct—our freedom—has emerged from, and can be explained in terms of, natural processes. Human beings are inextricably related to all that is created and to God. By our very nature, we are both conditioned and free. This should be the grounds for both humility and responsibility in our actions. By our very contingency, we cannot claim credit for our talents and capabilities. Rather, we are called to exercise wisdom in discernment and action as we exercise our freedom in a way which recognises and respects our inter-relatedness.

Through the lens of trinitarian theology and the theory of the created co-creator, we can see how relationality is fundamental to being human. We are called to be persons in relation, with God, with each other and with the world around us. While we are an intrinsic and interrelated part of the natural world, we also have inescapable roles and responsibilities. Human culture and freedom gives us the capacity and also the responsibility to shape the world around us including the very biocultural processes that have given rise to us and our world. This responsibility entails being committed to, and working for, what Hefner calls the "wholesomeness" of the world around us, the health of God's creation in all its interrelatedness. This requires an altruism on the part of human beings, a virtue that finds

its roots in the divine goodness of creation and finds expression in the love command and Christ-like self-sacrifice.

Problems in technological culture have arisen precisely because human decision making and actions have failed to care for the wholesomeness of nature of which we are a part. Inasmuch as human beings do not respect or care for the health of ecosystems and the interdependency of God's creatures, we do not fulfil our vocation as created co-creators. Technology, which is part of human culture, must work harmoniously with the world's natural systems if it is to serve this vocation. Otherwise we do not take relational life into account. The future of this planet is now dependent on human culture and technological culture in particular. The future of the world and its systems is undetermined and is dependent upon the actions and decisions of humankind. The freedom of creation is concentrated most powerfully and poignantly in human beings, who have the choice whether or not to participate in God's fulfilment of creation. This means that the future is open and unpredictable. The path to eschatological fulfilment for God's creation is an uncharted one and, while God "is able to provide new possibilities and new futures" along the way, the freedom is given to creation, and especially to humankind, to shape the future (Hefner 1993, 47).

A crisis in technological culture has arisen as we have become alienated, not only from the world of which we are a part, but also from our very nature as human beings, as the *imago dei*. We do not understand ourselves as created co-creators. Either we deny our createdness and our ultimate dependency on God, and so lapse into arrogance, or we relinquish our freedom as co-creators and lapse into an irresponsible apathy of disengagement from the world and community at all levels, whereby we act out of isolated selfishness. This leads to an instrumentalist attitude that "the world is there to do with exactly as we choose" (Gunton 1993, 14). As Gunton maintains, "we shall not understand our place in the world unless we face up to the way in which we are internally related to the rest of the world" (15).

A trinitarian understanding of creation can help us to understand the world, ourselves and God as we really are, to connect again with reality. Through a renewed understanding of the relatedness of all things in creation and through enacting this understanding in daily life, human beings and our technology may serve the wholeness of creation and work to fulfil God's purposes. For human beings to fulfil our God-given vocation, we need to strengthen our self-understanding as created co-creators in relation to God and the world and our actions need to honour and nurture creation's dynamic of relatedness.

[Chapter 4]

Towards a Theology of Technology: A Relational Approach

4.1 Introduction

Chapter 2 argued that contemporary technological culture is characterised by attitudes of instrumentalism in the way we use and exploit God's creation and idolatry in the way we consider our technological capabilities. These attitudes have the effect of distorting our relationships with each other, with the world around us and with God. The technological blindness to, and distortion of, that relational life hinders us from understanding our creativeness in other ways. It is the outcome of a metaphysics that has shaped our way of being with God and the world.

Chapter 3 considered the trinitarian doctrine of creation and identified relationality as a significant theme. This relationality may be understood as a transcendental. That is, the otherness-in-relation of the triune God finds an echo in the otherness-in-relation of creation. This has implications for our self-understanding and responsibilities as the *imago dei*. Our vocation is to live as the created co-creator, fully aware of our createdness and of our relatedness to God and other creatures.

This chapter brings the insights from these previous two chapters into dialogue with each other. The critiques of technological culture are thus set within the context of the theology of creation. It is from this interaction of the philosophy of technology with the theology of creation that a theology of technology that gives attention to the nature and quality of relational life develops. This in turn suggests some implications for natural theology.

What is the basis and nature of this dialogue between the philosophy of technology and the theology of creation? Where is the common ground to be found that provides the

subject matter and vocabulary for this discussion? From the consideration of technological culture, fundamental questions arose about human beings' relationships with each other, the world and God. That is, our understanding of technology was expanded beyond one of tools and means to one that embraces human self-understanding. Chapter 3 began to address these theological questions about divine presence and action in the world and the vocation of human beings in God's creation. As Borgmann puts its, the philosophy of technology stimulates us to "reflect on questions of what really and finally matters, and such questions may open one to matters of ultimate concern" (1984a, 305).

This chapter begins with a theological critique of contemporary technological culture and then explores theological understandings of human creativity. In other words, the chapter begins by distilling the critical insights that a trinitarian theology of creation has in identifying the weaknesses of technological culture. It continues by suggesting how human creativity and culture might be strengthened by giving greater attention to relational life.

A theological critique of technology has the effect of placing technology and Christianity in an adversarial stance to each other. Borgmann argues that it is necessary "to see Christianity and technology as adversaries—not simply opponents, but as forces that confront one another at the deepest level ... It is the task of a theology of technology to try to grasp the relationship of Christianity and technology both profoundly and fruitfully ... Fundamental theology today must be a theology of technology, the successor to medieval natural theology" (305). Borgmann distinguishes his view from the Protestant tradition that "thinks of Christ and his message as wholly other than the world and its ways ... [and so exposes] technology merely as other than and opposed to Christianity" (306). Rather, he argues that technology has become so much the dominant way of understanding reality that one must first examine and understand technology itself so as to discern the Christian message in a fresh way:

> [B]y virtue of its reflective passing through of technology, the theology of technology may also be as much a transformation as a continuation of traditional fundamental theology. The latter is clearly the offspring of Platonic and Aristotelian metaphysics. Given Martin Heidegger's interpretation of technology as the final phase of metaphysics, the passage through technology should let us see the ways in which metaphysics has informed Christianity. This does not mean that Christianity allowed itself to be metaphysically corrupted in late Antiquity and in the Middle Ages. All it means is that metaphysics has come to an end in technology and that we are called to another beginning (307).

Borgmann's words provide a catalyst for several lines of enquiry in this chapter. First, the Christian doctrine of creation provides a lens through which to interpret basic flaws or dangers in contemporary technological culture as identified by philosophers of technology. This is a basis for a theological critique of technology. Second, this theological critique has implications for our understanding of fundamental theology. In particular, it reveals that the same metaphysics that finds its conclusion in technology has profoundly influenced traditional natural theology i.e.understandings of God's presence and action in creation. Third, the positive construction of a theology of technology based on trinitarian relationality provides one way of transforming theological understandings of the *imago dei*, the vocation of humankind in creation.

This chapter, therefore, develops several interrelated themes. First, it addresses theologically the cultural dynamic of contemporary technology and the way in which it disregards and distorts relational life. Second, it elaborates a theology of technology informed by the concept of relationality as found in the trinitarian doctrine of creation. Third it suggests some implications for natural theology. The chapter concludes that the neglect of natural theology, i.e. the lack of attention given to God's presence and action in the world beyond that of a traditional understanding of revelation, has led to a lack of awareness of creation's dynamic of relatedness. It has contributed to an anthropocentric view of the world, of the world being simply a resource for human use. A theology of technology drawing from the doctrine of creation restores an appreciation of God's loving action in all of creation and the interconnectedness of all things. This theology of technology leads us to posit that natural theology, which has long been out of favour in theological circles, needs to be revisited in the light of a theology of technology.

So, while this chapter begins with a consideration of technological culture and the trinitarian doctrine of creation in opposition, the fruit of this enquiry should not lead to a perpetuation of an adversarial stance between technology and Christianity. Rather it should lead to fresh insights into how human culture, including its technological creativity, may be moulded and directed by a new awareness of the importance of recognising, nurturing and honouring the relatedness of reality. The result should not be a theology that places technology and Christianity in opposition but one that indicates how humankind might nurture an appreciation of God's creative action in and through the world through the exercise of our vocation as created co-creators. This is the basis of a theology of technology based on trinitarian relationality.

4.2 A Theological Critique of Technological Culture

This section will elaborate a theological critique of technological culture, a critique based on relationality, a thematic thread in the trinitarian doctrine of creation. It draws on the insights of writers considered in Chapter 2. Heidegger, Ellul, Schumacher, Winner, Borgmann and others, while differing in their views, are united in finding fault with contemporary technology. Their critiques support the argument that technological culture is characterised by a disregard and distortion of the relatedness of human beings with the natural world, human beings with each other and human beings with God. This distortion is manifested in an instrumentalism which pervades technological culture and also by human beings' idolatrous attitudes to our own technological capabilities. These attitudes shape a technological culture which is characterised by our using the world as a resource to be exploited so as to be free of the limitations and sufferings that accompany human life. Chapter 2 discussed how traditional metaphysics contributes to moulding technological culture. This metaphysics has had the effect of displacing God from our understanding of reality.

This section discusses ways in which a trinitarian understanding of creation challenges technological culture and its disregard for relational life. First, it considers how a trinitarian doctrine of creation provides a critique of the instrumentalism of technological culture. Second, it considers how the co-inherence of transcendence and immanence of God, discussed in Chapter 3, challenges the idolatry of technological culture. In this way, major themes in Chapters 2 and 3 are brought into direct conversation with each other. This leads to the next section which suggests a positive construction of a theology of technology based on the vocation of humankind as the *imago dei* called to honour and nurture relational life.

4.2.1 The Trinity and Instrumentalism

Technological culture is profoundly instrumental. It rests on a world-view of understanding, organising and using the world as a resource. A trinitarian doctrine of creation is profoundly relational. It speaks of the otherness-in-relation of the triune God and of the relatedness of God with the created world in a way that is reverential rather than instrumental. In developing a theology of technology, it is fruitful to explore this disjunction between the instrumentality of technological culture and creation's dynamic of related-

ness. It will lead to the question: how might the way in which human beings deal with the world and stand before God change so as to respect more carefully this relational life?

An instrumentalist attitude towards the world results in a distancing, a disengagement from that world, which in turn develops into alienation (Gunton 1993, 13–14). The self-conscious objectivity of scientific research and technological manipulation is based on the treatment of others as objects. In contrast, a trinitarian understanding of the doctrine of creation speaks of the relatatedness of creation, of "being in communion" (Gunton 1991, 10). As discussed in Chapter 3, there is a growing consensus among contemporary theologians that relationality is key to understanding a trinitarian doctrine of creation. Relationality is being embraced as an alternative to the "metaphysics of substance". This is in reaction to a "conception of the divine threeness which owes more to neoplatonic philosophy than to triune economy [leading to] ... a view of an unknown substance *supporting* the three persons rather than being *constituted* by their relatedness" (Gunton 1991, 43). Instead of the world—and God—being understood as a collection of independent entities each known by its specific essence or substance, the concept of relationality gives emphasis to "both God's internal relationality and God's loving relationship with the world" (Cunningham 1998, 25). Relations are no longer seen as subordinate to or dependent upon the existence of prior substance (Gunton 1991, 156). Rather, persons and other beings cannot exist apart from, and are identified by their relations with, others. Relationality, in Gunton's words, is a "transcendental", a quality that comes from God and speaks of God's being and way of being with the created world. This relationality is demonstrated in our very understanding of God as three yet one.

Peters argues that substantialist metaphysics has led to a contemporary understanding of God as remote, unfeeling, not affected by nor related to the world (1993, 32). He notes that process theologians in particular are so critical of this conception of God that they find the doctrine of the Trinity no longer tenable. However, according to Alston, this trend in contemporary theology to reject the metaphysics of substance for relationality is based on a false dichotomy. He argues that substance as understood by the early church fathers did not imply such denial of relatedness since, "there is absolutely no justification for saddling substance metaphysics as such with these commitments to timelessness, immutability, pure actuality with no potentiality, and being unaffected by relations to other beings" (1999, 195). Rather, he argues that the trinitarian theology of the early church fathers argued that the unity, or substance, of the triune God could not be separated from the intimacy of the relations within the Godhead. "It is by virtue of sharing the Godhood, *as they do*, that the Persons of the Trinity so interpenetrate and dwell in each other that the action of one is the action of all" (193).

Alston suggests that Pannenberg's interpretation of the Trinity, whereby "it is better to think of the divine unity as a unity constituted by the interrelations of the Persons than as a unity of substance (essence)" is a helpful way of demonstrating that relationality, while needing more emphasis, should not be put in opposition to a metaphysics of substance (1999, 193). Pannenberg argues that modern science has led us to understand substance and relation differently with the subordination of the category of substance to relation, "[T]he things we perceive are all finally relations" (Pannenberg 1991, 366). As a result, "[t]he divine essence can no longer be thought of as unrelated identity outside the world" (367). In Pannenberg's thought, the concept of essence, or substance, is itself defined relationally, so resolving the perceived dichotomy between them.

> [T]he introduction of relation into the concept of substance not only raises problems but also offers opportunities to solve others that have thus far seemed to be insoluble. Among them is that of the relation of the trinity in God, with its reciprocal relations between the persons, to the unity of divine essence. If the concept of essence is defined relationally, it can be more closely linked to the relations between the persons than had seemed possible hitherto (367).

That is, God's essential unity is inseparable from, and arises from, God's relationality.

Just as the transcendence and immanence of God can be polarised, so too can the essential unity or substance of God be placed in opposition to God's relational being. This distorted understanding of God has the effect of portraying God as remote and unchangeable. It imbues our world-view with instrumentalism that regards people, other living beings and the physical world as objects to be studied, understood and manipulated and God as "distant, disengaged, and incapable of suffering" (Cunningham 1998, 26). The inter-relatedness of all created things and beings with each other and with their Creator is lost sight of. Human beings lose sight of their createdness and assume the attitude of being self-reliant. The embracing of the concept of relationality by contemporary theologians, therefore, is in itself a critique of the instrumentality that marks technological culture. A trinitarian theology of creation leads to an understanding of God and creation as fundamentally relational and not instrumental. It gives support to an ecological understanding of the created order where all things are part of an interconnected and interdependent web of life. A theology of technology arises from considering the implications for human culture of this natural relationality that inheres in the created order.

Borgmann speaks of this distinction between instrumental and relational ways of living in terms of "careful power" being nurtured as a counterpractice to "regardless power" (1984a, 315). "Regardless power" is reflected in the contemporary obsession with the commodities

of daily life to enhance our feeling of self-sufficiency, ease and convenience. Such self-indulgent attitudes distort our relationships with God and the rest of creation. Careful power gives honour to the other and values the interrelatedness of God with all things. It does not seek to use or control but rather to relate in love.

"Careful power" is nurtured by an awareness of, and sensitivity to, the relatedness of all things with each other and with God. It is accompanied by an attitude of reverence and responsibility rather than by exploitation and selfishness. Through our technological culture, we seek to predict and control and so deny any contingency. The doctrine of creation reminds us of our contingency and our createdness and helps us to regain a sense of reverence and appreciation of God's grace. As Borgmann says, "[R]eality can provoke curiosity, research, and analysis, or appreciation, admiration, and reverence ... Curiosity is restless and endless. Reverence finds peace and affirmation in its object ... [T]he Creator God is offered by theists not as an object of curiosity and a causal factor—creation is donation not causation—but rather is called upon as the Commanding Presence" (2003, 73). A purely instrumental world-view squeezes out the reverential and the relational. A trinitarian concept of God reminds us of the interconnectedness of reality. It brings into question a narrowly instrumental view of a world existing as a resource for human beings with no need of God.

Referring to technological power as "regardless power" Borgmann elaborates, "We exercise such power when we act on the basis of scientific insight by way of engineering or organization in order to procure a result regardless of the recalcitrance or variety of circumstances ... Switches, keys, and dials are the insignia of this inconspicuous and consequential power through which we summon up, regardless of time, place, skill, or strength, whatever we need or desire" (Borgmann 1984a, 315). Instrumentalism, of this sort, leads human beings to be blind to, or close our eyes to, the implications of our desires and actions on the physical world and on other people. We lose sight of the way in which all things are fundamentally related and affected by our actions. "Careful power" on the other hand arises from engagement with the other, when we feel and respond to the presence of others—the physical world, other people and God. "Looking at a tree or walking through a meadow, I feel my regardless sovereignty fall away ... I am restored to a more profound engagement with the world. Nature is present in its own right and beckons me to respond in the fullness and oneness of my bodily and spiritual faculties" (315). Such an attitude of careful power honours this dynamic of relatedness.

The instrumentalism of contemporary technological culture is challenged by the relationality of a trinitarian doctrine of creation. Technology is characterised by objectivity,

rationalism and detachment. We see the world around us as matter to be manipulated according to the calculations of our rationality. Trinitarian relations imply involvement, reciprocity and empathy. A relational world-view encourages us to respect and nurture the other with whom we are in relation and to give praise to God, the source and sustainer of creation. A trinitarian theology of creation, therefore, reveals fundamental inadequacies in technological culture. Technological ways of living do not allow human beings to recognise and respect our interconnectedness with God and the world.

4.2.2 Idolatry and "Otherness-in-relation"

Chapter 2 identified humankind's idolatrous reverence for our technological capacities as another way in which our technological culture distorts relational life. Chapter 3 identified the co-inherence of transcendence and immanence as a way in which the natural relationality of creation is manifested. This section argues that the idolatry of technological culture is an indication of our blindness to the otherness-in-relation of God and creation.

Gunton identifies "failure of relation to God" as the root of our ecological as well as our personal problems and calls this idolatry (1992, 104–105). He elaborates:

> Human self-divinization is to be seen in the sometimes conscious attempt to transfer to man the attributes of divinity: omniscience, omnipotence, etc., and in the corresponding treatment of the world as a mere object to which we may behave as we wish ... [W]hat can rather barbariously be called the mechanisation or technologisation of reality is a fruit of the idolatrous worship of human capacity; and that is the form in which the ecological problem meets us today (106).

As humankind loses sight of, or denies, the otherness-in-relation of reality, we lapse into idolatry. As we invest our hope in technology to solve our problems and provide for our needs, our self-understanding is one which has human beings at the centre rather than God. Malet puts it this way:

> The scientific-technical project is inauthentic only when ... it falls into the double danger ... of forgetting that man belongs not to the calculable but to the unfolding of the calculable, and of forgetting that beside the objectifying project there are still more essential projects whose meaning is to manifest the pure appearance of being. Faith is the project *par excellence* of the more essential projects, and this

> is why it prevents the man of science and technique from becoming the prisoner of science and technique (1984, 103).

By becoming prisoners of science and technique, human beings idolise our own instrumental and controlling power. By becoming free of this idolatry, human beings restore God to the centre of the universe. "God is *par excellence* the being who cannot be objectified ... In faith the world is disclosed as the creation of God" (98).

Rather than helping us to recognise and embrace our otherness-in-relation, technological culture encourages us to find transcendence through our own power and resources. However, this can only be an illusion of transcendence if it is not based on the recognition and praise of God. Closely associated with technological culture is what Borgmann calls "disburdenment" and what Noble calls "transcendence". To regard the other purely as a resource to be used or exploited accompanies an attitude of releasing ourselves from not only the suffering, but also the inconveniences, of the relatedness of daily life. As instrumentalism runs counter to a trinitarian and relational understanding of the doctrine of creation, so this idolatry, this illusion of transcendence, runs counter to the otherness-in-relation of creation.

Hefner describes technology as a mirror that reflects back aspects of our own human condition. The first aspect is that human beings want tools to solve problems and create ease to the point where sophisticated machinery becomes a basic need. "Curing disease and extracting resources have become quasi-religious activities" (Hefner 2002, 657–658). Secondly, technology shows us we are "finite, frail, and mortal ... We create technology in order to compensate for our finitude. That could almost serve as a definition of what tools are: devices for compensating for human finitude" (658). Echoing Noble, Hefner suggests that it is in this way that technology is "almost explicitly religious", through its engagement with finitude and death—things human beings ultimately care about (659). The third aspect reflected by technology is that human beings seek to create alternative worlds to the one we are living in yet we are not always sure about the reasons and values undergirding these new worlds. This leaves Hefner with the question "Do the virtual selves we create in our technology help us to understand who we are, bring us closer to knowing ourselves? Or do they distract us, raising even more difficult questions of what it means to be human?" (660). He concludes

> [T]echnology seems to be carried out as a strategy for denying our mortality and death. It is also a means for surpassing finitude and death, in that imagining what is not but might be is a form of transcendence within our mind and spirit.

> The line between denial and surpassing or transcending is not an easy one to see. Perhaps there is no line. Perhaps denying and transcending are two sides of the same coin. Perhaps denying what is, is the presupposition for transcending it (2002, 661).

This blurring in meaning between denial and transcendence may be a symptom of humankind's loss of appreciation of otherness-in-relation. We have come to associate transcendence with escape, denial of our finitude and freedom from our relatedness. However a trinitarian reading of the doctrine of creation brings understanding that transcendence and immanence co-inhere. They are not polars nor opposites. They are indivisible aspects of the nature of God and God's way of being with the world. Human beings, as the image of God, are called to echo this otherness-in-relation. We are called to recognise and nurture our relatedness with God and the world and such a calling is a direct challenge to idolatrous attitudes.

Genuine transcendence is found with God in creation, not in human beings' denial of mortality on this earth through technological means. Technological culture is built on an escapist tendency and an illusion of transcendence. Here, technology is regarded as a religion in its own right, revered for its capacity to assist human beings to surpass or "transcend" the limitations of life, whether it be through space travel, the virtual reality of electronic communication or genetic manipulation. This understanding of transcendence, however, is a distorted one. It equates salvation with technological solutions to the limitations of human createdness. However, these technological solutions do not bring fullness of life in the Christian sense of salvation. In fact, they can narrow our engagement with life by limiting it to the anthropocentric, temporal and instrumental. They deny the relatedness of creation by seeking to provide escape from the web of relations of which human beings are intrinsically a part. As Graham puts it, the separation of transcendence from immanence goes against "the principle of the interrelatedness of all things, the vitality of matter and the irreducibility of the other" (2002, 232). God is displaced and replaced by human self-centredness.

Technological society is increasingly typified by a culture of ease, of being relieved of not only suffering, misery and disease but also of discomfort, inconvenience and unavailability to the point where "to suffer misery is no longer to be reminded of one's fundamental incompleteness and incapacity, but to be scandalized at the senseless remnant of a time long ago" (Borgmann 1984a, 311). Borgmann suggests that the realisation of the norms of comfort, ease and convenience "is the cause of the pleasant indifference that people in an advanced technological society show for the Christian message of salvation. A promise of salvation seems to have no purchase in a situation where health is secure, food and shelter

are unfailingly available, where boredom and unease are countered by sophisticated diversion" (1984a, 311).

This is not to dismiss the enormous benefits that technology has brought to humankind in health care, food, shelter, transportation, communication and other daily needs. Rather, the danger lies in expecting technology to satisfy all human needs and aspirations to the point that we lose sight of our need for healthy and respectful relationships with God and the rest of God's creation. We come to expect technology to provide commodities for our easy consumption and forget, or never know, the real implications for other people and the world around us in the production of these commodities. These implications for others can include exploitation of labour, degradation of the land and pollution of the environment. The consequence for ourselves is a disengagement from God and God's creation in its fullness. As Borgmann puts it:

> [A] radical theology of technology must be alive to these debilities and follow them up to discover and determine their pattern, extent, depth, and consequences. What might emerge from such work is the insight that the technological style of life does have as an intrinsic feature the incapacity for salvation, i.e. … for the wholeness of life. But the decisive mark of human frailty is no longer, as in the pretechnological setting, manifest at the material level as hunger, nakedness, or sickness. Instead it has become a crippling of our most profound capabilities and consequently a deprivation of things in their own right and depth. To be saved, accordingly, may involve the recovering of one's capacity for the fullness of nature, of art, and for the pretechnological things and practices of daily life that lie half-buried under the surfeit of consumption (314).

Heidegger addresses the otherness-in-relation of creation when suggests that the creativity of human beings is inseparable from the way in which we live in full awareness of our finitude and our dependence on God. He writes about this in terms of "building" and "dwelling" as a reverential and nurturing attitude to the world: "Mortals dwell in that they save the earth ... To save properly means to set something free into its own essence. To save the earth is more than to exploit it or even wear it out" (1993a, 352). Using a bridge as an example, Heidegger explains how a human construct, if built in this spirit of dwelling, "gathers to itself in its own way earth and sky, divinities and mortals" (355). He describes the essence of building as "letting-dwell" and maintains "Only if we are capable of dwelling, only then can we build" (361). Only if human beings understand and give expression to their relatedness to God, the created world and each other can our creativity be fully expressed. In Heidegger's words: " To preserve the fourfold, to save the earth, to receive the sky, to await the divinities, to initiate mortals—this fourfold preserving is the simple

essence of dwelling. In this way, then, do genuine buildings give form to dwelling in its essence, and house this essential unfolding" (1993a, 360).

Our technological culture often ignores this interrelatedness, instead regarding a building as a technological object created to serve an instrumental purpose rather than a focal point, a gathering of a web of relations. In simple terms, a house is more than a house—it is a home where people dwell in relation to God, themselves and the world around them. We are called to regard the world as our home and to recognise, respect and nurture the same networks of relationships which sustain it.

The way a human construct gathers a network of relations is the basis of what Borgmann calls a "focal thing". A fireplace is more than a device providing heat—it is the hearth for the home. A musical instrument is more than a device producing sound—it connects the player and the audience as a medium for music. Central heating systems and stereo systems do not "gather" human beings, nature and God in the same way. Technological devices serve to distance or disengage us from each other, nature and God. Focal things draw us into relation and draw upon our skills, our discipline and our labour. In them we can glimpse the otherness-in-relation of creation.

We cannot transcend the limitations of our createdness by our own technological endeavours. To attempt to do so is to idolise our abilities. The power we derive from technological devices can bring only the illusion of transcendence, self-sufficiency and freedom from the network of relations that bind us to God, each other and the world around us. True transcendence is found in our communion with God and co-inheres with God's immanence. The trinitarian doctrine of creation shows us how God's transcendent being is inseparable from God's immanent being. God's otherness as Creator is poured out in the life of Christ and the working of the Spirit in the world in profoundly intimate ways. This is an expression of the being-in-communion of God in God's triune relations and in God's being-in-communion with the world.

This theological critique of technological culture concludes, therefore, that instrumentalism and the idolising of human technological capacities does not take proper account of the interrelatedness of God's creation. This culture rests on an understanding of human beings as users and exploiters of creation, reliant on technology to solve all our problems and to free us from life's limitations. Such understandings reveal our denial and distortion of relational life. In particular they involve a denial and distortion of our humanity and our true identity as the *imago dei*. The next section draws upon a trinitarian doctrine of crea-

tion to suggest how a theology of technology based on trinitarian relationality provides directions for a transformed understanding of the *imago dei*.

4.3 Construction of a Theology of Technology: The Relational Nature of Human Creativity

Chapter 3 discussed the implications of a trinitarian doctrine of creation for understanding of the *imago dei*. It concluded that the concept of humankind as the created co-creator is consistent with the relational dynamic of creation. This section considers how a relational understanding of the *imago dei* contributes to the development of a theology of technology and argues that true human creativity is relational in nature.

The current chapter's theological critique of technological culture concluded that the destructive tendencies of technological culture originate in a distortion of human self-understanding. Our technological world-view involves an objectification of each other and creation, coupled with self-glorification, and so demonstrates our blindness to the intrinsic relatedness of creation. We do not recognise the relational nature of the *imago dei* and in so doing separate ourselves from, and put ourselves above, the rest of the created order, even to the point of believing we represent a distant, uninvolved deity. We regard the world us as a resource to be managed for our selfish benefit.

Chapter 3 identified four traditional understandings of the *imago dei* based on the capacities of human beings for reason, moral judgment, relationship and creativity. It suggested that undue emphasis on human reason and moral judgment as the defining characteristic of the *imago dei*, and too little emphasis on our relatedness, leads to a distortion in human self-understanding of our vocation. Gunton suggests that it is also mistaken to understand creativity as defining the *imago dei* because creativity is not a defining characteristic of God: "God is, indeed, our creator, so that we can say that the act of creation is not foreign to the way he is as Father, Son and Spirit. But it is the essence of God's freedom-in-relatedness that he is not bound to create ... While, therefore, we are indeed creative beings ... it is not creativity in which our imaging of God consists" (Gunton 1992, 121).

Gunton's argument that relationality is the primary quality of the *imago dei* in a trinitarian understanding is critical but incomplete. Relationality has profound implications for humankind's creativity. True human creativity depends on our being fully aware of the relatedness of creation. While God may not *need* to create, God has created and does create. Human beings, as the *imago dei*, are called to live in communion, echoing God's be-

ing-in-communion. An implication of this primary relational identity is that we are called to exercise our creative talents fully cognisant of and while nurturing loving relationships. True creativity is defined by relationality.

With this is mind, we can develop an understanding of the *imago dei* that, while primarily founded upon trinitarian relationality, also addresses the implications for human creativity. The concept of *imago dei* as relational and creative reminds us of our capacity to "bring forth", to use Heidegger's expression, not in an independent fashion, but in relation to God, to whom we owe our very existence. This relationality binds us inseparably both with the Creator and the creation. As Peters puts it, "God's relationality makes human relationality possible. The *imago Dei* is not then a quality that we humans possess by ourselves; it is rather an ongoing interaction between God and the human project" (2000, 154). It is the "relatedness-in-otherness that echoes the eternal relatedness-in-otherness of Father, Son and Spirit" (Gunton 1992, 101).

Berdyaev argues that creativeness "is only possible because the world is created, because there is a Creator" (1937, 127). That is, our creativity cannot be separated from our createdness, our relationship with God. Writing about the ethics of creativeness, Berdyaev stresses that creativeness is "by its very nature opposed to idolatry" and that a person "may indeed feel fear in connection with his creative work if he longs for fame and success, if he is complacent and worships his own work. But these feelings have nothing to do with pure creativeness" (135–136). He stresses that "creativeness is only possible because the world is created, because there is a Creator" (127). Creativity, understood or practised in isolation from our createdness, or in a self-serving manner, is not creativity at all. "And when the soul takes up a tyrannical attitude towards nature and mankind, when it wants to dominate and not be a source of sacrificial help and regeneration, it falls prey to one of the darkest instincts of the subconscious and inevitably undermines its own creative powers, for creativeness presupposes sacrifice" (152).

Berdyaev remarks that "nothing can be more pitiful and absurd than to pride oneself on one's genius" for all our gifts and our genius are received from God and are not of our own making (1937, 127). Creativity, therefore, flows from our relationship with God. This acknowledgment of the contingent nature of our creativity does not require humility—it requires sacrifice, according to Berdyaev. The love of others, not power over others, is the motivation for true creativity. Creativity is self-sacrificial in that "while preserving personal creative inspiration, a man should forget about himself and think only of values and perfect works for the world" (135). He likens the creative act to marriage, profoundly grounded in intimate and loving relationship with God and the world (127). Indeed, crea-

tiveness is fundamentally an expression of love and so involves selflessness and sacrifice (Berdyaev 1937, 141). "Creative activity always involves sacrifice ... There is nothing selfish about creativeness. In so far as a man is self-centred he cannot create anything, he cannot abandon himself to inspiration or imagine a better world" (130). Creativity engages us with the eternal and releases us from our fear of the future. "Every creative act of ours in relation to other people—an act of love, of pity, of help, of peacemaking—not merely has a future but is eternal" (148). Berdyaev speaks of creative acts arising from our standing face to face first with God and then with each other and the world. In facing God, we acknowledge the mystery of existence and are inspired by "creative fire" and, in facing each other and the world, we seek to give expression to this inspiration, albeit in a limited way (128–129). Our creativity is born of our relationship with God, which is a relationship of contemplation, and worked out in our relationship with the world, which is one of struggle. However both contemplation and struggle are grounded in love. "The ethics of creativeness is an ethics of struggle and contemplation, of love both in the struggle and in the contemplation" (152).

For Berdyaev, then, true creativeness is marked by love and sacrifice. It is inextricably linked with our worship of God and care for each other and the world, so much so that "when the soul takes up a tyrannical attitude towards nature and mankind, when it wants to dominate and not be a source of sacrificial help and regeneration, it ... inevitably undermines its own creative powers" (152). Without the nurturing of relational life, creativity perishes.

Heidegger's insistence that "building" arises from "dwelling" is a comment on human creativity being inseparable from recognising the fundamental relationships that make this world our home (1993a). He maintains, "Only if we are capable of dwelling, only then can we build" (361). This might be paraphrased as, "[O]nly we if are mindful of, and foster, our relatedness, only then can we be creative". Heidegger argues that to be human is to dwell on this earth, fully related to "earth, sky, divinities and mortals" (351). Further, it is in this dwelling, this being at home in our interrelatedness, that our cultivation of the earth and the construction of things creatively arises. "We do not dwell because we have built, but we build and have built because we dwell, that is, because we are *dwellers*" (350). This is the nature of true creativity. It is formed by an awareness of dwelling in a network of living relationships, of human beings' natural relatedness to God, each other and the world.

Technological culture, in Heidegger's view, ignores this unity of building and dwelling. Through our obsession with "enframing", i.e. considering the world instrumentally and regarding the world and even each other merely as resources, we lose sight of the relational

life of dwelling. Our creativity is damaged as a result. In Heidegger's words, "The rule of enframing threatens man with the possibility that it could be denied to him to enter into a more original revealing and hence to experience the call of a more primal truth" (1993a, 333). It is technological culture itself, and its blinkered attitude to creation, that can render us blind to the nexus between relationality and creativity. "But we do not hear, we whose hearing and seeing are perishing ... under the rule of technology ... Will we, as the ones caught sight of, be so brought home into the essential glance of Being that we will no longer elude it? ... Will we dwell as those at home in nearness, so that we will belong primally within the fourfold of sky and earth, mortals and divinities?" (Heidegger 1977, 49).

Hefner's theory of the created co-creator emphasises that human creativity is itself created and arises from the natural evolutionary processes of the world and from our cultural heritage (1993). The vocation of human beings is, therefore, essentially creative and relational. In working with God to "birth the future" we are called to direct our creativity to the wellbeing of relationships with God, each other and the world, mindful that our very creative being has been born of those same relationships (264).

Berdyaev suggests that creativity is known by love of others and self-sacrifice. Heidegger argues that our creativity (building) is inseparable from our being at home in interrelatedness (dwelling). Hefner points out that our creativeness is itself created, arising from networks of ecological and cultural relationships. Each of these perspectives refers to a nexus between creativity and relationality. For human beings to be truly creative, we need to worship God and to respect and nurture our relatedness to both Creator and creation.

The *imago dei*, therefore, leads us to the importance of understanding our creativity in the context of our relatedness. This provides a framework for a theology of technology. But what is the nature of this relatedness we seek? This is an eschatological question about humankind's redemption. Humankind's relationships are imperfect and distorted. In the Christian tradition it is in the person of Jesus Christ that relational life is grounded and modelled and it is through faith in Christ that we seek reconciliation through the power of the Spirit.

4.3.1 The Christological Ground and Eschatological Destiny of Human Creativity

A theology of technology based upon the *imago dei* has its deepest roots in christology. Christ, through his incarnation, represents the *imago dei* that humanity is called to be, the

created co-creator. Through his humanity, Christ is entirely identified with and related to the created world. He shares the particular genetic and cultural inheritance of those with whom he lived (Gunton 1992, 41). Yet his relationships with others and with God are not distorted by selfishness and idolatry but rather demonstrate the perfection of God's love. He thereby embodies the quality of relationships all human beings are called to have with each other, the world and with God. Gunton stresses that Christ's embodiment and renewal of loving relationships is central to understanding creation. He argues, "If sin and fallenness derive from that distortion of relatedness to God that takes shape in idolatry, it follows that the work of Christ in realisation and restoration of the divine image consists in the enabling of non-idolatrous forms of human being in the world" (106). Christ, a deeply relational person through whom the creative and redeeming actions of God are manifest, reveals to us what it means to be truly human. Being without sin, his relationships with others have integrity and authenticity. If sin is "not part of what it is to be human, but a distortion of our humanity", then our vocation as the *imago dei* is to respect and nurture loving relationships with other people, with the created world and with God (26).

A christological understanding of the *imago dei* requires a consideration of what it means to be a person in relation with God and the world. Gunton emphasises that, just as the Trinity is a communion of persons, so too are human beings created to be in personal relation with God, with each other and with the created world. He explains, "To be in the image of God is to be created through the Son, who is the archetypal bearer of the image. To be in the image of God therefore means to be conformed to the person of Christ. The agent of this conformity is God the Holy Spirit, the creator of community. The image of God is then that being human which takes shape by virtue of the creating and redeeming agency of the triune God" (1991, 116–117). The *imago dei* is to be found in the ontology of personhood and also in the fact that we are creatures distinct from God. "The triune God has created humankind as finite persons-in-relation who are called to acknowledge his creation by becoming the persons they are and enabling the rest of creation to make its due response of praise" (120). To be in the image of God is to realise our being in and through relations, in the spirit of love. This has implications for the ways in which we understand ourselves and our relatedness. Gunton continues, "To be in the image of God is at once to be created as a particular kind of being—a person—and to be called to realise a certain destiny. The shape of that destiny is to be found in God-given forms of human community and of human responsibility to the universe" (119).

What lessons does Christ's modelling of relational life have for our technological culture? First, Jesus' relations are free of idolatry. His life is God-centred and lived for others. So much of technological culture, on the other hand renders God redundant and reduces the

world to an object. The relational life exemplified by Jesus calls for a human culture that recognises God as the centre of all and respecting God's creation around us. As created co-creators, human beings are called to follow Jesus' example as a mediator between God and God's world. This involves honouring God as Creator, acknowledging our own contingency and regarding the rest of creation with love, care and respect.

Hardy and Ford suggest that the quality of responsibility is central to true relationality as demonstrated in the life, death and resurrection of Jesus.

On the one hand Jesus commits all responsibility for himself and others to God ... On the other hand Jesus receives back responsibility in the form of a vocation and mission. His responsibility for others before God overflows in teaching, healing, denouncing, forgiving, feeding and finally suffering. In all this his main concern is that others too should be free to refer everything to this God and receive back free responsibility for each other. This is the life of the Kingdom of God, the joyful exchange that Jesus pictures as a feast which can be begun now (Hardy and Ford 1984, 125–126).

While the life of Christ provides an exemplar of true humanity in loving relationship with God and the world, christology informed by the trinitarian doctrine of creation has further insights for a theology of technology. By virtue of his resurrection and ascension, Christ is known as "the source to others of the same quality of life that he had himself exercised" (Gunton 1992, 31). Christ not only provides the model of a perfect relational life. Christ prefigures the eschatological kingdom in which distorted relationships are reconciled. Christ, therefore, is not only the examplar of true communion—Christ embodies that communion as creation's eschatological destiny.

Peters and Bennett draw a distinction between archonic and eschatological understandings of the *imago* dei (2003, 57–59). An archonic understanding associates the *imago dei* with Adam and the origins and genetic heritage of human life. An eschatological understanding focuses on Christ as the true *imago dei* and on the belief that our true human essence is defined "relationally by our history with God in Christ" (59). In this understanding, we are in the process of becoming truly human as revealed in Christ. [H]uman integrity is already embodied in Christ and will attain its full splendor in the eschaton" (Peters 2000, 155).

Pannenberg's understanding of the *imago dei* is an eschatological and a relational one. While he accepts that the Genesis accounts give Biblical evidence for human beings made in the likeness of God, this likeness is not to be understood as a final or perfect likeness.

Rather, he understands human beings' likeness with God as our ultimate destiny, culminating in eschatological fellowship with God: "In the story of the human race, then, the image of God was not achieved fully at the outset. It was still in process ... [O]ur creation in the image of God stands implicitly related to full similarity. This full actualization is our destiny, one that was historically achieved with Jesus Christ and in which others may participate by transformation into the image of Christ" (1994, 217).

Drawing on the thought of Herder, Pannenberg argues that the *imago dei* is to be understood as the "ultimate human destiny" (1985, 73). It is an evolving *imago dei* (50). According to this understanding, through the action of the Spirit human beings are enabled to realise the fullness of relationship with God. "Only in relation to God can human beings become fully themselves" (73). Perfect communion with God eschatologically, then, is the full realisation of the *imago dei*. This differs from an understanding of humankind losing perfect communion with God through the Fall. Neither is it consistent with the belief that human beings can achieve that communion entirely through our own efforts, technological or otherwise. Rather, human beings, while striving to live in full and good relationship with the rest of creation, are reliant on God. "The goal for which human beings are destined is one they cannot reach by themselves ... [This goal] is guaranteed solely by the fact that … God himself, the origin and goal of our destiny to communion with him, is influencing us" (58).

Pannenberg's insistence that the process of our becoming fully human is reliant on the power of God is a warning about the futility and danger of "the assertion of human beings that they themselves are the ultimate goal of their own actions" (79). He argues that our dominion over nature finds its true meaning, not in autonomous human action, but "in the way in which Jesus as the Son of the Father perceived his relation to the world and in which this relation is continued in the Lordship of the risen Christ. Jesus Christ, the Son of God, thus became the prototypical fulfillment of the image of God" (79). This raises questions for our technological culture. While our creative efforts are characterised by a denial of God, or by efforts to achieve dominion over the world or even communion with God entirely by our own efforts, we are not being fully human. The loving and sacrificial nature of Jesus Christ's life and death and the eschatological fulfilment of creation's communion with God that his resurrection and ascension reveal demonstrate the full character of our vocation as *imago dei*. While our technology is characterised by trust in our own self-reliance rather than trust in God, we thwart our vocation as created co-creator. Similarly, if we seek dominion over the world by exploiting rather than respecting the other, we move away from being the *imago dei*.

Our biological and social relationships with others are avenues for our becoming fully human (Pannenberg 1985, 70). Our creative endeavours, if undertaken in recognition and respect for God and God's creation, convey our movement towards our eschatological destiny of communion. Human beings are active participants in realising our destiny and as created co-creators can mediate God's creative will. However, for human beings to be truly creative our technological endeavours must be exercised in self-awareness of our contingency and in care for the world. As Pannenberg maintains, "The mastery of nature to which human beings are called … must be exercised in awareness of the creator's own dominion over his creation. This means that human beings have not been given carte blanche for the selfish pillage and exploitation of nonhuman nature. Rather their rule over creation … must take God's creative will as its norm" (78).

Gunton describes the triune God's relatedness to the world in terms of "involvement, action, and enabling" (1992, 78). God is continuously involved with creation and takes specific and particular redeeming action through the person of Christ. The Spirit enables the creative and redeeming work of God to be realised in the world and is the agent of transformation, creativity, resurrection and novelty. Yong argues that the Spirit is "essential for right human living and relationship" because it is the Spirit who provides us with the wisdom, understanding and discernment to grasp divine meaning (2002, 37). It is the Spirit "who mediates and communicates the message of the cross" and so enables us to grasp the significance and meaning of Christ (39). Through the Spirit, then, we have insight into our vocation as the *imago dei* as revealed in Christ as "the Spirit will expand, illuminate, apply, and communicate the truth which is embodied in Jesus" (41). As LaCugna argues "the Sprit *is* the principle of union and communion. Pneumatology cannot stand by itself but belongs together with christology and trinitarian theology, because the Spirit is the person who leads us to God through Christ" (1973, 298). To be fully human and so truly creative we need to be in relationship with God through the Spirit. Conversely when human beings act without reference to the ongoing inspiration and discernment of the Spirit, our actions are not those of the created co-creator but rather run the danger of destroying life-giving relationships.

The converging work of the Word and the Spirit has eschatological significance. The Spirit's work is eschatological as the Spirit "continues to lure creation towards its destiny even while she heals the fractures in its various orders" (48). The work of the Spirit is communion with the crucified and resurrected Christ and is grounded in the activities of the created world (Welker 1994, 336–339). Creation and the efforts of human beings to be true to our God-given vocation are thus accorded "unimpeachable dignity and validity"

(Welker 1994, 340). Even while our technology demonstrates the imperfection of our relationships, the Spirit remains with us and "awakens inspiration" (341).

As human beings strive to be true to our vocation as the *imago dei*, we do so enabled by God known through Word and Spirit. We are true created co-creators when we embody an awareness of God's involvement, action and enabling with us. In this way, our creativity is informed and directed, not by our self-sufficient will and actions, but by God's acting with and through us. Christ is the perfect image of God. Not only did his life among human beings model how we are called to recognise and love God, other people and the rest of God's creation. Also, Christ's resurrection is "a matter of relationality: of how the relations to God of this human life become through the agency of the Spirit, the means of restoring to right relation those who have sought their own way and gone astray" (Gunton 1992, 64).

A theology of technology, then finds its basis in an understanding of human creativity grounded in and modelled upon the quality of relationships we have seen in Christ and in the promise of eschatological communion. Human creativity is empty and even dangerous if it does not emerge from and remain mindful of our relatedness to God and the world. If our actions disregard, damage or distort this relational life the results are destructive rather than creative. Conversely, if human beings have a self-knowledge of being the created co-creator and, as such, are aware of our contingency upon God and our relatedness to the rest of creation, we are more able to honour God's creative purposes. Creativity arises from our relatedness and cannot be expressed in selfish isolation. Our technology, then, needs to be formed so that our "building" and our "dwelling" co-inhere. Our creativity arises from our finding our home with God and the world. This theology of technology does not find its basis in humankind's capacity for selfish control, but rather in our capacity to be persons in relation with each other, God and the world. It rests on the idea that to be fully human we are called to recognise, respect and nurture loving relationships with God and God's creation. An ethics of technology, if it is to be grounded in such a theology of technology, "requires the testing of the quality of social and natural relations, for these are the principal mediators of God's goodness" (Scott 2003a, 292).

4.4 Technology, Relationality and Natural Theology

Borgmann makes the intriguing assertion that "Fundamental theology today must be a theology of technology, the successor to medieval natural theology" (1984a, 105).Given

that the theology of technology being developed in this thesis is founded on natural relationality, this association between a theology of technology and natural theology is a fruitful line of enquiry. This section, therefore, considers natural theology and its relevance for a theology of technology.

What is natural theology? Barr offers this broad definition:

> Traditionally "natural theology" has commonly meant something like this: That "by nature", that is, just by being human beings, men and women have a certain degree of knowledge of God and awareness of him, or at least a capacity for such an awareness; and this knowledge or awareness exists anterior to the special revelation of God made through Jesus Christ, through the Church, through the Bible. Indeed, according to many traditional formulations of the matter, it is this pre-existing natural knowledge of God that makes it possible for humanity to receive the additional "special" revelation (1993, 1).

Barr goes on to point out that several other more narrow usages of the term "natural theology" do exist. The first defines natural theology as "that which may be known of God by *pure reason*". The second is "the attempt to *prove the existence* of God". The third revolves around one of the great theological debates of the twentieth century between Karl Barth and Emil Brunner: "[I]s there any human knowledge of God antecedent to his self-revelation in Jesus Christ?" (2–3). This debate placed natural theology in opposition to revealed theology.

Natural theology became associated with Nazism and the ideology that superiority of race was "natural" and part of God's creative purpose. In the minds of those who connected the two this way "it seems to have been simply obvious that those who accepted natural theology would be sympathisers with the Nazi movement, while those Christians who seriously opposed Nazism would manifestly deny the legitimacy of all natural theology" (11).

According to Barr, Barth rejected natural theology on dogmatic as well as political grounds, maintaining that it was a matter of Reformed doctrine that natural theology is unacceptable. However, it is debatable if the reformers would have agreed with him (8–9). While the Roman Catholic tradition has maintained a stronger interest in natural theology than the Protestant churches, significant Protestant theologians did subscribe to natural theology. Nevertheless the political argument against natural theology, rather than dogma, was the deciding factor in putting it out of favour (11).

Thiselton questions the adequacy of Barr's definitions of natural theology, suggesting that they rest on semantics and take insufficient account of different understandings of natural theology according to the time and context (1994, 521). He also argues that the Barth–Brunner debate has been abstracted in theological discussions from its highly charged political context and has been "canonize[d] as the 'Barthian Veto' against public theological discourse, as if this is what Barth meant by 'natural theology' in the context of his larger writings" (521). By drawing on other writings of Barth, Thiselton suggests that Barth did not reject natural theology in favour of revealed theology in the way he is so often attributed. Instead, Barth's emphasis was on "the creative sovereign power of God to effect change [rather than] ... an inert, bland, system of thought which may be self-generated and idolatrous" (525). According to this understanding, Barth criticised any suggestion that humankind can control communication with God, insisting, rather, that God has the "sovereign freedom to give himself actively in love at the time and place of his choosing" (526). In this perspective, Barth's was a relational understanding of God whose character is known "in the context of his identity as the One who gives himself to the other in unconditional love" (527).

While it remains a matter of debate to what extent Barth rejected natural theology, the Barth–Brunner debate and the way it was reported had the effect of instigating a conflict between natural and revealed theology following World War II (521). The political linkage between natural theology and Nazism, while now generally discounted on theological grounds, resulted in a long-standing intellectual split between natural theology and revealed theology. It was only in the latter part of the twentieth century that attention to healing this rift was given sustained theological attention. The trinitarian doctrine of creation, whereby natural theology and revealed theology and creation and redemption are held in unity is a helpful framework for this resolution to occur. In contemporary theology of creation, serious attention is being given to the understanding of the presence and activity of God in creation, including, yet going beyond, the understanding mediated through the life of Jesus Christ, the church and the Bible. In this way, the distinction between natural theology and revealed theology dissolves. As Barr puts it:

> If one believes that God has revealed himself in his creation and continues to do so, why is that 'natural' theology and not 'revealed'? If one believed that God was revealing himself in the German political experiences of a certain era, why was that 'natural' theology and not 'revealed'? If one believes that God was revealing himself in ancient Israel, why is this not 'natural'? Perhaps all theology is both 'natural' and 'revealed'? (1993, 115).

Barr strengthens his argument by demonstrating that the Bible itself includes natural theology as part of revelation (1993, 199).

The schism between natural theology and revealed theology brought a loss of appreciation for the presence of God in the created world and for the ecological responsibility of humankind. The neglect of natural theology also led to the loss of appreciation of the fundamental relational dynamic inherent in creation. It contributed to an anthropocentric view of the world, of a world existing as a resource for human beings. A theology of technology based on the doctrine of creation restores an appreciation of God's love for all of creation and the interconnectedness of all things. It helps to revive natural theology's emphasis in the doctrine of creation, not in opposition to, but in integration with, a theology of revelation. Technology is the medium through which human beings engage with and transform the physical world. This engagement can be loving and constructive or selfish and destructive.

Attentive to the creation's dynamic of relatedness, then, a theology of technology has the potential to remind us of the interrelatedness of humanity, God and the created world around us. It addresses humankind's creative responsibility and the need for this creativity to flow from our praise of God and our love and compassion for all of God's creation.

Borgmann suggests that a theology of technology is the successor to, or the transformation of, natural theology (1984a, 307). How are we to interpret and develop this insight? Traditional natural theology, i.e. the human discernment of God in the created world, was profoundly influenced by Platonic and Aristotelian metaphysics, the same metaphysics that led to the development of contemporary science and technology. In our consideration of natural theology, we need first to understand the philosophical base of technology.

Traditional natural theology and technology have both been influenced by the same metaphysics. This metaphysics has been dominated by the rational, the objective and the separation of mind, body and spirit. This metaphysics has divided theology too into natural and revealed theology. Natural theology came to be understood as the means to prove the existence of God in a scientific way. It lost its broader meaning, i.e. seeking to discern and praise God's presence and actions in the very being and processes of the world.

In revisiting natural theology, therefore, we need to go beyond the traditional metaphysics of rationality and instrumentality and extend the theological principles of relationality found in a trinitarian doctrine of creation. This doctrine of creation holds in unity creation and redemption, transcendence and immanence, and so provides a new basis for building

a theology of technology. It no longer draws a sharp distinction between natural theology and revealed theology but rather gives renewed emphasis to the relatedness of God and God's creation, an emphasis lost by the separation of revealed from natural theology.

Drawing on Heidegger, Borgmann argues that contemporary technology is the end of traditional metaphysics and that humankind needs to recover and embrace other ways of understanding and being in the world. In doing so, he encourages us to revisit natural theology. However, this is not a direction that Heidegger himself proposed. According to Connell, Heidegger specifically rejects natural theology (Connell 1999). While Heidegger encourages the growth of what Connell calls "religious instinct" he rejects the "theistic satisfaction" of arguing for the existence of God (144). Connell remarks that Heidegger and Barth share this rejection of natural theology. Both claim that faith, not reason, is the basis of theology and, as natural theology was identified with causal arguments for the existence of God, they each reject it. They hence draw a sharp demarcation between philosophy and theology, Heidegger restricting himself to philosophy and Barth to theology.

Heidegger therefore rejects an instrumental role for God just as he rejects the dominance of an technological mode of being in human culture. Connell points to a clear link between Heidegger's rejection of natural theology and his critique of technology:

> Heidegger's lament over the domination of technology is not finally distinct from his concern over providing merely ontic answers to the ontological question: the ultimate tragedy of causal, calculative, technological thinking isn't the despoilment of the earth or the manipulation of human beings (which are ontic concerns) but rather the obscuring of Being that they bring about. Since the theistic arguments are causal arguments, they contribute to and represent symptoms of this obscuring of Being. What is more, the very god they infer is part and parcel of this desolate condition (154).

That is, Heidegger rejects natural theology on the grounds that it is an outcome of the same metaphysics that finds its expression in technology. "The true death of God, or better the murder of God, lies in our reduction of God to a value, to the status of a means to our ends ... [N]atural theology loses itself in ontic, causal, technological thinking, thereby divorcing itself from faith and all sense of Being, so that it comes to degrade and debase the God it purportedly serves" (156).

It seems, then, that Heidegger identified natural theology with a rational proof for the existence of God. This view of natural theology is in itself self-limiting, leaning as it does on the strictly rational. It is understandable that Heidegger would reject this as it mirrors

the very metaphysics that, he argues, had reached its conclusion in technology. But a prior question remains: Is this definition of natural theology, as arguments for the existence of God, too limiting and so self-defeating? Can a trinitarian doctrine of creation unite natural and revealed theology, bring together faith and reason, restore an appreciation of natural relationality? An appreciation of the natural relationality of creation, rather than a proof of the existence of God, brings together natural and revealed theology. Indeed, Connell suggests that Heidegger himself draws more on the experiential than the conceptual (146). The reawakening of the experience of relational life resonates with both the natural and the revealed dimensions of theology. Human beings can experience God in the relatedness of creation and also experience God in the life of Jesus Christ, the life of the Church and the message of the Bible.

Hauerwas develops the argument that "natural theology divorced from a full doctrine of God cannot help but distort the character of God and, accordingly, of the world in which we find ourselves" (2001, 15). He delivers a sharp critique of natural theology as an exercise in proving the existence of God quite apart from witness to God as revealed in Jesus Christ and says:

> God has never not been the trinity, but only through the struggle to render its own existence intelligible did the church discover God's trinitarian nature. Accordingly, Christians believe rightly that few claims are more rationally compelling than our confession that God is trinity. Of course, our knowledge, rightly described as revelation, only intensifies the mystery of God's trinitarian nature (16).

Following this argument, it is through the trinitarian doctrine of creation that the conflict between natural and revealed theology can be resolved. The God we meet in the workings of the created world is the same God we meet in Christ, the Bible and the church. To recognise the dynamic of relatedness in the world is not to posit an argument for the existence of God. It is part of the experience of being created by a God who always has been and always will be in loving relationship with us.

In summary, traditional metaphysics has led to a distortion of relational life. This has profoundly affected Christian fundamental theology, which in turn developed an artificial distinction between natural and revealed theology. It has also led to technological culture becoming the dominant way of being. The trinitarian doctrine of creation emphasises the importance of otherness-in-relation. This leads to the dissolution of the distinction between natural and revealed theology and gives renewed emphasis to the creative action and presence of God in all aspects of reality. This in turn suggests a practical theology of

technology whereby human beings are called to be creative and to live in the world in ways which honour our relatedness with God and God's creation. These ways may include the technological and instrumental but should not be dominated by them.

This new understanding of natural theology leads to an awareness that by our very createdness, we are in relationship with God. Through our experience of people and the world, we may come to the knowledge and awareness of God. Knowledge of the transcendence and immanence of God are inseparable. This awareness of networks of loving relationships exists even before a person comes to know of Jesus Christ, the Bible or the church. Through the witness of others with whom we are in relation we may come to understand these relationships as finding their origin in the triune God, and we may come to appreciate the importance of the human vocation of nurturing relational life.

4.5 Conclusion

In developing a theology of technology based on trinitarian relationality, the chapter has reached the following conclusions.

First, the trinitarian doctrine of creation reveals that the instrumentalism and idolatry of technological culture runs counter to the dynamic of relatedness of God and God's creation. Instrumentalism reduces the other to an object for control and manipulation and blinds us to the otherness-in-relation of God's creation. Our idolising of our technological capacities has the effect of displacing God.

Second, a theology of technology arising from the trinitarian doctrine of creation leads to an understanding of the *imago dei* that is primarily relational. The creativity of human beings needs to be consistent with and arise from our relatedness with God and the world. Christ is the embodiment and fulfilment of the *imago dei* and the Spirit is our creative inspiration.

Third, this theology of technology based on relationality has implications for our understandings of natural theology. It dissolves traditional distinctions between natural and revealed theology by demonstrating how natural relationality is the basis of God's creative, redeeming and reconciling actions.

What are the implications of a theology of technology for the life and practice of the church? This is the subject of the next chapter.

[Chapter 5]

A Theology of Technology: Ecclesiological Perspectives

5.1 Introduction

Chapter 4 moved from a theological critique of technological culture to a positive construction of a theology of technology. Both the theological critique and the theological construction rested on the proposal that relationality is essential to a trinitarian doctrine of creation. This chapter explores the question, what are the implications of a theology of technology based upon trinitarian relationality to church life and practice and, especially, to the community of the church, in a technological culture? This is done through a consideration of the concept of *koinonia*, commonly understood as the fellowship or community of the church.

Two main threads run through this discussion. They follow from the two threads of the previous chapter, i.e. the theological critique of technology and the positive construction of a theology of technology. First, what implications does our theological critique of technological culture have for the church? In particular, in what way has this culture so intruded upon and influenced the church's own life and practice that it has contributed to distortion from what the church should be? Second, what insights does a theology of technology based upon trinitarian relationality have for the church's embodiment and expression of *koinonia*?

The chapter is divided into three sections. The first will survey the trinitarian basis of contemporary ecclesiology, with a view to drawing out the themes of relationality and *koinonia*. This will serve to give expression to the nature and quality of the *koinonia* the church is called to embody. The second section will consider the ways in which technological culture has distorted the *koinonia* of the church. How has the instrumentalism and idolatry implicit in our technological way of life led us to lose sight of our vocation as the created

co-creator? The third section will suggest how a theology of technology arising from the natural relationality found in the doctrine of creation might energise the *koinonia* of the church and the world.

5.2 Ecclesiology and *Koinonia*: The Nature and Quality of Trinitarian Relationality

Chapter 3 concluded that the trinitarian and, thus, relational, basis of the doctrine of creation is essential. What, then, are the implications of these insights for ecclesiology, our understanding of the church? How does a trinitarian doctrine of creation help us to understand the nature and mission of the church? In particular, how might *koinonia*, the community of the church be understood as a manifestation of relational life?

5.2.1 The Ontology of the Church as Koinonia

Gunton suggests that trinitarian theology has been neglected in ecclesiology and, as a result, "the church has appropriated only a part of its rich store of possibilities for nourishing a genuine theology of community" (1991, 59). He calls for an understanding of the being of the church arising from the trinitarian being of God. In doing so, he posits the analogy of the being of the church as an "echo" of the being of God: "The church is what it is by virtue of its being called to be a temporal echo of the eternal community that God is" (79). Gunton suggests that it is in the doctrine of creation that the most helpful resource can be found to strengthen an ontology of the church based on the specifically Christian trinitarian theology. He suggests it is necessary that:

> ... we ground the being of the church in the source of the being of all things, the eternal energies of the three persons of the Trinity as they are in perechoretic interrelation. The primary echoes of that being are to be heard in the ways of God to the world in creation and the perfection of that creation in both Jesus and the Spirit ... The concrete means by which the church becomes an echo of the life of the Godhead are all such as to direct the church away from self-glorification to the source of its life in the creative and recreative presence of God to the world. The activity of proclamation and the celebration of the Gospel sacraments are temporal ways of orienting the community to the being of God. Proclamation turns the community to the Word whose echo it is called to be; baptism and eucharist, the sacraments of incorporation and *koinonia*, to the love of God the Father towards his world as it is mediated by the Son and the Spirit (82).

The Cappadocian theologians are credited for giving expression to the being of God as communion. For them, communion is an "ontological category. The *nature* of God is communion" (Gunton 1991, 72). The association of the being of the triune God and the being of the church is stressed by Orthodox theologian John Zizioulas. In the opening pages of his book, *Being as Communion*, he sums up his thesis this way, "[E]cclesial being is bound to the very being of God. From the fact that a human being is a member of the Church, he becomes as 'image of God', he exists as God himself exists, he takes on God's 'way of being'. This way of being is not a moral attainment, something that man *accomplishes*. It is a way of *relationship* with the world, with other people and with God, an event of *communion*, and that is why it cannot be realized as the achievement of an *individual*, but only as an *ecclesial* fact" (1985, 15).

According to this view, the relations between the persons of the Trinity is constitutive of God's creation, including the church. The church is not to be associated with Christ alone, or with the Spirit alone or even with a "proper" combination of the two. Rather the church is to be associated with the communion of the being of God as Trinity. Pickard puts it this way, "[C]ommunion generates communion ... [F]aithful response to the God identified in the economy of salvation as the God constituted eternally as a communion of persons ought ideally to be a response that finds embodiment in a new communion of persons in society and the wider creation" (1996, 72). This is the basis of understanding the ontological question about the church, "what it is that makes the church what it is" (Gunton 1991, 71). The Christian community, the church, "has the same ontological constitution as creation as a whole" (Schwöbel 1997, 170). Chapter 3 discussed how the theological themes of creation and redemption have been separated and even drawn into competing schools of emphasis. It is in the trinitarian doctrine of creation that creation and redemption are drawn back together. This flows into our understanding of the church. The separation of creation and redemption is a result of "appropriating creation exclusively to the Father and the institution of the church exclusively to the Son ... [A] trinitarian understanding of God ... can overcome the one-sidedness of a patromonistic understanding of creation and of a Christomonistic understanding of the church" (171). That is, whereas the church is commonly associated primarily with Christ and/or the Holy Spirit, a trinitarian understanding associates the church with the communion, the very being of God.

Koinonia, a word that appears nineteen times in the New Testament, emphasises the relationships both among the members of the church and with the triune God (Fuellenbach 2002, 147). If the being of the church has the same ontological basis as the being of God i.e. communion, persons-in-relation, then *koinonia* is the defining quality of the church's life. To follow Christ and to be guided by the Spirit is to enter into communion by way

of the fellowship of the church and in healthy and life-giving relationships with all other creatures. *Koinonia* as a model for the church is also called "communion ecclesiology" and became a widely accepted way of understanding the church in the latter part of the twentieth century. Indeed, it became the major theme of Faith and Order deliberations of the World Council of Churches (Fuellenbach 2002, 149). It is the model adopted by the Second Vatican Council in preference to a more rigid institutional concept of church. Fuellenbach describes the Roman Catholic church's embracing of communion ecclesiology as a "paradigm shift" as it chose to "perceive the church first and foremost as a community and not as an institution or as a perfect society" (147). It retrieved ancient understandings of the church as an icon of the triune God, understandings still held by the Orthodox churches. It also incorporated insights of the Protestant churches after the Reformation whereby the church as institution was sharply criticised (149). According to communion ecclesiology, "the Christian community is regarded as the anticipation of God's ultimate plan with humanity and the whole of creation in union and communion with the Triune God. The church is seen as an icon of the Trinity" (148).

5.2.2 Koinonia *in the Church and the World*

Hardy describes communion as "sociality", a transcendental note of being. As such, he stresses that this sociality is not limited or restricted to the fellowship of the church. Rather it applies to all human societies and their political, economic and social organisations. Humanity is called not to be a group of egocentric individuals, but to live in vibrant and loving social structures. "The transcendental reality is sociality; and this, rather than individuality, must be the basis of understanding" (Hardy 1989, 27). He cautions against making easy identifications between this transcendental sociality and particular forms of social organisation. This had led to tragic results of hierarchical theories of racial and other forms of discrimination. But imperfect human societies are not arguments against a transcendental sociality. Rather the imperative remains to seek to discern "the basis of the unity, truth, goodness of society. Such a movement, like the Doctrine of Creation itself, is a fundamental operation of human thought and life, and perfect results should not be expected" (31).

The strong connection between the doctrine of creation and ecclesiology also has the effect of "direct[ing] the church away from self-glorification to the source of its life in the creative and recreative presence of God to the world" (Gunton 1991, 82). The church does not have a monopoly on communion. Communion as a way of being flows from God

to the whole of creation. Hardy's concept of "created sociality" broadens our horizons beyond the church community. He argues that a too exclusive identification of divine community with the church builds a gulf between the church and the world that is not consistent with the doctrine of creation. Speaking of Bonhoeffer and other theologians, Hardy maintains:

> First, in moving immediately to the specific gift of God in Christ, they lose their commonality as created social beings with the society to which they speak. They put themselves outside the society to which they speak, and put Christian faith in the position of pronouncing God's work to society. Second, in proclaiming the specific gift of God in Christ as one of grace which comes through God's victory, without relating this to God's work in creation, they narrow God's work unduly (1989, 40).

Rather, the social character of human beings flows from God, and we are called to exercise our God-given vocation in the full range of economic, legal, political, cultural and personal forms of human organisation.

As Hardy himself points out, there are many forms of human organisation, all of them imperfect, including the church. Indeed, the church historically has made the mistake of modelling itself on these imperfect forms—monarchy, for example. Theologically, *koinonia* is the working model for "created and redeemed sociality" (Hardy 1989). *Koinonia* is not confined to the internal life and organisation of the church. It has implications for human beings' cultural life and so has implications for contemporary technological culture. God's action is not confined to the church. Insights into the nature of "created and redeemed sociality" can also be found beyond the church. The church may glimpse insights into how its own community life may more closely follow Christ by engaging with the world.

The trinitarian doctrine of creation leads to the understanding that all that is created finds its being in God. What is it, then, that distinguishes the church from the world if they each find their being in the triune being of God? Schwöbel suggests that the distinction lies in the self-awareness of the church of its own createdness, of its awareness of God's creation as a gift: "[I]t is the particular distinction of the church that, in virtue of its own constitution, it can apprehend and acknowledge createdness as the fundamental feature of all reality" (1997, 172). This is fundamentally different from the blindness and disregard for our relatedness that is a feature of technological culture. The church is not only called to be the community of faith but also to see, understand and proclaim the *koinonia* that flows from God and encompasses all in loving relation. The life of the church then is to

live out and to proclaim the communion that God invites us all to participate in. To worship God is to discover that "we are human beings *in* the world, and—even while being drawn to the holiness of God—not in ourselves holy" (Hardy 1996, 312–313). The church, if it truly echoes the trinitarian being of God, lives in full awareness of the relatedness of creation that flows from God, and refuses to be drawn into self-glorification.

5.2.3 The Relational Quality of Koinonia

What is the nature and quality of *koinonia*? What is the nature and quality of the divine otherness-in-relation that the church is called to echo? Hardy and Ford suggest the terms "recognition" and "respect" to define the sort of relationships the church is called to embody (1984, 31–45). "At the heart of ordinary Christian life is recognition of the love of God" (1). This simple but profound recognition of God's creative, redemptive and loving purposes provides the reference point and context for all relationships of *koinonia*. All life flows from God and all life returns to God. The human response to this recognition of our contingency and God's love for us is praise: "[P]raise is ... an attempt to cope with the abundance of God's love" (1). This recognition and praise of God has no room for the idolising and self-glorification of human achievement. All praise belongs to God, the source of all creativity and communion. Along with this recognition comes appreciation and respect for the other—respect for God, respect for all God's creatures and respect for the created world. This respect allows no room for an instrumentalist view of God's creation but rather inspires care for the other. "When free people are in good relationship, then the sort of recognition, respect and mutual delight that are the heart of praise continually overflow, and become the normal way of self-transcendence in thought, word and act" (6).

Recognition and respect are hallmarks for the *koinonia* of the church. These two qualities help us to understand the quality of relationality in the being of the triune God. The church's praise of God is typified by these two qualities. So too should the life of the church itself and the church's relationships with the world be marked by recognition and respect. The instrumentalism and idolatry implicit in technological culture are the opposite of recognition and respect. Instrumentalism involves a lack of respect, an objectification and an exploitation of the other. The idolising of our technological capabilities is a failure of recognition of God and our contingency upon God. *Koinonia*, on the other hand, is characterised by the recognition and respect of the other, which arises from trinitarian relations.

Recognition and respect as the defining qualities of *koinonia* also arise from Gunton's articulation of the otherness-in-relation of true communion. Gunton stresses the importance of the concepts of "person, relation, otherness and freedom".

> To think of persons is to think in terms of relations: Father, Son and Spirit are the particular persons they are by virtue of their relations with each other ... A relation is first of all to be conceived as the way by which persons are mutually constituted, made what they are ... But we cannot understand relation satisfactorily unless we also realise that to be a person is to be related to an *other* ... And, finally, persons are those whose relations with others are—or should be ... —free relations. [This] has to do with a free and mutually constitutive relationship with other persons, as well as a way of being in the world (1991, 11).

Koinonia, in these terms, recognises and respects the other. It is thoroughly personal, yet not limited to the personal, as it embraces the whole of creation. It forms a community of relationships through which persons find their identities and it respects freedom and renounces dominance.

Borgmann has a similar message in his use of the terms "careful power" and "regardless power" (1984a, 315). Regardless power has no regard, recognition or respect for God, other people and the world. It is driven by selfishness, self-absorption and self-glorification. It is the technological disregard for relational life. Careful power arises from recognition and respect for the other. It sees and gives praise to God. Its fruit is selflessness and its example is the life of Jesus. "Jesus lived and died referring everything to God ... In all this his main concern is that others too should be free to refer everything to this God and receive back free responsibility for each other" (Hardy and Ford 1984, 125).

Hardy remarks that a characteristic and deep weakness of technological life is "its self-justifying unwillingness to contemplate the very holiness of God" and suggests that this unwillingness arises from a way of life in the world that is increasingly "analytic-descriptive", fascinated with technological innovation, and in "which we are to be instruments in production and consumption" (2001, 6). This fascination with the technological and the quantitative blinds us to holiness as "supremely normative [and] ... the peak of reality" (6). In seeking to define holiness, Hardy draws on trinitarian relationality. "[T]he holiness of God performs its direction toward human life in the world, and does so through a concentration of holiness in relationship that is inseparable from the extending of the holiness of this relationship with and among his people in the world" (16). Holiness, it seems, resonates closely with *koinonia* for each finds its grounding in the trinitarian rela-

tions of God and is expressed in the loving relations of the world. It is not, typically, in technological culture that holiness or *koinonia* finds its expression. As Hardy comments, "The key vehicles for the performance of holiness in the world are not so much the scientific and technologically based economic developments which fascinate us so much, as those capable of *maintaining* and *directing* the inherent relationships of all people in all the dimensions of life in the world, to their fulfilment" (2001, 18). It is in worship that the church "attend[s] to the task of mediating holiness in the world ... Facing the holiness of God, and performing it within human social life, is the special provenance of worship" (19). Holiness, sociality and worship, then, are the practices that Hardy stresses as guiding principles for the life of the church and so for *koinonia* (8). Together they involve a recognition of, and respect for, God, the world and each other.

Farley, like Hardy, stresses the importance of sociality as a defining feature of ecclesia and identifies three features "intrinsic to the sociality of ecclesia", carefully distinguishing them from specific and imperfect forms of church institutionalisation (1975, 175–180). These features are face-to-face reciprocities, memory and sacred space, all of which are bound together by "specific corporate acts of testimony (Word) and sacraments" (179). The church is known by its gathering together people, face-to face, for worship, mutual support and cooperative mission. The embodiment of the church in particular communities is important. Yet the membership of the church is universal and encompasses generations past, present and future in historical continuity, united by the memory of Jesus Christ. Sacred space also transcends the comfortable spaces of geographical and political groupings and extends to include the stranger on the margins. These features, too, may be understood as features of *koinonia*, of the particular yet universal community the church is called to be.

It was in the breaking of the bread that the disciples recognised the risen Christ and praised him as God among us. Wilson suggests that in the practice of offering hospitality to the stranger the disciples came to recognise Christ, not as guest, but as host. "We think of Jesus Christ as a guest in our world, but he turns out to be our host. He is the creator of this world, and it belongs to him ... Our Creator came to us and we did not recognize him ... Only in their practice of hospitality and in Jesus' turning them from hosts to guests were these disciples given the ability to recognize him as their resurrected Lord" (1998, 171–172). The Eucharist is central to *koinonia*, as it is here that our attitudes of recognition and respect are focused on God and our awareness of our createdness and our relatedness is heightened. Recognition is the obverse of the blindness and disregard of a technological culture that does not see, recognise or respect that the world is of God.

The celebration of the Eucharist is indispensable for *koinonia*. Zizioulas maintains that, for the early church, the Eucharist "was an event *constitutive* of the being of the Church, enabling the Church to *be*". The celebration of the Eucharist was an eschatological act whereby the church "would contemplate her eschatological nature, would taste the very nature of the Holy Trinity" (Zizioulas 1985, 21). The Eucharist is the gathering of the people of God in full relationship, celebrating *koinonia* with God and the whole creation historically and eschatologically. According to the Orthodox tradition, both communion and eschatology are ontologically definitive of the being of the church (131). The Eucharist—or Holy Communion, the Lord's Supper, Mass—is celebrated in a variety of ways and with subtleties of meaning in the various denominational traditions of the church. However it remains the act of worship and praise most definitive of the Christian community and its expression of *koinonia* (Hardy and Ford 1984, 18).

The relational character of the being of God does not refer to any sort of relationship, but specifically to the relational life that has the quality of *koinonia*. There are many social, political, cultural, and even ecclesial structures that are not faithful to the recognition and respect, i.e the careful power, of true *koinonia*. Oppressive, self-serving, exploitative, dictatorial relationships have no place in *koinonia*. The church is called to practise *koinonia* through its praise of God and its care of God's community in this world. This involves recognition and praise of the triune God, the loving source of all whose very being is communion. There is no place in *koinonia* for idolatry and self-glorification. Our praise of God moves us to respect God's creation and to recognise, honour and nurture the *koinonia* that embraces the world. The continuing movement and inspiration of the Spirit open the possibility for the church to express this *koinonia*. As Hardy and Ford sum it up, "It is a lively movement with three basic dynamics … : the overflow of praise to God, offering him everything; the overflow of love in a community that shares in the Holy Spirit; and the overflow in mission to the world. As those three interweave, the Church becomes what it is meant to be" (147).

The very being of the church, then, is bound up with the very being of God. The church is called to echo the *koinonia* that expresses the loving relations of God's trinitarian being. *Koinonia* is marked by attributes of recognition and respect, not disregard and exploitation. *Koinonia* provides an alternative to the selfishness and objectification typical of technological culture. It is manifested most intensely in the practice of the Eucharist.

5.3 Ecclesial Distortions in a Technological Culture

Our discussion of ecclesiology and *koinonia* so far has focused on a theological understanding of how the church might live and practise the loving relationships we experience in the triune God, of how the church is "the social *form* of the truth of the gospel of God" (Hardy 1996, 319). Of course, the churches, being human and fallible organisations, fall short of this ideal, and always have. This section focuses on how the church is influenced by the dominant technological culture. However, this is not to suggest that ecclesial distortions are due entirely to culture. The theology of the church itself contributes to these distortions. As discussed in Chapter 4, the practice of theology and technology have been formed by some common metaphysical influences. It should not be surprising, therefore, that prevailing theology taught and lived by the church finds an echo in technological culture.

5.3.1 Consumer Spirituality

Contemporary society is experiencing what David Tacey calls "the spirituality revolution" (2003). Tacey describes this as "a spontaneous movement in society, a new interest in the reality of the spirit and its healing effects on life, health, community and well-being ... It is our recognition that we have outgrown the ideals and values of the early scientific era, which viewed the individual as a sort of efficient machine" (1). He goes on to suggest that this movement is "an almost panic response to the apparent lack of relationality and connectedness in contemporary life" (215). In losing our sense of the sacred, we have lost or weakened our connections, not only with God, but also socially and ecologically. "[A]s we lost or destroyed our invisible connections to the sacred, we found that our wider circles of identity began to be eroded and undermined. Our human ties and communal bonds began to weaken, because as the spirit withers, the human, social and ecological communities disintegrate" (218).

Whether consciously or unconsciously, members of technological societies do feel the weakening or distortion of relatedness. The consequent distress can motivate people to seek spiritual reconnection through self-help literature, courses or techniques. Cyberspace too has become a medium for religious expression. O'Leary, in his study of "cyberspace as sacred space" has researched the variety of forms of religious communication on computer networks, from religious discussions on traditional topics to the performance of rites of passage using virtual objects, actions or symbols. He concludes that the cyberspace rituals

> … appear as attempts to fulfill authentic needs now unmet by the major institutions of religious tradition. Yet there is an irreverence to these discourses … ; they are lucid and playful, they revel in pastiche and parody, and they make few (if any) cognitive demands on the participants. This conjunction of reverence and irreverence seems to me to be in some way characteristic of the spiritual situation of postmodern culture, which can neither dismiss religion nor embrace it wholeheartedly, but which ultimately leads to its commodification (1996, 803).

Are, then, new spiritual movements successful in recovering the relatedness that we yearn for so much, or are they being distorted by the influences brought to bear by the technological culture? Has spirituality itself become a commodity to be bought, tested, used and rejected on the basis of individual preference? Is contemporary spirituality itself dominated by our technological world-view? Do we seek relatedness through technology? Tacey comments:

> But when we want something desperately enough, technology tries to supply it. This has been the habit of the modern West for a long time—to satisfy deep longings with material goods, advances in science and technology. A new secular myth has grown up in our midst … and this is the myth of technological *connectivity*. It is a direct copy of our deep spiritual yearning, our desire to overcome our alienation, and it is doing very well at copying this yearning, and that is why connectivity is the number one industry in the world today … Once we enter this new world our isolation will be overcome, and we will feel marvellously interconnected, hooked-up, linked-in … We do not see this high-tech world as mythology because we are far too identified with it, but it is a new myth based on the profane interpretation of sacred desires (2003, 224).

While the Internet connects people, it lacks "the quality of physical presence" that the gathered church community embodies (O'Leary 1996, 804). It lacks the face-to-face relation which Farley identifies as crucial to ecclesia (1975, 176). In this way, there is an ambiguity in technology. While it seeks to address our need for relatedness, its underlying instrumentalism disappoints us. As Tacey puts it, connectivity is a parody of spiritual connectedness (2003, 224).

Relatedness too, then, can be packaged and sold as a commodity, whether as a book, a course, a technique or an Internet group. This is the danger that contemporary spirituality faces if it is not grounded in the true relationality of *koinonia* and does not place itself within the context of a worshipping community. The technological culture within which the church lives runs counter to the relationality of *koinonia*. The individualism, instru-

mentalism and self-glorification of technological culture can affect the way the church community conceives of its being and its mission. In a culture that tends to transform "things and practices" into commodities, religion too can be packaged for individual use. The result is what Jones calls "consumer spirituality", which, he suggests, "is shaped by consumer impulses and captive to a therapeutic culture. It systematically avoids the disciplined practices necessary for engagement with God" (1997, 4). It is reflected in the popularity of a wide range of spiritual, self-help publications. Jones describes the phenomenon this way:

> To be sure, the interest [in spirituality] reflects important yearnings among contemporary people that are both a sign of potential openness to central Christian themes *and* a judgment on the failures of Christian communities to respond appropriately to them. Yet, while Christians need to acknowledge those yearnings as authentic signs of restless hearts, the literature itself does not encourage the reader to find one's rest in God. Rather, like a good tourist, the reader is encouraged to go on brief forays, sampling exotic 'lands' of ideas, but ultimately returning to the home of his or her individual experience. The reader is offered a journey without a *telos* except the ceaseless motion of self-discovery or, more likely, self-invention. As such, the literature is dangerous because its invocation of "spirituality" suggests that it will help nurture readers and discover authentic relationships with God when what it offers is a synthetic substitute of vague, self-referential religiosity (4).

Roberts identifies this as symptomatic of postmodernism. Religious interest, fuelled by the spirituality revolution has undergone "displacement, migration and transformation" to a sphere outside the churches and is marked by "an individualistic ethos of self-development" (1996, 184–189). Popular religion has become a commodity. It is a commodity to be bought, used, and, perhaps, discarded. It has become "extracted from the context of human interactions and ... produced on demand for the eager consumer" (Gaillardetz 2000, 87). It is individualistic and not communal. It is self-referential, rather than God-centred.

Though these forms of spirituality are mainly followed outside the community of the church, their emphases can be found within as well. Farley identifies individualism as a primary distortion of the church's life today (1975, 182–184). A service of worship may be evaluated according to the features of a consumer product (Gaillardetz 2000, 83). Does it entertain? Is it self-fulfilling? Does it sell well? The purpose of worship—for the community to gather in praise of God—may be buried as a result. Kenneson describes this as "selling (out) the church in the marketplace of desire" whereby "some churches, by cater-

ing to the whims of discriminating consumers, encourage their constituents to expect the church to function as another service agency whose purpose is to court them by providing a smorgasbord of programs and services" (1993, 338). Gaillardetz points out that the commodification of religion is not something unique to modern technological society and that "non-eucharistic devotional practices" in the Middle Ages had a similar flavour. However, in the Middle Ages the communitarian nature of the surrounding culture moderated the influence of this religious commodification. Now, "there are few social checks on the technologically driven, consumerist impulse" and this is profoundly affecting the life of the church (Gaillardetz 2000, 85).

Gaillardetz identifies how the marketing of religion as a commodity, both within and outside the church, runs counter to the *koinonia* of authentic Christian community.

> When religion and the encounter with God become commodities, the ordinary realm of human existence—where God desires to meet us—diminishes in importance. But the life of grace and communion is just that—a life. Grace cannot be neatly extracted, packaged, and sold in ever more appealing ways as a commodity intended to satisfy the spiritual consumer. Christian discipleship demands more than listening to a set of tapes or working on exercises found in a spiritual handbook. It requires immersion in a Christian community, not because that community offers us the spiritual commodities we desire, but because it schools us in practices and attitudes that allow us to recover the sacred dimension of our daily lives (88).

As Dawn comments:

> The Christian community, to be a genuine gift to the postmodern world, must deliberately be an alternative society of trust and embodied faithfulness to our story and its God. Rather than becoming enculturated and entrapped by the world's values of materialistic consumption, of narcissistic self-aggrandizement, of solitary superficiality, and of ephemeral satisfaction, members of Christ's body must be Church by choosing his simple life of sharing, his willingness to suffer for the sake of others, his communal vulnerability, and his eternal purposes (1999, 55).

The commodification and privatisation of religion and the corresponding loss of focus on the gathering of the community in praise of God has the effect of distorting the *koinonia* of the church. What is lost are both the "horizontal" and "vertical" dimensions of *koinonia* due to the self-referential quality of consumer spirituality. The strength and vibrancy

of the community of believers is weakened as religion becomes a private matter, and the awareness of God working through that community is also lost. "The church's identity and mission are corrupted when its members are encouraged to view the church primarily through the lens of instrumental value" (Kenneson 1993, 339).

Tacey suggests that, in contemporary society, there is a strong yearning for spiritual connection but that technology can only offer imitations and parodies.

> The dominant cultural style ... of the postmodern period is parody and imitation ... what exhausts us is the lack of connection to our invisible, life-sustaining roots. Why do we delight so much in imitation and parody? Partly because it is easier to reproduce something than to make something new. "Making new" calls for connection with the deep roots of creativity. But we do not have control over the deep roots or over what they produce for us, whereas we have a sense that a reproduced version is something we can control or manipulate (2003, 226).

The result is a consumer spirituality rather than the gathering of the people of God in the strength and vulnerability of *koinonia*.

5.3.2 The Weakening of Sacramental Life

Koinonia, as universal sociality, is not restricted to the church. The loving community of God's creation extends to all creation. Sacramental practices of the church celebrate this God-given fellowship and honour its origin in God. The Eucharist, the holy meal, is the central sacramental practice of the church. In it, the everyday communal activity of sharing a meal finds its counterpart in the gathering of the eucharistic community in praise of God.

However, the everyday culture of preparing and sharing a communal meal is being lost as a daily practice in technological culture. Shared meals are being replaced by the individual consumption of fast foods. Eating has become an instrumentalist activity rather than a focal practice. This cultural trend has two implications for the church's eucharistic practice. First, the Eucharist loses its counterpart in daily life. Its symbolic power is weakened as it no longer holds the same cultural moorings for those who participate in it. As Borgmann puts it, "If the sacrament of the Eucharist is not reenacted in the sacramental of the dinner table, the Breaking of the Bread has a precarious place in contemporary culture" (1996, 42).

Second, the practice of the Eucharist itself can become a commodity in the minds of those who partake in the bread and the wine. The focus on the gathered community is blurred and is replaced by a pious preoccupation with the individual consumption of the elements (Gaillardetz 2000, 131). Worship leaders can become preoccupied with entertaining the congregation, and the congregation can take on the attitude of discerning consumers of "a privately chosen and purchased exercise of individual religious taste" (Lathrop 1993, 4). The purpose and meaning of worship—to gather as a community in praise of God—can consequently be lost.

The Eucharist is the most powerful example of the ritual life of the church finding its symbolic moorings in daily life, in this case the culture of the table. Borgmann identifies the culture of the word as another significant example. The reading of scriptures reflects the tradition of listening to stories and reading from books. Conversation and reading have largely been replaced by the more spectacular entertainment and pushbutton convenience of television and Internet (Borgmann 1996, 35–36). The culture of the word—conversation and reading—has been transformed into the commodities of entertainment devices. A focal activity is replaced by a technological device. The effect in church life is to render the reading of scriptures an unfamiliar and even boring activity in the setting of the church, for its corresponding practice is fading in the daily life of those listening.

The playing of musical instruments, congregational singing and religious art are further examples of dimensions of church life that are losing their corresponding cultural expressions in daily life. While music, singing and art are found in technological culture, they are more and more likely to be provided in the form of products of a convenience culture rather than as practices engaging the skills and discipline of a participating community. "The history of modern culture is ... one of the expansion of the device paradigm and the fracturing and scattering of focal practices and communal celebrations" (40).

As technological culture revolves more around the convenience of devices that disengage people from each other and the world around them, communal practices of sharing a meal, relating a story and reading and reflecting upon literature are eroded. Church practices which are built on these cultural moorings thereby lose some of their symbolic power and meaning as they no longer find the same echo in the daily lives of people. The ritual practices of the church run the danger of slipping into irrelevance or unfamiliar strangeness especially in the minds of those not enculturated into the church as children. This affects the *koinonia* within the church itself, as well as the church's ability to build relations with contemporary society. Gaillardetz sums it up this way, "[L]iturgy ... is being

undermined by certain aspects of our technological society. When technology devalues human engagement, commodifies human goods, eliminates all forms of human friction, and circumvents all experiences of human limitation, our capacity to enter into the liturgy of the world is diminished" (2000, 113).

The cumulative effect is a technological culture that is "deeply inhospitable to grace and sacrament" (Borgmann 1996, 41), or, as Gaillardetz puts it, "[M]odern technology has reshaped our daily existence in ways that can make it difficult to experience the grace of God in our lives" (2000, 11). Through the influence of technological culture, we come to expect technology to solve all our problems and to be readily available to do so. We assume we have no need of, and therefore become blind to, God's grace. "The very brilliance and complete accessibility of modern technology actually undermine our experience of the ordinary world" in all its texture and friction (42). Technological culture rids us of the inconvenience, difficulty and bother of maintaining the rhythm of focal practices in our lives that engage us with other people and the world around us. We thereby lose our appreciation of the communal disciplines and celebrations that undergird the church's sacraments. The *koinonia* of the church, which is centred on our contingency and relation to God and all creatures, is consequently weakened.

5.3.3 Secularism: The Fracturing of the Church from the World

Secularism, by which the world is understood without reference to God, is another expression of the distortion of the life of the church away from true *koinonia*. The church, rather than being identified with and concerning itself with the life and pain of the world, is often set apart, with a corresponding division between religion and politics.

Gunton argues that the doctrine of the Trinity has had too little influence on ecclesiology in church history and that this has profoundly affected the nature of the church. Instead of being an inclusive community, the church has been characterised more as a legal-political institution whose structure has been modelled on hierarchy (1989, 53). Greek philosophical and cultural influences contributed to this formation of the church along these lines. The same dualisms that contribute to the philosophy of science and technology also hampered a full relational ontology of the Trinity taking root in ecclesiology and ecclesial practice. For example a dualism developed between the "visible and invisible Church", i.e. the church on earth and the church in heaven. This resulted in the community of the church being fractured in at least two ways. First a strict hierarchy of clergy and laity

developed, with the clergy being identified with the "real church". Second, the church became an exclusive community whereby unbelievers were not welcome (Gunton 1989, 52). Peters suggests that the dualism between the visible and the invisible church is a result of confusing the invisible church with the kingdom of God. "[T]he church is a historical reality that stands both in continuity with, as well as is contrast to, the eschatological kingdom of God. It is life in the kingdom that constitutes salvation, not life in an imaginary church" (Peters 2000, 276).

This exclusive identification of the church with the kingdom of God is the beginning of a downward spiral, according to Gunton, to ultimate self-centredness and loss of community. He builds his argument on Coleridge's aphorism: "He who begins by loving Christianity, better than truth, will proceed by loving his own sect or church better than Christianity, and end in loving himself better than all", and concludes, "Adhering to anything less than the universal sociality which arises in loving the truth is the entrance to a downward spiral to the least social" (1989, 24). As the church's community becomes more exclusive and institutional, the less effective it is in exhibiting *koinonia* and in inviting others to join in the worshipping community (Peters 2000, 267). The consumer spirituality discussed above is, in part, a result of the church's own shortfalls in living out *koinonia*. People search elsewhere for a way to connect with God and to explore ultimate meaning (Gaillardetz 2000, 80–82). As the church's own theology fails to take into account the relational ontology based on the Trinity, *koinonia*, both within the gathered congregation and with the larger world, suffers.

The secularism of technological culture helps to confine religion, and therefore the church, to the private sphere. As humankind embraces the "religion of technology", we idolise our own capacities, through technology, to control our lives. Our sense of God, as transcendent other, either disappears entirely or is relegated to the spiritual realm of church. The self-understanding of the church, having absorbed this cultural attitude, has developed so that it sees little reason or need for the community of the church to be concerned with ecological, political or economic issues, in short with issues beyond the internal life of the church. The church's sense of *koinonia* is limited, as a result, to the *koinonia* of the congregation and does not expand to include the dynamics of the world. The ecumenical movement seeks to counter this development by striving to develop movements of unity in the church and in the world. However, generally, churches are regarded as, and are expected to be, religious institutions in the narrow sense, unconcerned with worldly affairs.

Gaillardetz suggests that this lack of concern comes from a deep "cultural apathy", which derives from the erosion of our relationships with other people and the world. Apathy,

the inability to suffer, flows from a withdrawal from relationship, from an avoidance of the risk and vulnerability that comes with relationship. It is tightly linked, therefore, with a technological culture built on ease and convenience. "In the single-minded pursuit of convenience and disburdenment, the impetus of modern technology unwittingly encourages cultural apathy" (Gaillardetz 2000, 71–72). In a sense, our apathy indicates our self-centredness and our reluctance to face our own finitude and createdness. This apathy can intrude even into the life of the church if it distances itself too far from the world and withdraws into a self-righteous cocoon. Our technological culture fosters what Borgmann calls "an incapacity to be moved by misery ... It is the accomplishment of unquestionable comfort and security that has all but paralyzed our capacity to help and to be helped and so to have part in the fulness of life" (2003, 105–106). Despite Christ's command to love one another, the church itself can become immune to the sufferings and needs of others and withdraw from the world.

Consumer spirituality, the weakening of sacramental life and secularism are some ways in which the life of the church is distorted from true *koinonia.* Hardy succinctly sums up the predicament of the church today this way, "Christianity originated in *pre-modernity* and—still caught there—continues to fight unsuccessfully with *modernity*, and does not yet recognize how seriously it is displaced by *postmodernity*. It is clear, however, that these three phases coexist in the social structure of the contemporary world. There the Christian churches are ... paralysed by their inability to conceive what is best for them to do" (1996, 337). He goes on to suggest that the task of theology is to "uncover the godly basis for human sociality—even in the unprecedented fluidity of the present situation" (338). That is the challenge which the next section of this chapter seeks to address. How might a theology of technology aid us in recognising, building and nurturing *koinonia* in the church and the world which are so deeply embedded in technological culture?

In summary, the church falls short of expressing true *koinonia*. One powerful influence that contributes to this distortion is technological culture. Religion becomes disengaged from the communal life of the church and becomes a privately owned commodity. The church has absorbed instrumental and individualistic attitudes in some of its practices. The church's sacramental life is weakened by the erosion of corresponding communal practices in the daily life of a technological society. The secularism of technological society contributes to a gulf between church and world masking further the inherent interrelatedness of God's creation.

5.4 *Koinonia* and a Theology of Technology

The previous section considered how ecclesial practice is distorted by the influence of technological culture. The *koinonia* of the church suffers from a loss of attention given to the recognition and respect of God and God's creation. This section considers how the *koinonia* of the church may be enhanced by an appreciation and practice of a theology of technology.

Should the church strive to adapt itself to technological culture, to become relevant to its times, or, should the church set itself apart from technological culture and exhibit another way of being? A theology of technology suggests a third path. Given that *koinonia*, communion, sociality, is a feature of God's creative and redemptive actions in all of creation, the task of the church is to recognise and respect, to nurture and protect *koinonia* everywhere. For the church to adapt wholeheartedly to technological culture is to betray that *koinonia* by bowing to the instrumental rationality of the dominant culture. For the church to concern itself with its own community and insulate itself from the surrounding world through indifference or disdain is to ignore and neglect the loving work of God in the societal and natural processes of the world. A theology of technology requires the church to be alert and responsive to the need to nurture relational life within its own community and in the whole of creation. A transformation of both church and culture is called for (Lathrop 1993, 222–223).

5.4.1 Holy Things and Practices

A key to this transformation is the nurturing of what Borgmann calls focal things and focal practices, both within the life of the church community and in the world at large. Gaillardetz considers these things and practices as manifestation of communion because "focal things and practices invite us to abandon a largely instrumental view of our world and its inhabitants in favor of an attitude of 'communion' that draws us into attentive, respectful engagement with the larger world" (2000, 26). This requires that serious attention be given to the material world, the "things" that form our lives and lifestyle. How might these things and the practices that centre on them deepen the relational life, the *koinonia* of the life of church and world? How might they serve to express the co-inherence of transcendence and immanence, of otherness-in-relation?

The word "thing" is such a common word in our vocabulary that we tend not to dwell on its meaning and so dismiss it as having little depth or importance. Heidegger, however,

devotes an entire essay to a thorough consideration of "The Thing" (1971, 165–182). Using a clay jug as an illustration, Heidegger draws a distinction between an "object" and a "thing". Science reduces a jug into an object—a collection of atoms in a particular form, containing air or liquid. This objective view gives the jug no meaning or importance. However, a jug understood as a "thing" holds meaning from the manner of its creation and the way it focuses the rhythms of life around it. "[T]he gift of the outpouring is what makes a jug a jug." (172). This gift is realised in the daily life of people and it may be realised in the sacramental life of the church.

> The gift of the pouring out is drink for mortals. It quenches their thirst. It refreshes their leisure. It enlivens their conviviality. But the jug's gift is at times also given for consecration. If the pouring is for consecration, then it does not still a thirst. It stills and elevates the celebration of the feast ... The outpouring is the libation poured out for the immortal gods. The gift of the outpouring as libation is the authentic gift. In giving the consecrated libation, the pouring jug occurs as a giving gift (172).

Heidegger argues for an appreciation of the power of things for more than their instrumental value. Things constructed through human creativity in recognition and respect for the relatedness of all creation take their place in gathering and giving expression to life's value and meaning. He speaks of the power of a thing to gather the relatedness of all creation. "In the gift of the outpouring earth and sky, divinities and mortals dwell *together all at once* ... It brings the four into the light of their mutual belonging" (173). Indeed, the very word "thing" is derived from an ancient word meaning "gathering". It is a focus for a network of social relations. While the common usage and understanding of the word "thing" is now largely synonymous with that of an instrumental "object", its ancient meaning of "gathering" can help recover the power and meaning of technology and material things. It deepens an appreciation of Borgmann's concept of a focal thing, a thing with gathers and focuses a web of relations.

What does this consideration of "things" mean for the life of the church? The communion of the church relies on things and practices. Bread, wine, jug, chalice, Eucharist—these "things" of communion gather the people of the church, the material and the spiritual and the transcendence and immanence of God in our sacramental life. In Lathrop's words, these are "holy things" and he too refers to the derivation of the word "thing" to stress their power to focus community:

> The Sunday meeting of Christians ... has focussed around certain things: primarily a book, a water pool, bread and wine on the table; and secondarily fire, oil,

> clothing, a chair, images, musical instruments. These things are not static, but take on meaning in action as they are used ... Even the assembly itself ... may be regarded as a *thing*, in the archaic Norse and old English sense—that is, a gathering of people with a purpose (1993, 10).

And further:

> The things around which we gather in church are matters of concern ... They focus our meeting, itself a thing. Moreover, they propose to our imaginations that the world itself has a center ... the primary theology of the liturgy ... begins with things, with people gathered around certain central things, and these things, by their juxtapositions, speaking truly of God and suggesting a meaning for all things (90).

Holy things of the sacraments—bread, wine, water, word—define the church and transform a gathering of people into a church. Lathrop sums up their power this way: "So, go into church. Before you, in some form, are some things: a pool, a book, bread, and wine. Around you are people, the primary thing. In this place at an appointed time, these will interact. If you let them, they will interact with you, inviting you to the breaking, surrounding you with the faith, engaging you in sending portions" (1993, 115). This use of the term "holy" echoes the thinking of Hardy, who argues that the practice of holiness defines what it is to be church in a deeply relational way and, in particular, that "the Eucharist is a complex enactment in which God's engagement [with the world] is implied at every point. In its dynamic complexity it is, as we might say, multi-referential in its incorporation of the dynamic of God's engagement with human life" (2001, 245).

Focal things are accompanied by focal practices. Davison emphasises the importance of recovering "practical reasoning" in our lives, noting that in our technological culture dualisms exist between practice and theory, doing and making. "The reward of practical reasoning is neither the systematization of theory nor greater technological efficiency. Its reward is the nurturing of wisdom about what is truly valuable in our social world by encoding it in the narratives and practices of everyday life" (2001, 165). Focal practices help us to express our relationships with God and the world by the engagement of the whole person and the whole community. "[P]ractical reasoning is the rationality of relationship. It brings to light the moral character of our essential relationality as members of human and biotic communities" (166).

Practices of the church are an expression of our relatedness to God. As Wilson puts it, "[T]he practices of the church ... engage the grace of God—that is, practices are not mere

human activities ... Every practice of the church must be explicable as a sign of God's grace. Moreover, every practice of the church must have as its goal deeper participation in the grace of God" (1998, 44). Buckley and Yeago maintain that "knowing the triune God is inseparable from participating in a particular community and its practices—a participation which is the work of God's Holy Spirit" (2001, 1). To be the church is to follow the discipline of engaging in the practices of the church passed down through the centuries.

"Holy things demand human engagement ... The power and meaning of these things is inseparable from the ritual practices they demand" (Gaillardetz 2000, 116). Gathering for a family meal and gathering for a eucharistic celebration are examples of focal practices. Each happens regularly and requires a committed and disciplined practice that contributes to the formation of a lifestyle. Ford describes this as "non-identical repetition" (1995, 359). Gathering around the meal table or communion table is an act repeated over and over but each occasion has its own character and particularity that cannot be predicted. It is distinguished from the identical repetition of technological culture, e.g. "in the mass production of commodities; in the endless reduplication of cultural artefacts; ... in scientific knowledge as the result of repeatable experiments; ... in quests for standardisation and universal norms" (374). Focal practices require the discipline of repetition but each occasion has the character of improvisation. Through them universality and particularity coinhere. As Ford puts it, "the eucharist at its best has been a non-identical repetition which is the characteristically Christian form of universality with particularity" (375). Its repetition is in obedience to Christ's command. The practice of the Eucharist is an imperative. "The story of one who while facing his disciples commands a practice which will be continued in face to face meals and looks towards the ultimate confrontation when 'he comes' ... The primary locus of transformation is in community with him in his irreducible otherness and in following his instruction" (367). The authority of Christ's command, this imperative to maintain the eucharistic practice, demonstrates how essential *koinonia* is to being the church. "It makes communion with [Christ] the embracing commandment. This is an astonishing scandal of particularity, as the remembering of this person through this event becomes the context for one's vocation and the bond of one's community" (368).

The sacramental practices of the church, whereby the gathered people of God engage in particular practices of worship around the foci of particular things—bread, wine, cup, water—are crucial and powerful ways for *koinonia* to be expressed and nourished. The dynamic relatedness of God's creation is thereby recognised and nurtured.

5.4.2 The Eucharistic Co-inherence of the Church and the World

The sacramental life of the church holds great significance and power, therefore, for countering the instrumentalism of technological culture. Focal things and practices as found in the eucharistic celebration serve to gather the community in praise of God from whom all things flow. "To take part with others in a eucharistic community over many years is to engage in a mutual shaping of lives" (Ford 1995, 364). The Eucharist is a place where the transcendent and the immanent, the spiritual and the material coinhere. Christian worship does not eschew the material but rather gathers it up in praise of God. "[T]he spiritual is intimately involved with the material, the truth about God inseparable from the ordinary, as inseparable as God was from the humanity in Jesus" (Lathrop 1993, 89). The material world is recognised in its createdness, in its being a gift from God. To regard it simply as mere matter for human use denies its relatedness to God. "The eucharist hints at the paradox that material things carry their fullest meaning for human minds and bodies—the meaning of God's grace and of the common life thus formed—when they are the medium of *gift*, not instruments of control or objects for accumulation" (Williams 1996, 98).

The Eucharist is not a place where the technological cleverness of human beings is idolised but rather a place where human creativity is placed in the context of the grace of God. The sacraments also find their echo in the communal celebrations of daily life. According to Lathrop: "[T]he stuff of Christian assembly is drawn from common experience and common life ... meeting, gathering, book, washing, meal, song, speech" (1993, 10). It is in the juxtaposition of common things and holy things that the relatedness of world and church, of all God's creation is held together. "A word addressed to the assembly, bread and wine taken with thanksgiving, water poured out to bathe: these are before us in the assembly, these give a center to the church ... Even before the church began to use them, these things already had a centering power among human beings" (91). The Eucharist connects with the ordinary daily practices of human life that focus and gather community. "It ensures a deep connection with ordinary patterns of repetitive behaviour, common substances, artefacts and words ... [T]he realm of the ordinary has been taken up and involved in the most momentous events without rejection, contrast or competition between the two. There is no middle ground needed, no mediating of the ordinary to the extraordinary" (Ford 1995, 371).

In our technological world, the rituals of the church may be seen merely as "the survival of a collection of quaint customs from a more secure and simple time" or, more powerfully, as "a realistic pattern for interpreting our world, for containing our actual experiences, and

for enabling action and hope" (Lathrop 1993, 1). Whether these rituals are anachronistic or articulate depends in large part on the resonance they find in daily life and culture. If the culture of the table disappears, the Eucharist's symbolic power will wane. If communal celebrations and gatherings wither in society, the community of the church may become a ghetto. The focal things and practices of the sacraments cannot speak in isolation. They draw upon the ordinary life of people to give expression to the *koinonia* of God's world. While the church nurtures community in its own internal life, it must also in its mission to the world proclaim the relatedness of all things and seek to nurture recognition and respect of all God's creation. The liturgy of the church sends the people out to care for the outcast (209).

The pattern of the church's eucharistic life can provide a "sanctuary of meaning" in a technological world (206). The sharing of bread and wine, gifts of God, enough for everyone, speaks of God's love and justice. The thanksgiving prayers remind us of our createdness and our responsibility to care for God's creation. "In such ways—a thanksgiving for creation that contradicts fixed status structures, a lament for human suffering that contradicts systems of forgetfulness, a joyful meal-within-limits that contradicts the ideology of the illimitable—the liturgy is a sanctuary of meaning for us" (217). The strength and depth of this meaning grows in accordance with the corresponding echoes of relatedness we find in our daily culture. The discipline of meeting and celebrating with word and table as a church community needs its counterpart in the communal celebrations of daily life for the *koinonia* of God's creation to be fully recognised and celebrated. From the other perspective, the daily things and practices of a life in community are raised up in the Eucharist in celebration of God, the giver of life in community. "Faith calls these things gifts from God, thankful that they endlessly engage the ordinary stuff of our common life" (221). Ford suggests the Eucharist "generates a habitus of blessing and offers a hospitality which incorporates people and the material world by blessing" (1995, 376).

Building on Borgmann's insights, Gaillardetz concludes,

> As a constellation of holy (focal) things and ritual (focal) practices, the liturgy has the power to subvert the device paradigm. Unlike the technological device, the liturgy *does* call attention to itself; it *does* create "burdens"; it *does* call for manifold engagement; it *does* demand a set of skills and disciplines ... The celebration of the liturgy demands our engagement in ritual actions that shape us precisely through our participation in them (2000, 117).

Barns suggests that "eucharistic worship can provide a framework for negotiating the world of technology" by being the "context for a range of communal practices in which we

trust that God continues to build and strengthen us as his people" (2001, 29–31). These practices "form us as a community structuring our bodily lives in the diversity of relationships with each other, with our society and with the natural world" (31).

Hardy identifies the Eucharist as the arena where "people find their fullest social life with God, and thus find the full scope, quality and motivation of their meaning as a society" (2001, 242). Furthermore, it is "an embodiment of all the dimensions of human existence in the world—biological, physical and historical circumstances, personal participation, social relations, political configuration, economic exchange and cultural formation—in a forward trajectory anticipating the final good of all people and things" (244). The Eucharist is a focus for the dynamic relatedness of God's creation and is the place where the church gathers to respond in worship.

The sacramental practices of the church help to remind us of our vocation as "created co-creator". To gather in worship of God is to be reminded of our createdness. It inhibits attitudes of self-congratulation and the idolising of our technological capacities. It aids our appreciation of our free creative capacities, which flow from God. We are free to create things and nurture practices that gather and give expression to the loving-kindness of God. We are challenged to create things that recognise and nurture rather than disregard and destroy community. We are called to respect the created world around us rather than to objectify, exploit and misuse it. In our mission to the world, the church is called to speak out about the dangers of idolising technology which erodes *koinonia* and to encourage the expression of human creativity which recognises and respects community and relatedness. "The pattern of thanksgiving at the table and at the pool in the church becomes the pattern of thanksgiving at the table in our homes, and that pattern becomes a pattern for life" (Lathrop 1993, 215). The liturgical rituals of the church "break open our daily lives and reveal both the hidden possibilities for communion that can be found there and the obstacles that impede the life of communion" (Gaillardetz 2000, 120).

A theology of technology helps us to perceive the importance of our material culture in recognising and praising God. The things and practices of liturgical life are intrinsically related to the things and practices of daily life. These physical and particular expressions of human creativity can help us to honour and respect the relatedness of all things. To live our vocation as created co-creators requires us to nurture focal things and practices in both the church and the world, for the two are strongly related. The instrumentalism of technological culture is thereby challenged as a dominant world-view. Rather than idolising human technological power and treating God's creation carelessly, we learn to

approach the world with more care and respect, aware of our own createdness and our vocation to nurture *koinonia*.

5.5 Conclusion

What are the insights, then, that emerge from this consideration of ecclesiology in the context of the trinitarian doctrine of creation and the theology of technology?

First, the relationality of God and God's creation has profound implications for the very ontology of the church. The church is called to be a living manifestation of communion, *koinonia*. *Koinonia* seeks to emulate the loving relationships that are of God. It is built on the recognition and respect of others and not on regardless and self-centred power.

Second, *koinonia* is not restricted to the fellowship of believers. *Koinonia*, communion with God, is God's will for all creation. The church, therefore, is called to nurture *koinonia* both within and beyond its own fellowship.

Third, the life and mission of the church is distorted from true *koinonia*. One of the reasons for this is the influence of technological culture. This culture is built on instrumentalism and encourages the self-glorification of human technological achievement. These attributes run counter to *koinonia* and lose sight of the relatedness of human beings with God and God's creation.

Fourth, the nurturing of focal things and practices both in daily and liturgical life develops *koinonia* in the church and in the world. Eucharistic practice honours both our createdness and our creativeness in the way we relate to material and spiritual reality. It holds together church and world, our daily and our ecclesial life.

Fifth, this nurturing of *koinonia* has implications for the life and the mission of the church in a variety of ways. It gives us a basis for a critical understanding of technological culture and its dangers and limitations. It gives us a lifestyle orientation in the church and the world that honours relational life and nurtures *koinonia*. It gives us an appreciation for our vocation as created co-creators called to interact with God and the world in an attitude of recognition and respect.

The next chapter, drawing on the understanding of *koinonia* developed in this chapter, will consider the implications for some specific aspects of lifestyle orientation in the church and the world.

[Chapter 6]

Cultures of *Koinonia* in a Technological World

6.1 Introduction

Chapter 5 concluded that a key challenge facing churches living in a technological culture is to understand the importance of *koinonia* and to nurture a daily and sacramental lifestyle based on *koinonia*. This chapter suggests some ways in which this might be done. It elaborates a culture of *koinonia*. This culture arises from a world-view shaped by an imagination fed by the Christian understanding of *koinonia* and from giving attention to focal things and focal practices that engage us with God, each other and God's world.

Traditionally, churches are expected to respond to technological society by making judgments on a particular technological innovation. Such an approach fails to transcend the technological world-view. The focus is on the use to which a particular technology is put rather than the technological climate which shapes our ways of being with each other, the world and God. This only serves to reinforce "the enframing power of technology itself" (Barns 2001, 46). The elaboration of a culture of *koinonia* that follows goes deeper than this narrow way of assessing technology. It addresses both the world-view and the practical lifestyle implications of nurturing *koinonia*, thereby avoiding the trap of being limited by the dominant technological culture.

The critics of technology considered in this thesis stress the danger of our being blind to the nature of technological culture. Heidegger (1993d), in particular, spoke about the dangers of the "enframing" of technology. Technology shapes not only our world but also our world-view, to the exclusion of other ways of perceiving the world. The development of a world-view grounded in *koinonia* challenges this dominance. To nurture such an imagination the churches should encourage their communities to give serious attention to the study and understanding of the technological society in which they live. If this study takes place in the context of a healthy understanding of the nature of *koinonia*, it may lead

to a critical discernment of the nature of technological culture. "As long as the influence of technology remains invisible, there can no be meaningful lifestyle discernment" (Gaillardetz 2000, 138).

What, then, are some of the practical ways in which churches can practise *koinonia* in a technological culture? It is neither possible nor appropriate to provide a blueprint for the life of a church, whether it be at local, national or global level. This chapter indicates some general directions for churches to consider. It suggests that churches need to develop, on the one hand, a critical discernment of *koinonia* and all that which nurtures or destroys it, and, on the other hand, the discipline and lifestyle of maintaining focal things and practices in daily and sacramental life. This takes on the rhythm of a worshipping community engaging in critical theological reflection regarding *koinonia* in conjunction with the practical implications for lifestyle. Lathrop calls this two-fold practice, this seeking for an alternative world-view and integrity in lifestyle, "holiness". It involves the gathering of the church in community along with "a constant extension into daily life of practices learned in the focal practice of the gathering" (1999, 210–211). Hardy describes holiness as a way of life whereby people, facing the holiness of God, seek to be holy within human social life (2001, 19). Borgmann speaks of developing a way of life that seeks "the recovery of the world of eloquent things", a world of "focal realism, patient vigor, and communal celebration" (1992, 6). Barns refers to a "eucharistic imagination" that informs and feeds our decisions and actions (2001, 45ff). Yoder urges the cultivation of specific daily that which "are actions of God, in and with, through and under what men and women do" (1994, 72–72). Each of these is an attempt to describe a world view and a lifestyle guided by *koinonia* rather than instrumentalism, individualism and idolatry.

The culture of *koinonia* embraces both the temporal and sacred dimensions of community, the reconciled community of all creation with God. It holds in relation the daily and sacramental dimensions of personal and communal life. There is a great need for such a world-view and culture, according to Barns, who maintains that "in contemporary Christian practical theology there is a general failure to re-imagine modern materiality in terms of God's creation" with the result that "[w]hen we are in church we speak and sing of the world as God's creation in largely sentimental or pre-scientific terms. In the secular contexts of our lives, by contrast, we take for granted the very different visions of nature implicit in modern technological practices and formulated in modern cosmology, natural history and the natural sciences" (1999, 177).

The development of a culture of *koinonia* is most effective if it takes the form of theological reflection on the experiences of fostering a discipline of regular practices in daily and

sacramental life which nurture and protect *koinonia*. These practices centre themselves on focal things, those expressions of human creativity that demonstrate the relatedness of God's world. This interplay of focal things, focal practices and theological reflection generates expressions of human culture that are grounded in *koinonia*. These cultural forms, being grounded in *koinonia* rather than instrumentalism, provide a counterpoint to the norms of the dominant technological culture. The following section surveys some specific cultural forms as examples of ways in which church may develop and encourage a world-view and lifestyle of *koinonia*. I call these specific forms "cultures of *koinonia*".

6.2 Cultures of *Koinonia*

Our daily life is marked by an interwoven collection of activities and involvements—work, study, preparing and eating meals, travelling caring for children, nursing the sick, listening to or making music—the list goes on. Each is shaped by the technological culture in which we live. The way in which any one of these activities is carried out becomes a culture in itself. It takes on a character and a form that speaks of our world-view and our lifestyle. This section surveys a collection of these daily cultures to consider the shape given to them by our dominant technological culture. It will consider how an imagination shaped by *koinonia* allows us to discern and judge our daily cultures more keenly. In the process, indications of how our daily cultures might be transformed to honour *koinonia* might emerge. This approach recognises that "our technologies are not spiritually neutral tools" and that "as we use them … we are drawn more deeply into a particular way of being in the world that shapes the kinds of people we are, the sorts of relationships we have, and also the way we conceive of and experience God" (Barns 2001, 2). Borgmann describes this as "a sacramental life invigorated by a continuity of sacraments and sacramentals, of worship, of focal things and practices, and of communal celebrations" (2003, 128). He describes sacramentals as "the little sibling" of the sacraments, using as an example the sharing of a meal at the dinner table as the sacramental whose counterpart is the sacrament of the Eucharist (128). In this sacramental view of life, daily activities that nurture *koinonia* point us to God. As Hardy and Ford put it, "The sacramental concern is to enter into God's way of using and enjoying his world" (1984, 17).

Keifer (1976) identifies four Christian liturgical symbols that find their basis in daily life: assembling, bathing, caressing and dining. Senn comments that each of these four symbols demonstrates a "social, nonutilitarian, transcendent and relational character" (1999, 70). Keifer elaborates this way:

> Not all gathering is assembling, not all washing is bathing, not all touching is caressing, and not all eating is dining. Flocks and herds (and bus commuters) gather. Only people with a real relationship to one another assemble. Washing is private and utilitarian; bathing is social and recreative—as anyone who has bathed a baby or gone to the beach knows. Eating we do three times a day, sometimes more. Dining we do less frequently. Touching can be accidental or merely utilitarian. But caressing ("stroking") is by definition a social activity, expressing and calling forth an interaction between persons (1976, 2).

The coming together of a church congregation (assembling), the baptising of the faithful (bathing), the anointing of the sick and dying (caressing), the sharing of the bread and wine (dining)—each finds its counterpart in human social and relational activities. Keifer argues that each requires the physical and emotional involvement of the congregation, though much contemporary liturgy fails to encourage this level of engagement.

Keifer's insights help us to identify some of the key cultural forms that echo back and forth between our daily life and our worship life. The culture of the body and the table are identified by Borgmann (2003). Senn (1999) emphasises the importance of the body in our worship and daily life. Yoder (1994) elaborates five practices that reverberate between the life of the church and our daily life: reconciliation, the sharing of bread, the forging of new communities, the recognition of the multiplicity of gifts and conversation as the basis of democracy. As well as these, Barns (2001) identifies education, work and vocation, reproduction and the raising of children, and our sense of time and place as other dimensions of our lives profoundly influenced by technology and that need to be guided and fed by a eucharistic imagination. All of these cultures, or aspects of our lives, have the potential to contribute to an overarching culture of celebration (Borgmann 2003, 35–62). The worship and sacramental life of the church provides a unifying framework for these cultural forms that find echoes in our daily life.

The next section gives specific attention to the culture of the table, the culture of the word, the culture of the body, the culture of vocation, the culture of peace and the culture of celebration. This is not a comprehensive collection of cultures of *koinonia* but they indicate the most obvious interconnections between our daily and sacramental lives. They address most directly our technological culture and suggest how the culture of *koinonia* might redirect our lives in the spirit of Christ. In the life of the church, the sharing of the Eucharist speaks of the table, reading the Bible and preaching speaks of the word, baptism and anointing speaks of the body, the sharing of God's peace speaks of peace, the sending out of God's people speaks of vocation and the very gathering of the community in wor-

ship speaks of celebration. These are broad associations and not sharp distinctions. Each is interconnected and is an expression of *koinonia*, the communal being of the church with God and God's world.

6.2.1 The Culture of the Table

Eating and drinking are among the most basic of human needs and activities. The communal act of sharing a meal transforms these activities into the culture of the table, a culture that takes many and various forms around the world. Eating and drinking can be purely functional activities of ingesting necessary food for survival. Sharing a meal is an example of a focal practice whereby the meal becomes a vehicle for building *koinonia*. "Meals are complex symbols, not just functional edibles ... They symbolize and participate in social relationships, hierarchies, inclusion and exclusion" (Lathrop 1999, 185). The table is a place to delight in the gifts of nourishment God has provided us, a place of hospitality and a place of conversation (Paulsell 2002, 98–99). This is not to suggest that all communal meal times are happy events, but they are occasions when those around the table are brought together in forms of interaction absent from the distracted consumption of fast food on the run.

The culture of the table is one of the most obvious and powerful ways in which our daily life and our sacramental life echo each other. At the heart of the Eucharist is the honouring of Christ's command to remember him through the sharing of meals. This sacramental sharing of a meal echoes the meals prepared and shared in our daily lives in a spirit of *koinonia*. As Senn puts it, "[D]ining is nonutilitarian, and it is capable of bearing transcendent meanings" (1999, 69). There is a direct connection between the Eucharist and our daily sharing of meals. Yoder suggests that Jesus' direction to remember him whenever meals are shared makes explicit this connection. "The meal Jesus blessed that evening and claimed as his memorial was their ordinary partaking together of food for the body" (1994, 16).

However as already discussed in Chapter 5, the culture of the table is disappearing in our technological society. The consumption of fast food, often alone rather than in company, is becoming more typical of our culture. But it is not only the preparation and sharing of meals that is disappearing and being replaced by the functional or diversionary consumption of food. The production and distribution of our food has become remote from our daily lives. The food we buy at the supermarket is the product of a complex industrial

process including monoculture of crops by large agribusinesses, transport over large distances, factory processing, elaborate packaging and marketing and distribution through multinational supermarket chains. What we buy is often ready to be consumed with little or no preparation or effort on our part. The purchasing and consumption of food has become a matter of convenience and this convenience is undergirded by a large and complex infrastructure of which we have little awareness or practical understanding. This aspect of technological culture is typical of Borgmann's device paradigm. That is, the production of the food we so easily purchase and consume is hidden from our view and largely outside our immediate control or understanding. "[The supermarket] offers us an array of goods about which we know very little and care less in terms of where, how and in what circumstances they are produced" (Barns 2001, 46).

As Barns points out, our disengagement from the production of our food demonstrates more than our remoteness from the natural processes of food production (46). It is also a symptom of our technological world view, the way in which the earth is regarded simply as a vast store to meet our human needs. Our agricultural methods lead to soil degradation and our transport and packaging methods are wasteful and polluting. In addition our economic systems are unjust, with millions of people starving while others have too much. Biotechnology in food production leads to patenting of seeds, thus making access for poor farmers difficult. In short, food production systems in our technological society do little to nurture *koinonia*. Instead they encourage a selfish and even diversionary approach to food. The end result is an erosion of the culture of the table. The production of food, the skill in preparing it and the joy in sharing it are less commonly celebrated in community. The status of food as being ultimately a gift from God who provides our daily bread is lost and replaced by an expectation that food is a commodity to be ordered according to our convenience and control.

How then, might the church nurture a culture of the table based on *koinonia*? A eucharistic imagination can replace our fast food world-view with one that speaks of a feast to whom all are welcome, the understanding of food being a precious gift of God and the importance of hospitality, community and celebration in the preparation and sharing of our daily food and drink. A eucharistic imagination leads us to appreciate the culture of the table that gathers together these attitudes as a vital aspect of being fully human. It extends to the celebration of the sacrament of the Eucharist whereby the grace of God is specifically recognised and the eschatological vision of humanity fully reconciled with all creation and with God is anticipated.

Lathrop expresses this well,

> [M]any modern Christians ... who have forgotten where their food comes from—have forgotten the effort and the death involved in its harvesting—and who have started to take much of their food alone, on the run, can still encounter an honesty about the source of food and a presence of the meal-keeping community in the Eucharist. They may be invited to think again about sources, about the importance of the common preparation of food, about the meal-community at home. A strong eucharistic practice needs to flow into a strong love of meals and strong truth about their practice.
>
> At the same time, because of Jesus Christ the Eucharist is only the fragment of a meal, the beginning and end of a meal, with the rest of the food given away. It is a meal that constantly presses for the inclusion of the least one, the outsider. It is a meal that cries out for signs of connection to the other assemblies. In the light of the Eucharist, our cultural meals may also become places of hospitality, places to remember connections ... Christians will find the Eucharist calling all of our cultural methods of food distribution to justice, to honor and care for the sources of our food, and to a lively sense that food is given by God that all may eat and live (1999, 215).

The linkage and the interplay between the daily and sacramental culture of the table is crucial here. The Eucharist becomes much more than a commemoration of the Last Supper and draws our attention to the agricultural, industrial and household activities that undergird the preparation of the meal (Barns 2001, 48). Our awareness of the ecological damage to the earth, of the injustices between rich and poor and of our dying arts of table hospitality are heightened when placed in the context of a worship celebration that honours the grace of God, the goodness of creation and the equality of all God's people. Conversely, if our daily culture of the table includes healthy attributes of care of the earth, generous hospitality and thanks to God then our sacramental practices find themselves on stronger foundations. These table cultures will vary from country to country and the Eucharist may also reflect this variety, but as long as the table cultures and their echoes in the Eucharist speak of hospitality, inclusion and God's grace, *koinonia* is practised (Lathrop 1999, 196). As Yoder puts it, "[T]he Eucharist is an economic act", encompassing hospitality, economic sharing, care of the earth and each other and community formation (1994, 21).

In this way a culture of *koinonia* can sharpen the church's discernment of the technological culture in which it lives. Technological innovations that underlie our table culture include

the genetic modification of food, monoculture and associated irrigation, fertilisation and transport needs and the growth of large fast food chains. All have an impact on *koinonia*, whether it be the effects on the world's ecological systems, the exclusive "ownership" of seed resources and corresponding patterns of injustice, or the erosion of communal dining. As the church becomes more aware of these aspects of technological culture, so too might its eucharistic worship, its concern for the environment, its critical discernment of technology and its patterns of inclusive hospitality reflect its commitment to honouring the *koinonia* of God's creation.

The church's eucharistic practice of *koinonia* cannot be expected to revolutionise rapidly and completely the technological culture within which its congregations live and work but, as Barns puts it, "the simple act of sharing the eucharist continues to signify the possibility of a different way, a different politics in which human community might yet fulfil its true task of imaging God within the whole creation" (1999, 184). In this way the holding of a eucharistic imagination and the practising of *koinonia* requires vision and patience and can only occur in an eschatological context, a belief that "meals [have] something to do with the last day of God" (Lathrop 1999, 195).

6.2.2 The Culture of the Word

Communication is another basic human activity, one which forms an important basis of human cultures. In today's technological culture, much of our communication takes place through the exchange of electronic information across cyberspace. Ours is "the information society" whereby almost every field of human endeavour is being transformed by computerisation and the exchange of electronic communication (Lyon 1988). Does this transformation enhance or distort *koinonia*? In addressing questions such as these, I will use the term "the culture of the word" to refer to human patterns of language, communication and information.

Borgmann makes a useful distinction between information *about* reality, information *for* reality, and information *as* reality (1999, 1). Information *about* reality are natural and human-made signs about the world. Particular tracks indicate the presence of kangaroos, for example, and are a natural sign. A report on the incidence of kangaroos in a particular habitat is another way of sourcing information about the same reality. Information *for* reality is a recipe, a musical score or architectural plans all of which are aids for creative endeavours. They "transform reality and make it richer materially and morally" (1). This information about and for reality is familiar and incorporated into human cultures. The

ability to read and understand some of this information is fading however, especially as we become more remote from the natural world or lose some cultural skills. This remoteness is linked to the growth in the last fifty years of information *as* reality. The development of electronic means of communication through television, computers and the Internet has brought about a new reality, a virtual reality. Borgmann concludes that "[t]o information *about* and *for* reality [is added] *information as reality*" and he goes on to comment, "Today the three kinds of information are layered over one another in one place, grind against each other in a second place, and are heaved and folded up in a third. But clearly technological information is the most prominent layer of the contemporary cultural landscape, and increasingly it is more of a flood than a layer, a deluge that threatens to erode, suspend and dissolve its predecessors" (1999, 2).

This flood of information technology changes the way people relate to each other. Time, place and body become more detached from our patterns of relationship. "Whatever is touched by information technology detaches itself from its foundation and retains an [insubstantial] bond to its origin" (5). This may be liberating in some respects but it can also confuse. "Is my ethereal Internet self the genuine me, freed from the accidents of place, class, and looks? Or is it a flimsy and truant version of what, for better or worse, I am actually and substantially?" (4–5). The time spent producing and absorbing electronic information also squeezes out the time available for other forms of interchange.

In this context, patterns of communication and information sharing in the church congregation seem archaic. Traditionally, the spoken word has been the predominant form of human communication, through the reading of the Bible and the prayers and songs of the gathered congregation and it is through words that much of our praise of God is expressed (Hardy and Ford 1984, 14–16). Bible readings are read out loud, echoing an oral culture of storytelling and repetition as vehicles for conveying information and remembering history. Preaching also depends on the active listening of a congregation gathered in one place. The prayers are the expressions of a community seeking to speak and listen to God. Of course, electronic communication is influencing churches as well. Television and the Internet convey preaching and whole worship services around the globe. But the tendency is for these then to take on the status of a commodity to be consumed, rather than part of the gathering of a community where the word of God, prayers and preaching are incorporated in the physical nurturing of a faithful congregation with God. The word becomes disembodied.

Yet the Christian gospel focuses on the Word becoming flesh. The information, the communication, that God has with his creation takes the form of a person, Jesus Christ. This

culture of the Word speaks of communication that is deeply relational, embodied, God with us. "[The] holy texts are a bond that unites the generations of believers into a people of God. But that bond is likely to fray if not break in a culture that neglects or derides thoughtful reading and listening" (Borgmann 2003, 127). The church faces the great challenge of maintaining and nurturing patterns of communication that are faithful to this relational, closely present, yet cosmic culture of the word. This requires the discriminating use of electronic technology, being vigilant that the technology does not dominate to the point that it transforms information *about* and *for* God to information *as* God.

The culture of the word in our daily lives is likewise under stress. The habits of reading books and telling stories are being squeezed out by the time spent in front of television and computer screens. The "glare of excessive and confused information" robs us of the capacity of thoughtful and critical judgment. Borgmann suggests that "we have to become again readers of texts and tellers of stories" if we are to maintain these capacities for reflection, discernment and insight. "Thus the culture of the word can card, spin, and knit the mass of technological information into a tapestry that is commensurate with reality (1999, 231). This is not to suggest that we can or should return to a world without technological information. However we need to maintain a healthy balance with natural and cultural forms of information that strengthen our relationships with each other and the material world. He elaborates,

> Nothing so engages the fullness of human capabilities as a coherent and focused world of natural information. No amount or sophistication of cultural or technological information can compensate for the loss of well-being we would suffer if we let the realm of natural information decay to one of resources, storage, and transportation. Analogously, nothing so concentrates human creativity and discipline as the austerity of cultural information, provided the latter is of the highest order, consisting of the great literature of fiction, poetry, and music. Our power of realizing information and our competence in enriching the life of mind and spirit would atrophy if we surrendered the task of realization to information technology. Perhaps what holds for the realization of information goes for its production too. The simplicity of the pen and the blankness of the paper may be able to challenge, if they do not terrify, the resources of the writer and drafter in a way the obliging servility of the computer cannot match (220).

Drawing on the work of Walter Ong, O'Leary makes a comparison between the revolution in communication that took place at the time of the Reformation with the current digital revolution. The Reformation coincided with the development of the printing press

and this shaped Protestantism profoundly. The Word came to be understood textually rather than sacramentally and the aural, visual and iconographic forms of communication, still apparent in the Catholic liturgy, were stripped away. The difference in Catholic and Protestant ways of communicating was most evident in the communion where, in the Catholic mass, "the visible elements of the sacrament are not signs of the thing, the spiritual reality of salvation through Christ's sacrifice; once transformed by the illocutionary power of speech, they are the thing ... [T]he Protestant liturgy ... focussed on the sermon and the words of scripture to the exclusion of all other messages; and it denied the performative character of liturgical speech-acts" (O'Leary 1996, 789). O'Leary comments that this profound divide between Catholic and Protestant liturgy led to the "formation of two communicative cultures" (790). The Catholic culture draws upon aesthetic and sensual modes of communication. The Protestant culture is text based, "apprehended through scripture and sermon but most emphatically not in stained glass, statues or the taste of bread upon the tongue" (790).

This led to an erosion, but not the complete destruction, of the power of symbolic action in Western culture. O'Leary suggests that this power "has a new home in the global communication network", which draws upon more of the senses than the printed page, e.g. sound, symbolism, photography and aesthetics (791). In this way, neopagan rituals performed via the Internet are reasserting "the power of language as performative utterance" (797). What is missing however, is the gathering of the community in each other's physical presence despite ritual attempts to claim a realm in cyberspace as a sacred space (799). While the sacralisation of cyberspace might seem ludicrous and O'Leary acknowledges the "certain absurdist quality to these rituals", he comments that the Catholic mass "virtually invented 'virtual reality', a reality supported by a panoply of sensory impressions but created wholly through language and symbolism" (800). He concludes, "It is too soon to tell what the fate of religious community in the digital age will be or, indeed, whether the idea of a 'virtual community' will prove to be sustainable ... If current trends hold, computers and computer networks will play an increasingly significant role in the future" (805–806). While noting and exploring the phenomenon of cyberspace as sacred space and the need to take this seriously, O'Leary does not make a final judgment on it.

Can *koinonia* be found in cyberspace? Such computer-mediated communication, according to Borgmann, can never substitute for the loss of natural and cultural information that gathers and engages human beings in face-to-face interaction. Natural and cultural forms of information need intentional protection and nurturing so that we do not lose their power to nurture *koinonia*. Our ability to read the natural signs in the world around

us can only increase our understanding and appreciation of our relatedness to the rest of God's creation. The world speaks to us in a way quite different from the strictly instrumental. Our ability to participate in the creation of cultural signs of music, literature and art brings forth not only our natural creative talents but also opportunities to voice our praise of God. This culture of the word finds its natural extension in the Eucharist, where our culture of the word and the Word of God find their most obvious interconnection. In celebration, whether in our daily lives or in the Eucharist, " ... information becomes alive, reality becomes eloquent" (Borgmann 1999, 228). Barns sums up the potential for a eucharistic imagination to give shape and guidance to our culture of the word this way.

> How does the eucharist enable us to resist the deep instrumentalism mediated by the new communication and information technologies? It does so by drawing us into that communicative ethic which is most fully represented in the "good news" addressed to us in the gospel and celebrated in the eucharist. It is the Word that is spoken to us, a Word in which there is no darkness or duplicity, but a Word that is truth. Yet it is not a Word that overwhelms us, but which invites us into a life of communion and open, trusting, self-revealing communication. It is a Word that is spoken to us in our embodied particularity, to this person in this place in face to face communication. On the one hand, it expresses that loving mutuality and communion which is intrinsic to the very being of God in the perichoretic unity of the three persons of the Trinity. On the other hand it calls forth a life of community, of sincere speech, of open communication in which the preached Word creates a space for all to speak and to be heard (2001, 70).

6.2.3 The Culture of the Body

Attitudes to and understandings of the body are an important part of Christian theology. The incarnation (the Word became flesh), the resurrection of Christ, the church as the Body of Christ—these central aspects of the church's belief all speak of the body. As God's creatures each of us lives as a body. The church is likened to a body of mutually dependent members with diverse but equal gifts. The world is a complex ecosystem organically interdependent as are the parts of a body. How does technological culture shape our understandings of our bodies? What might a culture of the body shaped by *koinonia* be like?

Developments in medical technology have brought great relief from pain and suffering. This is one of the most obvious benefits of modern science and technology. However, increasing specialisation in medicine has also brought changes in our attitude to the hu-

man body. We have developed an instrumental attitude to our bodies and regard them as machinery to be owned, maintained and repaired as we do other machines. They have become "objects of rational, technical control" to the point where everyday bodily activities become matters of medical scrutiny (Barns 2001, 52). To quote Komesaroff,

> The infiltration of the categories of medicine into the ways in which we think about pregnancy and childbirth, the menopause, sexual relationships, and caring for a sick relative, for example—or, for that matter, merely eating, exercising, or just lying in the sun—may profoundly transform the quality of those experiences. In these cases, medical modes of thought introduce into previously unproblematic life experiences evaluative criteria that are formulated in purposive-rational terms—that is, they are presented as purely technical values (1995, 4).

Medical technology also demonstrates our expectation that we can, even should, strive after bodily perfection. Plastic surgery, attempts to halt or slow the ageing process, gene therapy whereby everything from serious illnesses to minor defects might be corrected—developments such as these demonstrate an expectation that the perfect body is to be prized (Barns 2001, 51). Reproductive technology, while easing the pain and frustration of parents unable to conceive a child, brings with it an expectation that a child might be engineered according to our desires. In vitro fertilisation, combined with genetic manipulation and cloning, has opened the possibility of choosing and even modifying an embryo according to our wishes. There is a danger that we learn to think of children as products, "as the outcome of technological reproduction with quality-control standards" (Peters 1997, 23). "The pursuit of perfection through the hardware and software of machines [has been] extended to the actual 'wetware' of life itself, viewed as merely another sort of machine" (Noble 1997, 172). This pursuit of perfection has led us to regard illness, deformity or death as a defeat, as they indicate failures of our technological capacity to maintain, repair or reconstruct the machinery of our bodies. This is a form of technological utopianism, a quest "to purify the human species of the physical frailties with which it had been cursed, thereby to restore it to its original perfection" (172).

There is a corresponding impatience or even anger if technology cannot or does not deliver the relief of suffering we have come to expect. With the cooperation and expertise of the medical profession, we expect to be in control of our bodies, and become frustrated if this is shown not to be the case. Hauerwas points out the irony that when we are sick we are still called "patients" when often patience is the most difficult virtue to practise (1996, 88). Our impatience in turn encourages the medical profession "to promise more than it can or should deliver. In the frustration of being unable to meet impatient expectations, we are threatened with a medicine that in the name of relieving suffering, kills" (99).

Under the influence of this expectation of modern medicine, it becomes increasingly difficult for us to accept our very mortality and finitude. The process of ageing has been profoundly influenced by technological culture. Callahan calls this the "modernization of aging" whereby ageing is declared a disease to be cured as smallpox has been cured" (1987, 27). Hauerwas comments that in contemporary society, death threatens us with absolute loneliness and that we have lost the communal sense of a good death, which included being enfolded by the community in "the art of dying" (1990, 99). Technological developments in medicine have changed the focus of medical care from caring to curing. "The message from medicine about our health is clear enough: it is no longer luck or chance that some live and some die but, instead, simply a failure of science yet to succeed in managing or conquering those illnesses which remain. They are *all* open to biomedical attack" (Callahan 1987, 16). These changes in how we understand our bodies have been accompanied by profound changes in how we understand life itself. We now take it for granted that our medical destiny is in our own hands and that even our very finitude can be overcome. "Medicine becomes not just a way of curing or controlling disease, but no less a way of trying to cure or control the problems of life" (19).

Gunton suggests that within such an attitude are two "equal and opposite heresies ... that our bodies are ours to do with what we will, and that we are wholly and only our bodies, so that a death even of those ripe in years is regarded as a defeat for medical science" (1996, 33–34). Medical technology betrays attitudes of idolatry when we worship the creature rather than the creator. "From a disordered relation to the creator flow disorderly social and bodily relationships" (34). Conversely, an attitude to our bodies and to life that speaks of the "whole person as a living sacrifice to God" leads to a transformation in our social and ecclesial relations (34). Moreover, "health, as the perfection of the human person, is also an eschatological concept, for we shall not be fully healed until the promises, consequent upon the resurrection of Jesus, ... have been fulfilled" (35).

Our technological culture encourages us to be impatient with our bodies. A culture of *koinonia* encourages us to be patient. Hauerwas puts it this way,

> To be patient when we are sick requires first that we learn how to practice patience when we are not sick. God has given us ample resources for recovering the practice of patience. First and foremost, we have been given bodies which will not let us do whatever we think we should be able to do. We are our bodies and, as such, we are creatures destined to die. The trick is to learn to love the great good things my body makes possible without hating my body, if for no other reason than the death of my body is also my own death. To practice the patience of the

> body is to be put on the way to holiness as we learn that we are not our own creations (1996, 100).

"To learn to live patiently is to be deeply aware of our createdness, of our contingency and so be more accepting of our natural human frailty and limitations" (Gunton 1996, 22–23). Such patience is informed and supported by faith that our limitations are transcended, not by our own efforts, but by God's love. The focal practice of patience derives from our knowledge of God's loving and patient care of us and the world. "To be a patient who has been formed by the virtue of patience ... is to be a patient who does not believe that life is an end in itself. Indeed, a patient formed by patience knows that the enemy is neither illness nor the death that it intimates, but the enemy is all that would tempt us to be impatient or fatalistic" (Hauerwas 1996, 101–102).

A eucharistic imagination leads us to regard death as a transformation rather than a defeat. Barns suggests that it is in Christian baptism that we find a radically different culture of the body to that dominant in technological society (2001, 53–56). Baptism leads us to understand our bodies in terms of Christ's life, death and resurrection. It reminds us of our basic and ultimate createdness, it assures us that death is not to be feared and it promises us the joy of the reconciliation of God's creation. In baptism, we are promised perfection and transcendence but in a very different way from technological perfection.

> There is a strange affinity between resurrection hope and a technological utopianism, particularly in terms of the hope of a transcendence of our natural bodies. For to be a baptised body is antithetical to an acceptance of the fate of a natural body within the rhythms or cycles of nature. In baptism we affirm that ultimately our bodies are not constrained by their frailty and mortality. The destiny of our bodies is a transcendent one ... It is always a gift and it is a gift that comes ultimately not through technology but through the reshaping of our lives in terms of the moral perfection of love (54–55).

The waters of baptism echo the daily cleansing and bathing of our bodies. Paulsell writes movingly of her friend's experience of bathing her dying mother and the echoes this practice generates in the memory of baptism. She hears "the echo of the waters of her mother's baptism, which promises that her dignity will not be compromised ... It means that no matter how wasted her mother's body becomes, she recognizes there what the woman who washed Jesus feet with tears and ointment saw: a suffering temple of the Holy Spirit, cherished by God" (2002, 38–39).

In baptism, we have the possibility of nurturing a different attitude to our bodies and so to develop "an alternative practice" of the body (Barns 2001, 53). While we should respect and care for our own and each others' bodies as creatures of God, we should not idolise them or regard them as personal objects for control. A world-view shaped by baptism does not eschew medical technology but rather puts it in proper perspective. It helps us to discern between medicine that allows for the compassionate relief of pain and suffering and medicine that belies a selfish or idolatrous preoccupation with perfection. This does not mean that we are provided with a blueprint for ethical limits for particular technologies. Rather, we are encouraged to set aside an instrumentalist approach to our bodies and embrace a eucharistic one, with its identification with the story of Jesus' incarnation, life, death and resurrection (53).

An important part of Jesus' ministry was healing and this ministry was grounded in the healing of relationships, with God and with other people. The eucharistic culture of the body needs likewise to be relational rather than individualistic. Whereas medical technology at its most instrumental sees an individual and autonomous sick body to be cured, the eucharistic culture of the body sees a member of the body of Christ to be cared for, respected, comforted and upheld by the community (Paulsell 2002, 12). Indeed the word "body" is an ancient word used to denote a community, a body of people (Yoder 1994, ix). In this sense, it implies interdependence. When one hurts, the whole community is affected and involved. "We belong to one another, and so we have a share in one another's joy and a responsibility to help one another bear grief and pain ... [I]n both our integrity and our relations with other bodies, we belong to God" (Paulsell 2002, 25).

The baptismal practices of the church informed by this culture of the body might be accompanied and followed by pastoral care of its members, intercessory prayer, anointing, providing emergency resources and development aid to the wider community and counselling those in distress. It may also include giving considered opinions on new or prospective medical technologies. In all this, the church needs to embrace a culture of the body that is relational rather than instrumental, a culture of the body which reminds us of the giftedness and interconnectedness of life. "Rather than our bodies being shaped by the autonomous individualism of modern medicine and consumerism, we recognise that we belong to one another. There is a necessary sociality to a Christian vision of medical practice and care and thus a need for congregational deliberation and reflection on forms of care and priorities for research, rather than this being left to the dominant regimes of the market and the state" (Barns 2001, 55–56).

Barns suggests that "a baptismal imagining of the body" involves an ecclesial and relational, rather than an individualistic, understanding of the body and also the development of the virtue of patience to help us "live patiently within the possibilities and constraints of our mortal bodies" (2001, 55–56). Here we have the elements of a eucharistic imagination and its corresponding focal practice. The practice of baptism in the church is a corporate one where a person and that person's body is incorporated into the church and is identified with the life, death and resurrection of Christ. Baptism speaks of *koinonia*. In our daily life we are challenged to recognise and nurture our baptismal awareness by the intentional practice of the gift of loving patience that is born of the acceptance of our createdness. Our baptism, our ongoing participation in the fellowship of the church and our practice of patience help us to recognise both the gifts and threats of medical technology by heightening our awareness of compassion and community on the one hand and idolatry or utopianism on the other.

Physical activities, from the simple to the athletic, from a brisk walk to a marathon, remind us of both the abilities and the limitations of the body. Physical activities, practised alone or with others, require discipline and repeated effort in a technological society where ease of transport and passive entertainment are encouraged. However, they engage us with our bodies and with the world in a way cars and televisions do not. Borgmann elaborates the example of running this way:

> Running is simply to move through time and space, step-by-step. But there is a splendor in that simplicity. In a car we move of course much faster, farther and more comfortably. But we are not moving on our own power and in our own right. We cash in prior labor for present motion. Being beneficiaries of science and engineering and having worked to pay for a car, gasoline, and roads, we now release what has been stored and use it for transportation. What I am doing now, driving, requires no effort, and little or no skill or discipline. I am a divided person; my achievement lies in the past, my enjoyment in the present. But in the runner, effort and joy are one; the split between means and ends, labor and leisure is healed ... [T]he runner is mindful of the body because the body is intimate with the world. The mind becomes relatively disembodied when the body is severed from the depth of the world when the world is split into commodious surfaces and inaccessible machineries. Thus the unity of ends and means, of mind and body, and of body and the world is one and the same. It makes itself felt in the vividness with which the runner experiences reality (1984b, 202–203).

Living in a technological culture gives us many opportunities and excuses for not exerting ourselves physically. Transport, communication and entertainment systems relieve us

of the burden of physical activity. In the process, they relieve us of opportunities of active engagement with our own bodies and with the world around us. Paulsell expresses it this way, "We honor our bodies as God's creation when we inhabit them with greater attention, for when we are where our body is, we are also where our creator is ... When we reach and stretch and move, we have an opportunity to know ourselves fashioned by one who cherishes bodies" (2002, 124).

How then, might a culture of *koinonia* and its corresponding focal practices give shape to a culture of the body? How might our baptismal understanding of our bodies shape our daily and liturgical practices? There are at least three possibilities. First, the cultivation of a relational rather than an autonomous attitude to our bodies reminds us of our membership in God's creation and in God's church. Second, remembering the giftedness and the createdness of our bodies encourages us to care for, delight in and respect our bodies' abilities and limitations. Third, our faith in the risen Christ allows us to regard death as a transformation rather than a defeat and so live patiently rather than impatiently with our bodies and their mortality.

6.2.4 The Culture of Vocation

During the Eucharist, the congregation brings an offering of bread and wine and sometimes money, as gifts deriving from their daily work (Davis and Gosling 1985, xvii). At the end of a service of worship, the congregation is "sent out" to love and serve the Lord. We are exhorted to fulfil our vocation and our mission in the world. Can our work be an expression of our vocation of created co-creator? Can work be the way we love and serve the Lord? Work characterises the daily lives of most of us and is shaped by the technological world in which we live. How might our work be informed by *koinonia*? Are there focal things and practices that might influence the attitudes and understandings we bring to our work?

Ellul argues that, over the centuries, the way the church has understood the relationship between daily work and divine vocation has varied from work as a curse, on the one hand, to work as service to God, on the other. Now, the dominance of technological culture, he goes on to say, has brought a definite break to any linkages between work and vocation (1976, 495–510). Our work has become a commodity to be bought and sold and its has been subordinated to machines. In Ellul's opinion, "It cannot be anything but an alien activity which is imposed from without, corresponds to no inner reality, and in the strict sense no longer forms a true part of the life of man even though it takes up the major

part of his time" (1976, 501). In short, Ellul maintains that any possibility of work being an expression of a vocation given to us by God has been stripped away by the dominance of technique in the workplace. "[T]he very idea of perfect technique rules out the idea of vocation" (502). Ellul concludes that while work is a necessity of human survival and contingency, the nature it takes in technological society prevents it from being viewed as a vocation (501). This does not render work valueless for "it offers the possibility of sustaining life, of upholding the world, and of a continuation of a history" (506). However, the exercise of our vocation needs to be guided by quite different principles and patterns of relationship with each other and the world. Ellul describes this vocation as follows, " This vocation must find expression in an action: an action that will have a social and collective impact which in one way or another can change the form of the world in which we are; an action that has to be gratuitous even though it retains the features of seriousness, competence, continuity, and invention that we attribute to real work ... As vocation is free and an expression of grace, so this activity must be free in return" (507).

Borgmann agrees that work suffers from increasing degradation in technological society (1984b, 114–124). This degradation takes various forms. First, there is a division of labour into single repetitive tasks, as seen on the factory floor. While this takes place in the name of efficiency, it has the effect of de-skilling the workforce and making an individual a commodity easily replaced by another individual. While machines and devices may take physical drudgery out of work, they also bring disengagement from the fruits and process of the work.

Second, there is the specialisation in research, development, engineering, law, marketing and other areas that guide the overall structure of technological society. The innovations that flow from these specialisations displace previous ways of doing things. As Borgmann comments, "Technology did not enter an empty stage but a world that was filled with work and celebration, with hardship and joy. Human life is always full at any one time, and innovations can take place only by displacing some tradition. Thus technology had to displace and destroy traditional crafts" (116). While professional lawyers and engineers may derive reasonable satisfaction and remuneration for their work, the outcome of technological innovation is a contraction of those skilled in traditional crafts and an expansion in unskilled labour (118). Another effect of this displacement of older ways of work is the erosion of social patterns of interaction. This is not to argue against technological developments that ease physical hardship from life but rather to indicate that if work is understood from a purely instrumental point of view the social and relational value of work is overlooked.

Third, there is the degradation of work, even to the point of its elimination. Microelectronics allow robots and automated machinery to replace more and more of the workforce, replacing people with machinery. The reliability and productivity of people is surpassed by that of the robot. The sophistication of this level of automation renders it inaccessible to, and uncontrollable by, all but the most specialised technicians. "The circle of expertise is suffering a final contraction and centralization ... The ineradicable imperfections of human labor are overcome by dispensing with human labor. The degradation of work ends with the elimination of work" (Borgmann 1984b, 123).

Finally, there is the separation of labour from leisure. "Leisure consists in the unencumbered enjoyment of commodities whereas labor is devoted to the construction and maintenance of the machinery that procures the commodities" (114). Technological society is geared, thereby, to the goal of consumption and diversion and our work is directed to that end. While our work becomes increasingly degraded, divided and compartmentalised, so our leisure becomes increasingly dependent on the consumption of commodities. In both aspects of our lives there is an increasing alienation from the skills of our bodies, cooperation with our fellow human beings, interaction with the natural world and our God-given vocation.

Yet, in our society, the work we do, or do not do, is commonly the most powerful source of our identity and self-worth. As our work becomes increasingly degraded and influenced by the values of technology, so too does our identity and self-worth become reduced to our usefulness and monetary value (Schumacher 1980). Members of the workforce become themselves commodities to be bought, traded and dispensed with as required. The globalisation of industry leads to a rift in a sense of belonging to a work community of people known to us. Electronic patterns of communication render shared work in a office redundant and bring a growing isolation of workers from each other. The trend from lifetime employment with one employer to short-term contracts likewise fractures a sense of loyalty to, and familiarity with, a community. "[T]echnological change has resulted in work becoming more demanding, more competitive and less secure" (Barns 2001, 63–64).

If our sense of identity and self-worth is founded primarily on work as it is known and practised in technological society, the danger is that our sense of relatedness to each other, the world around us and to God is weakened. As we come to understand ourselves as commodities, we come to feel insecure, isolated, undervalued and, ultimately, depressed.

The exhortation that comes from *koinonia* to love and serve the Lord is not grounded in the instrumental logic of technological culture. The vocation to be a created co-creator

calls us to act as full members of an interrelated community of God, God's people and God's world. Our vocation is grounded in a sense of self-worth as God's creatures, loved and cherished by our Creator. We are called to exercise our talents, not in isolation, but in community of interrelated creatures, inspired and empowered by the Spirit.

To carry this spirit of *koinonia* into the workplace may not transform that workplace dramatically, but it may influence our attitudes to work, the quality of relationships we have with people and the decisions we make. The division between work and vocation may be bridged to some extent (Yoder 1994, 25–27). Our identity and sense of worth are lifted beyond the instrumental and find wider and deeper foundations in all aspects of our life. Voluntary work, care for others and political commitments can all be expressions of a God-given vocation that gives direction to our whole lives, not just those money-making aspects. To practise this sense of vocation may change those around us as well as ourselves. By recognising and affirming the vocation of others we can contribute to their own rediscovery of their vocation, just as they may recognise ours.

In this way, vocation is not confined to exercising the talents of an individual. It is a shared vocation with others to build up the community of church and world. Barns identifies four characteristics of vocation grounded in the *koinonia* of the church. It is oriented to the upbuilding of the body of Christ, it is an expression of a shared gift rather than self-achievement, it is shaped by an ethos of service rather than personal career development, and it is marked by a mutuality of interdependence (2001, 66). This culture of vocation may provide the basis for the church community to identify its own vocation within the wider community, to support its members in identifying and exercising this vocation together, and to contribute to debates about workplace and employment policies. In all of these aspects, the culture of *koinonia* assists the church to recognise where the instrumental logic of technological culture is devaluing God's people and hindering the exercising of their vocation as created co-creators. The sending out of God's people at the conclusion of each service of worship is a sending out to their lives in the whole world, including the workplace. "Work is a way of belonging to, sharing in, and contributing to the life of the community" (Meeks 1989, 151). Our vocation is to be exercised in the whole of life, not only in the church community, not only in the workplace, but in each and every part of our lives. This shared vocation can transform our attitudes and our actions by "requir[ing] of us ... not to be pressured either into withdrawing into the semi-enclosed world of church activities, or accommodating ourselves to the technicity of the work world" (Barns 2001, 67).

Meeks suggests that our trinitarian understanding of God has the capacity to reorient our theology of work. The work of the persons of the Trinity is personally distinctive, cooperative and self-giving and this pattern provides the direction for our own work (Meeks 1989, 132–134). Wherever work in a technological society brings domination, division, inequality or selfishness, it goes against this trinitarian pattern of *koinonia*. It is not part of our common vocation as the created co-creator. Just as we are called to cooperate with God in our vocation, so we are called to cooperate with each other.

Humankind's vocation as created co-creator is a gift from God. In our relatedness, we are called to live out that shared vocation in loving service to each other, to the world and to God. While work in a technological society is characterised by instrumentality, selfishness and idolatry, it cannot be a full expression of our wider vocation. Where work is characterised by the expression of our gifts for the sake of the body of Christ, for the sake of *koinonia*, it becomes part of our wider vocation.

So, a culture of *koinonia* expressed as a culture of vocation is found in the ethos of our eucharistic worship, which send us out to love and serve the Lord. It is this imagination which may transform the way we approach our daily work and may ultimately transform that work itself.

6.2.5 The Culture of Peace

A central aspect of eucharistic worship is the "passing of the peace". Usually following the confession of sins and absolution, the members of the congregation greet each other in a gesture of reconciliation and the passing on of the peace that comes from God. Peace and reconciliation are characteristic of *koinonia*, describing the wholeness and unity of the communion of all God's creatures. It is reflective of the peace found in the communion of the God as Trinity.

What we call "peace" in the world today is very different from the peace of *koinonia*. Following the two world wars, nuclear deterrence maintained an uneasy calm between the superpowers while wars in the Third World were waged with weapons provided by a prospering arms trade. Research and development continues into nuclear, chemical and biological weapons, weapons that pose a grave threat not only to the people of the world but to all ecosystems. Anxiety increases about the threat of these weapons being used not only by nation states but also by terrorists. Computer technology is increasingly powerful in weapons and the conduct of war. Warfare is televised live as it happens as smart bombs

fall on cities well removed from the bombers and the viewers. This culture of warfare and weaponry is characterised by an increasing level of distancing of those who use or support the use of the weapons from those who suffer the effects of them (Barbour 1993, 164). It is one of the most shocking aspects of the instrumentalism of technological culture that those injured or killed in war are rendered faceless and anonymous. War, as reported live, is dangerously close to a form of entertainment and is mimicked in video and computer games. The cleverness and devastation of military technology is regarded with pride as well as fear. This is accompanied by what Barbour calls, "psychic numbing and denial" as we feel profoundly powerless and paralysed in the face of the threat of weapons of mass destruction (205).

The fear of military technology has also increased our obsession with protecting our own security. As Barns points out, the very military technology that is supposed to increase our security also erodes it. "This continuing background reality of an overarching nuclear threat demonstrates the paradox that developments in technology, ostensibly intended to increase our security have also dramatically escalated the threats to personal and collective security. There is a continuing spiral of technological innovation in forms of violence, including an inexorable expansion of systems of state control, surveillance and law enforcement" (2001, 79). This involves constructing a protective blanket not only around our national borders but also our homes.

The concern with security has permeated many aspects of our lives from the protection of our homes and possessions to attempts, through insurance, to safeguard ourselves from any misfortune. This security is founded on an individualism that seeks security in protective isolation from others and is marked by a denial of our basic interconnectedness with others, near and far. Barns identifies three ways in which our technological society's preoccupation with security, law enforcement and surveillance reveals its underlying technicity (80). First, control becomes an end in itself. Second, there is a weakening of the community-based institutions and practices experienced in dealing with conflict resolution. Third, our peace, property and security are grounded in an ontology of violence.

Lyon (2001), in his book on the surveillance society, discusses how surveillance is directed more to control than care of people. In a world of electronic communication, our bodies are "disappearing" from view. Lyon suggests that there is a corresponding effort by social agencies in technological societies to compensate for the phenomenon of "disappearing bodies" by using "surveillance practices as a means of making visible that which is being lost from their sight" (15). He suggests that this surveillance is more concerned with the classification of people and not care and love for the other.

> Contemporary surveillance has a bias towards control, suspicion, seduction and a utilitarian obsession with the statistical norm. To ask what might happen if surveillance were guided by an ontology of peace rather than violence, an ethic of care rather than of control, an orientation towards forgiveness rather than suspicion may appear as a weak alternative. But weak in what sense? Is the only conceivable action to counterpose dominative power with its equal? (2001, 153).

In seeking to answer his own question, Lyon looks to "the world of spiritual life and of theological thought ... [to provide] elements of a vocabulary that could assist" and concludes, "Where humans are seen as embodied persons, where the face-to-face is privileged over abstract communication, justice over automated classification, and communal involvement over technical imperatives there are strong hints of hope" (153–154). These are all elements of *koinonia.*

Ambler suggests that the very terror of sophisticated weapons has the capacity to jolt us into embracing new patterns of behaviour (1988, 73). If human beings were to confront fully and honestly the danger posed to the earth's survival by nuclear and other weapons, we may be motivated to take another course based on trust and cooperation. His hope in the power of human self-awareness echoes that of Heidegger, who argues that the first step towards countering technological culture is first to see it for what it is.

Preoccupation with security is a form of idolatry. Speaking of nuclear deterrence as the state's attempt to achieve peace and security, Ruston says, "This attempt to control the future by manipulating ultimate forces is another mark of idolatry" (1988, 161). He suggests that this idolatry can only be resisted by the church, which has the capacity to transcend state boundaries and which can call on its tradition of practical wisdom and its key practices of justice, charity and peacemaking (162). "[A] view of peace which sees it founded in just relations and self-determination is central to our biblical tradition in a way that a view of peace which sees it as order imposed by force from above is not" (163). This does not mean that we are called to retreat into the churches, to separate religion from politics, but rather to actively resist the dominant ideology of security.

Borgmann notes that in pretechnological times, security was sought in the "goodwill and charity of parents, siblings, or neighbours" whereas now we have reduced it to the commodity of insurance cover (1984b, 117). He comments, "[S]ecurity from the vicissitudes of life was not the task of a certain class of people but a mutual responsibility of all. The insurance industry ... split off and took over a task from each of us and freed and impoverished us all at once" (118). This insight can be applied to the search for peace and security

from the personal to the global level. There is decreasing reliance on healthy and cooperative interrelations with others for our peace and wellbeing and an increasing reliance on the protection of technological solutions that have the effect of eroding, even poisoning, our relations with others.

The peace of *koinonia* is radically different from this fragile and fearful peace. It finds its basis in communion—communion with God and communion with others. It is built on recognition and respect rather than fear and violence. It requires humility rather than arrogance, forgiveness rather than vengeance, reconciliation rather than alienation. The peace of *koinonia* is the peace found among the persons of the Trinity. This peace, which passes all understanding, originates from God. "The eucharist thus enacts a mode of peaceful living in the world confident that it is God's peace and not the apparent dominance of the world's violence which is fundamental" (Barns 2001, 81).

How might this culture of peace and reconciliation be practised in our world today? This is, of course, an enormous question as conflict runs deep at all levels in our world. As Yoder puts it, "To be human is to be in conflict, to offend and to be offended. To be human in the light of the gospel is to face conflict in redemptive dialogue. When we do that, it is God who does it. When we do that, we demonstrate that to process conflict is not merely a palliative strategy for tolerable survival or psychic hygiene, but a mode of truth-finding and community-building" (1994, 13). Our culture of *koinonia* challenges us to resist placing our trust in structures of security and patterns of violence that divide our community and instead to seek our peace in the building up of our community, local and global, through the nurturing of recognition and respect. Security is to be sought in strong social and ecological relationships and ultimately in the knowledge and love of God. Politics guided by recognition and respect is less likely to invest the world's resources in increasingly sophisticated weapons and systems of security and surveillance and more likely to develop networks of mutual support and understanding. "Only a vision of our interconnectedness with all people and all forms of life can empower us to try to make a catastrophe impossible by getting rid of these weapons" (Barbour 1993, 205).

6.2.6 The Culture of Celebration

The gathering of a church community in worship is ultimately an act of celebration, a celebration of God's love for the world. While being grounded in focal things and focal practices—the bread and wine, the order of the service—its fundamental focus is God whom we come to worship. The celebration of the church is, therefore, God-centred rather than

self-centred. It is the celebration of *koinonia*. It is intrinsically communal, embracing not only the living but also the dead. "[A] hallmark of the experience of praising God is that it is intrinsically linked with other people." (Hardy and Ford 1984, 10). Are there, or could there be, echoes of this culture of celebration in our daily lives?

Borgmann suggests that technological culture makes it difficult for a culture of celebration to flourish (2003, 35–62). Technology has a propensity to divide labour from leisure and public life from private life. It changes our landscapes so that freeways and high-rise buildings dictate our public spaces and diffuse the social centre of our lives together. Shopping malls and supermarkets and the corresponding impersonal nature of buying and selling do not provide the interchange, the building of relationship and community, implicit in a marketplace. The public realm is where we do our work and our shopping. The private realm is where we retreat to our houses, recover from our work and find our leisure. This daily division between private and public is antipathetic to the communal celebration found in the daily coming together of the community. Borgmann sums it up this way, "[I]f we are concerned to promote a more communal common order and if we agree that public celebration is at the heart of community, then we must recognize and take issue with modern technology and the public-private distinctions that both articulate and conceal it. The social distinction makes genuine public celebration impossible because the public realm is for production, not celebration, and though the private realm is for leisure, leisure is now commodious consumption, not festive engagement" (46).

Public communal celebrations are steadily being replaced by patterns of consumption of commodities, whether privately or communally. Community singing, social games and amateur theatre have been rendered redundant by the production of recorded music, televised sport, television and DVDs. While the excellence and spectacle of such products impress and dazzle us, we have lost sight of the quality of communal celebration and human skills that accompanied the older forms of entertainment and celebration.

Communal celebration is not something that can be packaged and sold for consumption by individuals. It needs to be grounded in the coming together of the community, "a group of people who are in one another's bodily presence and engaged in a common enterprise that is an end rather than a means" (47). It also needs to be focused on specific things. "It is a joyful engagement with the physical presence and radiance of that thing" (48). The physical setting of our cities needs to provide for a focused engagement with each other and with the world around us. A tennis court set in a public park is more conducive to this sort of festive and communal engagement than a room of video games in a shopping mall. The physical setting of a shopping mall is, in Borgmann's words, "indifferent" because it

is basically instrumental in its design (2003, 49). A public park with trees, gardens and places to meet and relax has a more intrinsic capacity for interaction and celebration. The design of public space has a strong bearing on our capacities for celebration. "To recover a public site for communal celebration is to restore public space from instrumentality to finality, from a transportation utility to a dwelling place" (61).

Celebration is still present in our daily lives but it is not accorded the status or the encouragement and resources to prosper it deserves. Rather celebration is being progressively supplanted by ever more sophisticated products of entertainment and diversion, leaving us "with a commodity guaranteed to excite and entertain" rather than a healthy community to mourn as well as dance with us. "As technology advances on celebration, the elements of genuine celebration—reality, community, and divinity—are weakened and eventually expelled" (Borgmann 1992, 134).

While the practice of communal worship is, ideally, the most profound expression of celebration, in practice it can often be dry, repetitive and even alienating. Our forms of worship need to echo and reflect the expressions of real celebration that survive and even flourish despite the dominance of our technological culture. Music, dance, art, language, festivals and other manifestations of communal creativity and celebrations can be incorporated into our styles of worship and so strengthen the link between our daily and our sacramental lives. The challenge is to discern what is true celebration grounded in *koinonia* and what is the distraction and diversion of a fragmented and consumerist technological culture. "[T]he public needs religious communities of celebration; religion, in turn, needs the inspiration of real and focal celebration" (53–54).

"Divinity and reality inspire community" (Borgmann 1992, 145). Praise of God and engagement in God's world is the basis of Christian celebration. In a culture where instrumentalism, individualism and idolatry are dominant, celebration arising from praise of God is not nurtured. As Hardy and Ford put it, "In a society dominated by efficiency and a functional assessment of everything, the whole ethos supports the despising of praise as futile" (Hardy and Ford 1984, 11).

The cultures of word, table, body, vocation and peace form aspects of the overarching culture of celebration. Each of them flow from our joy in praise of God. Each forms a part of the celebration of the Eucharist. Each is an expression of *koinonia*, the community of celebration.

6.3 Conclusion

The very dailyness of technological culture can render us blind to its effects on our relationships with each other, the world and with God. Developing cultures of *koinonia* involves opening our eyes to the ways in which our daily technology can shape the pattern of our lives and then making intentional choices to nurture daily and ecclesial practices that build up our community and give praise to God. A technological world-view is thereby denied dominance, and is replaced by a world-view that understands human beings as the created co-creator whose vocation is to honour and nurture the *koinonia* of God's creation.

The culture of the table leads us to understand the natural world that sustains us as a gift to be cherished rather than a resource to be exploited. At the economic and ecological level, this has implications for the ways we farm the land and the sea and share their bounty, generate our energy, transport our food, and deal with our waste. At the social level, it has implications for the way we offer the hospitality of the meal table, recognising the meal shared in gratitude to God as an expression of *koinonia*. These daily activities find their echo and their amplification in the sharing of the bread and the wine of the Eucharist.

The culture of the word leads us to understand the importance of communication which facilitates the encountering and the discernment of truth and love in our relationships with each other and with God. This has implications for the ways we understand the possibilities and limitations of electronic communication, communication that connects yet separates us. The Word of God is embodied and shared in the gathering of the community.

The culture of the body leads us to understand our bodies not as autonomous mechanisms to be perfected and preserved but as part of God's community called upon to love and care for each other. It also leads us to accept and celebrate our createdness and finitude in the knowledge that, through baptism, we are identified with the resurrection of Christ. This has implications for our expectations and demands of medical technology, for the ways in which we feed, exercise and clothe our bodies and for the patience we bring to our living.

The culture of vocation reminds us of our calling to be the created co-creator. This is a vocation we share and live out in co-operation. It is in this vocation that we find our identity and worth. This vocation is not necessarily identical with our daily work. Whether our

individual work is part of that vocation will depend on its capacity to enable us to honour God and serve each other.

The culture of peace leads us to understand that our peace is found in God and is expressed in strong mutually supportive relationships. It is not found in the fearful security of military technology and systems of insurance, control and surveillance. This has implications for conflict resolution and peacemaking from the domestic to the international levels of life. Peace is not to be found in technical solutions but in the nurturing of communion.

The culture of celebration leads us to understand the importance of the gathering of the community to celebrate the *koinonia* that finds its origin in God. This has implications for urban planning, architecture and the provision of parks and public spaces, as celebration requires places and opportunities for people to gather. It is in our worship as the gathered community of the church that our celebration of God's love and grace is most intensely focused.

The culture of *koinonia*, then, is both a world-view and a lifestyle. It celebrates our vocation as created co-creator and honours the importance of focal things and practices that manifest loving relationships with God and God's creation. It challenges the dominance of our technological ways of seeing and being that deny and distort creation's relatedness.

[Chapter 7]

Epilogue

This thesis seeks to contribute to the development of a theology of technology. Its critique of technological culture brings into view characteristics of technological culture that are so embedded in daily life that they are not commonly discussed. Its consideration of the trinitarian doctrine of creation makes available theological resources for understanding the nature of human creativity. The subsequent cross-fertilisation of ideas from the philosophy of technology and the theology of creation provides the basis for a theology of technology based on the concept of natural relationality.

A significant characteristic of technological culture is the denial or distortion of the dynamic of relatedness between and among the triune God, humankind and the created world. This is manifested through an instrumentalist view of the world and an idolatry of humankind's technological capacities. Technological culture hinders us from seeing, acknowledging and working in accordance with our relatedness to each other, the world and God. The development of a theology of technology requires us to become actively aware of technological culture and its effect on the world-view and lifestyle of human beings.

The doctrine of creation reveals the importance of trinitarian relationality in understanding creation. Otherness-in-relation is a guiding principle, therefore, in the role of human beings and our creativity. It follows that our technological culture is not a true expression of human creativity as long as it denies or damages the relatedness of human beings with God and the world around them.

The theology of technology proposed in this thesis, therefore, takes natural relationality as its guiding principle. It proposes that for human beings to be truly creative we need to recognise and respect God, each other and the world around us as others-in-relation. This principle arises from a trinitarian understanding of the doctrine of creation whereby the communion of the triune God is echoed in all of creation. The vocation of human-

kind is to be created co-creators, fully cognisant of our contingency upon God and our inter-relatedness with all creatures. This vocation is christologically grounded and has an eschatological orientation. Our creativity is profoundly relational and finds its source and inspiration in our experience of Christ and the inspiration of the Spirit.

Having outlined this direction for a theology of technology, the thesis suggests some implications for the self-understanding and life of the church. The church needs to be mindful of ways in which technological culture deflects it away from manifesting the communion, the dynamic of relatedness, that comes from God. *Koinonia*, founded on recognition and respect of God, each other and the created world, was proposed as the specific quality of natural relationality that the church is called to embody and practise. By nurturing *koinonia* both within its fellowship and in relation to the world, the church may avoid instrumentalism and idolatry. This world-view and lifestyle of *koinonia* encourages a sacramental lifestyle whereby our daily practices are informed by our liturgical ones, and vice versa.

This theology of technology points to the importance of daily things and practices in our recognition and respect of the dynamic of relatedness of God's creation. That is, a theology of technology draws attention to the way both the material world and simple daily practices are important in shaping culture and expressing creativity. The ways in which we eat and drink, communicate with each other, view and treat our bodies, approach our work, resolve conflict and celebrate are all expressions of our createdness, our creativeness and our relatedness. These can be expressions of *koinonia* or they can be distorted by technological culture. If they are true expressions of *koinonia*, they find their counterparts in the sacraments of the liturgy.

This theology of technology shows some traditional theological dualisms are unnecessarily rigid. A trinitarian understanding of the doctrine of creation, and its emphasis on relationality, demonstrates that the dualisms of creation and redemption, transcendence and immanence, substance and relation, church and world, and natural and revealed theology are unhelpful in understanding God's relationship with God's creation. The theology of technology of this thesis brings a holistic approach that modifies these polarisations.

The thesis does not attempt to address the ethical implications of a theology of technology. That is the task of future research. However, it has provided an overarching question to bring to the ethics of technology. As human beings, cognisant of our common vocation to be the created co-creator, participate in shaping the future of God's world, how are we to recognise, respect and nurture relationships of *koinonia* with each other, the world around

us and with God? The key insight emerging from this thesis is that human creativity is profoundly relational. True creativity is an expression of our relatedness to God and God's creation. Whenever our technological world-view and activities deny this relatedness, we fail to be creative and we fail to live in the image of God.

References

Abrecht, Paul, ed. 1980. *Faith and Science in an Unjust World: Report of the World Council of Churches' Conference on Faith, Science and the Future*. Vol. 2. Geneva: World Council of Churches.

Alston, William P. 1999. Substance and the Trinity. In *The Trinity: An Interdisciplinary Symposium on the Trinity*, edited by Stephen T. Davis, Daniel Kendall SJ, and Gerald O'Collins SJ. Oxford: Oxford University Press.

Ambler, Rex. 1988. Reasons for Not Despairing. In *Theology against the Nuclear Horizon*, edited by Alan Race. London: SCM Press Ltd.

Audi, Robert, ed. 1995. *The Cambridge Dictionary of Philosophy*. Cambridge: Cambridge University Press.

Augustine. 1963. *The Trinity*. Translated by Stephen Mc Kenna. Washington DC: The Catholic University of America Press.

Barbour, Ian G. 1980. *Technology, Environment, and Human Values*. Westport, Connecticut: Praeger.

———. 1990. *Religion in an Age of Science*. San Francisco: HarperSanFrancisco.

———. 1993. *Ethics in an Age of Technology*. San Francisco: HarperSanFrancisco.

———. 1996. *Issues in Science and Religion*. San Francisco: Harper Torchbooks.

———. 1997. Ways of Relating Science and Theology. In *Physics, Philosophy, and Theology: A Common Quest for Understanding*, edited by Robert J. Russell, William R. S. J. Stoeger, and George V. S. J. Coyne. 3rd ed. Vatican City State: Vatican Observatory.

———. 2000. *When Science Meets Religion*. New York: HarperSanFrancisco.

Barns, Ian. 1999. Eschatological Hope and Ecological Justice. *Ecotheology* (5-6):173–184.

———. 2001. Living Christianly in a Technological World. Unpublished paper.

Barr, James. 1993. *Biblical Faith and Natural Theology*. Oxford: Clarendon Press.

Bauman, Zygmunt. 1993. *Postmodern Ethics*. Oxford: Blackwell Publishers.

Berdyaev, Nicolas. 1937. *The Destiny of Man*. London: Geoffrey Bles.

Birch, Charles. 1980. Nature, Humanity and God in Ecological Perspective. In *Faith and Science in an Unjust World*, edited by Roger L. Shinn. Vol. 1. Geneva: World Council of Churches.

Birch, Charles, and John B. Cobb Jr. 1981. *The Liberation of Life*. Cambridge: Cambridge University Press.

Borgmann, Albert. 1984a. Prospects for the Theology of Technology. In *Theology and Technology*, edited by Carl Mitcham and Jim Grote. Lanham, Maryland: University Press of America.

———. 1984b. *Technology and the Character of Contemporary Life: A Philosophical Inquiry*. Chicago: The University of Chicago Press.

———. 1992. *Crossing the Postmodern Divide*. Chicago: The University of Chicago Press.

———. 1995. The Moral Significance of the Material Culture. In *Technology and the Politics of Knowledge*, edited by Andrew Feenberg and Alastair Hannay. Bloomington and Indianapolis: Indiana University Press.

———. 1996. Technology and the Crisis of Contemporary Culture. *American Catholic Philosophical Quarterly* (70 Supp.):33–44.

———. 1999. *Holding on to Reality: The Nature of Information at the Turn of the Millennium*. Chicago: The University of Chicago Press.

———. 2000. Reply to My Critics. In *Technology and the Good Life?*, edited by Eric Higgs, Andrew Light, and David Strong. Chicago: University of Chicago Press.

———. 2003. *Power Failure: Christianity in the Culture of Technology*. Grand Rapids: Brazos Press.

Borgmann, Albert, and Carl Mitcham. 1987. The Question of Heidegger and Technology. *Philosophy Today* 31 (Summer):98–194.

Buber, Martin. 1970. *I and Thou*. Translated by Walter Kaufmann. Edinburgh: T&T Clark.

Buckley, James J., and David S. Yeago. 2001. Introduction: A Catholic and Evangelical Theology? In *Knowing the Triune God: The Work of the Spirit in the Practices of the Church*, edited by James J. Buckley and David S. Yeago. Grand Rapids: William B. Eerdmans Publishing Company.

Callahan, Daniel. 1987. *Setting Limits: Medical Goals in an Aging Society*. New York: Simon and Schuster.

Campbell, Richard. 2003. Truth, Process and Faithfulness. In *God Down Under: Theology in the Antipodes*, edited by Winfred Wing Han Lamb and Ian Barns. Adelaide: ATF Press.

Clifford, Anne M. 1991. Creation. In *Systematic Theology: Roman Catholic Perspectives*, edited by F. S. Fiorenza and J. P. Galvin. Vol. 1. Minneapolis: Fortress Press.

Connell, George. 1999. Against Idolatory: Heidegger and Natural Theology. In *Postmodern Philosophy and Christian Thought*, edited by Merold Westphal. Bloomington and Indianapolis: Indiana University Press.

Crouch, Andy. 2001. Promises, Promises. *Christianity Today* 45 (3):72.

Cunningham, David S. 1998. *These Three Are One: The Practice of Trinitarian Theology*. Oxford: Blackwell Publishers.
Cutcliffe, Stephen H., and Carl Mitcham, eds. 2001. *Visions of STS: Counterpoints in Science, Technology and Society Studies*. Albany: State University of New York Press.
Davis, Howard, and David Gosling. 1985. Introduction. In *Will the Future Work? Values for Emerging Patterns of Work and Employment*, edited by Howard Davis and David Gosling. Geneva: World Council of Churches.
Davison, Aidan. 2001. *Technology and the Contested Meanings of Sustainability*. Albany: State University of New York Press.
Dawn, Marva J. 1999. *A Royal "Waste" of Time: The Splendor of Worshiping God and Being Church for the World*. Grand Rapids, Michigan: William B. Eerdmans Publishing Company.
Dickson, David. 1974. *Alternative Technology and the Politics of Technical Change*. Glasgow: Fontana.
Dreyfus, Hubert L. 1995. Heidegger on Gaining a Free Relation to Technology. In *Technology and the Politics of Knowledge*, edited by Andrew Feenberg and Alastair Hannay. Bloomington and Indianapolis: Indiana University Press.
Edwards, Denis. 1999. *The God of Evolution: A Trinitarian Theology*. Mahwah, New Jersey: Paulist Press.
Ellul, Jacques. 1965. *The Technological Society*. Translated by John Wilkinson. London: Jonathan Cape.
———. 1970. *The Meaning of the City*. Translated by Dennis Pardee. Grand Rapids: William B. Eerdmans Publishing Company.
———. 1976. *The Ethics of Freedom*. Translated and edited by Geoffrey W. Bromiley. Grand Rapids: William B. Eerdmans Publishing Company.
———. 1980. *The Technological System*. Translated by Joachim Neugroschel. New York: Continuum.
———. 1981. *Perspectives on Our Age*. New York: The Seabury Press.
———. 1984. The Relationship between Man and Creation in the Bible. In *Theology and Technology*, edited by Carl Mitcham and Jim Grote. Lanham: University Press of America.
———. 1989. *What I Believe*. Translated by Geoffrey W. Bromiley. Grand Rapids: William B. Eerdmans Publishing Company.
———. 1990. *The Technological Bluff*. Translated by Geoffrey W. Bromiley. Grand Rapids, Michigan: William B. Eerdmans Publishing Company.
Farley, Edward. 1975. *Ecclesial Man: A Social Phenomenology of Faith and Reality*. Philadelphia: Fortress Press.

Feenberg, Andrew. 2000. From Essentialism to Constructivism: Philosophy of Technology at the Crossroads. In *Technology and the Good Life?*, edited by Eric Higgs, Andrew Light, and David Strong. Chicago: The University of Chicago Press.

Ford, David F. 1995. What Happens in the Eucharist? *Scottish Journal of Theology* 48 (3):359–381.

Fuellenbach, John. 2002. *Church: Community for the Kingdom*. New York: Maryknoll.

Gaillardetz, Richard R. 2000. *Transforming Our Days: Spirituality, Community, and Liturgy in a Technological Culture*. New York: The Crossroad Publishing Company.

Goddard, Andrew. 1996. Obituary: Jacques Ellul (1912–1994). *Studies in Christian Ethics* 9 (1):140–153.

Gorringe, T. J. 2002. *A Theology of the Built Environment: Justice, Empowerment, Redemption*. Cambridge: Cambridge University Press.

Graham, Elaine L. 2002. *Representations of the Post/Human: Monsters, Aliens and Others in Popular Culture*. Manchester: Manchester University Press.

Graham, Gordon. 1999. *The Internet: A Philosophical Inquiry*. London: Routledge.

Gunton, Colin. 1989. The Church on Earth: The Roots of Community. In *On Being the Church: Essays on the Christian Community*, edited by Colin E. Gunton and Daniel W. Hardy. Edinburgh: T&T Clark.

———. 1991. *The Promise of Trinitarian Theology*. Edinburgh: T&T Clark.

———. 1992. *Christ and Creation*. Carlisle: The Paternoster Press.

———. 1993. *The One, the Three and the Many: God, Creation and the Culture of Modernity*. Cambridge: Cambridge University Press.

———. 1996. Towards an Eschatology of the Human Person. In *Beyond Mere Health: Theology and Health Care in a Secular Society*, edited by Hilary D. Regan, Rodney B. Horsfield, and Gabrielle L. McMullen. Melbourne: Australian Theological Forum.

Hardy, Daniel W. 1980. Christian Affirmation and the Structure of Personal Life. In *Belief in Science and in Christian Life*, edited by Thomas F. Torrance. Edinburgh: The Handsel Press.

———. 1989. Created and Redeemed Sociality. In *On Being the Church: Essays on the Christian Community*, edited by Colin E. Gunton and Daniel W. Hardy. Edinburgh: T&T Clark.

———. 1996. A Magnificent Complexity. In *Essentials of Christian Community*, edited by David F. Ford and Dennis L. Stamps. Edinburgh: T&T Clark.

———. 2001. *Finding the Church: The Dynamic Truth of Anglicanism*. London: SCM Press.

Hardy, Daniel W., and David F. Ford. 1984. *Jubilate: Theology in Praise*. London: Darton Longman and Todd.

Hartshorne, Charles. 1948. *The Divine Relativity*. New Haven: Yale University Press.

Hauerwas, Stanley. 1990. *God, Medicine, and Suffering*. Grand Rapids: William B. Eerdmans Publishing Company.

———. 1996. Practicing Patience: How Christians Should Be Sick. In *Beyond Mere Health: Theology and Health Care in a Secular Society*, edited by Hilary D. Regan, Rodney B. Horsfield, and Gabrielle L. Mc Mullen. Melbourne: Australian Theological Forum.

———. 2001. *With the Grain of the Universe: The Church's Witness and Natural Theology*. Grand Rapids: Brazos Press.

Hefner, Philip. 1993. *The Human Factor: Evolution, Culture, and Religion*. Minneapolis: Fortress Press.

———. 2002. Technology and Human Becoming. *Zygon* 37 (3):655–665.

Heidegger, Martin. 1966. *Discourse on Thinking*. Translated by John M. Anderson and Freund E. Hans. New York: Harper and Row.

———. 1971. The Thing. In *Poetry, Language, Thought*, edited by Albert Hofstadter. New York: Harper and Row.

———. 1977. The Turning. In *Martin Heidegger: The Question Concerning Technology and Other Essays*, translated by William Lovitt. New York: Harper & Row.

———. 1993a. Buiding Dwelling Thinking. In *Basic Writings from Being and Time (1927) to The Task of Thinking (1964)*, edited by David Farrell Krell. 2nd ed. San Francisco: HarperCollins.

———. 1993b. The End of Philosophy and the Task of Thinking. In *Basic Writings from Being and Time (1927) to The Task of Thinking (1964)*, edited by David Farrell Krell. 2nd ed. San Francisco: HarperCollins.

———. 1993c. Letter on Humanism. In *Basic Writings from Being and Time (1927) to The Task of Thinking (1964)*, edited by David Farrell Krell. 2nd ed. San Francisco: HarperCollins.

———. 1993d. The Question Concerning Technology. In *Martin Heidegger: Basic Writings: From Being and Time (1927) to the Task of Thinking (1964)*, edited by David Farrell Krell. 2nd ed. San Francisco: HarperCollins.

———. 1993e. What Is Metaphysics? In *Basic Writings from Being and Time (1927) to The Task of Thinking (1964)*, edited by David Farrell Krell. 2nd ed. San Francisco: HarperCollins.

Hickman, Larry. 2000. Focaltechnics, Pragmatechnics, and the Reform of Technology. In *Technology and the Good Life?*, edited by Eric Higgs, Andrew Light, and David Strong. Chicago: The University of Chicago Press.

Higgs, Eric, Andrew Light, and David Strong. 2000. Introduction. In *Technology and the Good Life?*, edited by Eric Higgs, Andrew Light, and David Strong. Chicago: The University of Chicago Press.

Horne, Brian. 1997. Divine and Human Creativity. In *The Doctrine of Creation: Essays in Dogmatics, History and Philosophy*, edited by Colin E. Gunton. Edinburgh: T&T Clark.

Iranaeus. 1885. Against Heresies. In *Ante-Nicene Fathers*, edited by A. Roberts and J. Donaldson. Vol. 1. Boston: The Christian Literature Publishing Company.

Johnson, Elizabeth A. 1992. *She Who Is: The Mystery of God in Feminist Theological Discourse*. New York: Crossroad.

Jones, Gregory. 1997. A Thirst for God or Consumer Spirituality? Cultivating Disciplined Practices of Being Engaged by God. *Modern Theology* 13 (1):3–28.

Kateb, George. 1997. Technology and Philosophy. *Social Research* 64 (3):1225–1246.

Keifer, Ralph A. 1976. Now the Sacred Words Are Done: Liturgy in a Post-Translation Era. *Living Worship* 12 (5):1–4.

Kenneson, Philip D. 1993. Selling (Out) the Church in the Marketplace of Desire. *Modern Theology* 9 (4):319–348.

Komesaroff, Paul A. 1995. Introduction: Postmodern Ethics. In *Troubled Bodies: Critical Perspectives on Postmodernism, Medical Ethics, and the Body*, edited by Paul A. Komesaroff. Carlton: Melbourne University Press.

LaCugna, Catherine M. 1973. *God for Us: The Trinity and Christian Life*. New York: HarperSanFrancisco.

Lathrop, Gordon W. 1993. *Holy Things: A Liturgical Theology*. Minneapolis: Fortress Press.

———. 1999. *Holy People: A Liturgical Ecclesiology*. Minneapolis: Fortress Press.

Ledger, Christine. 1981. Science, Technology, and a Just, Participatory and Sustainable Society. Honours thesis. Perth, WA: Murdoch University.

———. 1985. The Anglican Church of Australia and the Nuclear Debate. Masters thesis. Sydney: The University of New South Wales.

Lindberg, David C., and Ronald Numbers, eds. 1986. *God and Nature: Historical Essays on the Encounter between Christianity and Science*. Berkeley: University of California Press.

Lønning, Per. 1989. *Creation—An Ecumenical Challenge?* Macon, Georgia: Mercer University Press.

Lovitt, William. 1977. Introduction. In *Martin Heidegger: The Question Concerning Technology and Other Essays*, translated by William Lovitt. New York: Harper & Row.

Lyon, David. 1988. *The Information Society: Issues and Illusions*. Cambridge: Polity Press.

———. 2001. *Surveillance Society: Monitoring Everyday Life*. Buckingham: Open University Press.

Malet, André. 1984. The Believer in the Presence of Technique. In *Theology and Technology*, edited by Carl Mitcham and Jim Grote. Lanham: University Press of America.

McCullough, Glen. 2002. Heidegger, Augustine, and Poesis: Renewing the Technological Mind. *Theology Today* 59 (1):21–38.

McFague, Sallie. 1993. *The Body of God: An Ecological Theology*. Minneapolis: Fortress Press.

Meeks, M. Douglas. 1989. *God the Economist: The Doctrine of God and Political Economy*. Minneapolis: Fortress Press.

Mitcham, Carl, and Jim Grote, eds. 1984. *Theology and Technology*. Lanham: University Press of America.

Moltmann, Jürgen. 1985. *God in Creation: An Ecological Doctrine of Creation*. Translated by Margaret Kohl. London: SCM Press.

Neville, David. 1994. Confronted with New Perspectives: Reading Jacques Ellul. *Faith and Freedom* 3 (4):24–28.

Ng, Kam Weng. 2003. Co-creator or Priestly Steward: Theological Perspectives on Biotechnology. In *Beyond Determinism and Reductionism: Genetic Science and the Person*, Edited by Mark L.Y. Chan and Roland Chia. Adelaide: ATF Press.

Niles, Preman. 1989. *Resisting the Threats to Life: Covenanting for Justice, Peace and the Integrity of Creation*. Geneva: WCC Publications.

Noble, David F. 1997. *The Religion of Technology: The Divinity of Man and the Spirit of Invention*. New York: Alfred A. Knopf.

O'Leary, Stephen D. 1996. Cyberspace as Sacred Space: Communicating Religion on Computer Networks. *Journal of the American Academy of Religion* 64 (4):781–808.

Ormerod, Neil. 2003. Augustine and the Trinity. *Pacifica* 16 (1):17–32.

Pannenberg, Wolfhart. 1985. *Anthropology in Theological Perspective*. Edinburgh: T&T Clark Ltd.

———. 1991. *Systematic Theology*. Translated by Geoffrey W. Bromiley. Vol. 1. Grand Rapids, Michigan: William B. Eerdmans Publishing Company.

———. 1993. *Toward a Theology of Nature: Essays on Science and Faith*. Edited by Ted Peters. Louisville, Kentucky: Westminster/John Knox Press.

———. 1994. *Systematic Theology*. Translated by Geoffrey W. Bromiley. Vol. 2. Grand Rapids, Michigan: William B. Eerdmans Publishing Company.

Paulsell, Stephanie. 2002. *Honoring the Body: Meditations on a Christian Practice*. San Francisco: Jossey-Bass.

Peacocke, Arthur. 1993a. Foreword to *The Human Factor: Evolution, Culture, and Religion*, edited by Philip Hefner. Minneapolis: Fortress Press.

———. 1993b. *Theology for a Scientific Age: Being and Becoming—Natural, Divine, and Human*. Minneapolis: Fortress Press.

Pelikan, Jaroslav. 1990. Creation and Causality in the History of Christian Thought. *Southwestern Journal of Theology* 32 (Spring):10–16.

Peters, Ted. 1993. *God as Trinity: Relationality and Temporality in Divine Life*. Louisville: Westminster/John Knox Press.

———. 1997. Cloning Shock: A Theological Reaction. In *Human Cloning: Religious Responses*, edited by Ronald Cole-Turner. Louisville: Westminster John Knox Press.

———. 2000. *God—The World's Future*. 2nd ed. Minneapolis: Fortress Press.

———. 2003. *Science, Theology, and Ethics*. Burlington: Ashgate.

Peters, Ted, and Gaymon Bennett. 2003. Defining Human Life: Cloning, Embryos, and the Origins of Dignity. In *Beyond Determinism and Reductionism: Genetic Science and the Person*, Edited by Mark L.Y. Chan and Roland Chia. Adelaide: ATF Press.

Pickard, Stephen. 1996. The Trinitarian Dynamics of Belief. In *Essentials of Christian Community*, edited by David F. Ford and Dennis L. Stamps. Edinburgh: T&T Clark.

Pinnock, Clark H. 1996. *Flame of Love: A Theology of the Holy Spirit*. Downer Grove, Illinois: InterVarsity Press.

Polkinghorne, John. 1999. *Science and Theology: An Introduction*. Minneapolis: Fortress Press.

Postman, Neil. 1993. *Technopoly: The Surrender of Culture to Technology*. New York: Alfred A. Knopf.

Powell, Samuel M. 2003. *Participating in God: Creation and Trinity*. Minneapolis: Fortress Press.

Roberts, Richard H. 1996. A Postmodern Church? Some Preliminary Reflections on Ecclesiology and Social Theory. In *Essentials of Christian Community*, edited by David. F. Ford and Dennis L. Stamps. Edinburgh: T&T Clark Ltd.

Ruston, Roger. 1988. The Idols of Security. In *Theology against the Nuclear Horizon*, edited by Alan Race. London: SCM Press Ltd.

Schumacher, Ernst F. 1973. *Small Is Beautiful: Economics as if People Mattered*. New York: Harper and Row.

———. 1980. *Good Work*. London: Abacus.

Schwöbel, Christoph. 1997. God, Creation and Christian Community: The Dogmatic Basis of a Christian Ethic of Createdness. In *The Doctrine of Creation*, edited by Colin E. Gunton. Edinburgh: T&T Clark.

Scott, Peter. 2003a. Nature, Technology and the Rule of God: (En)countering the Disgracing of Nature. In *Re-ordering Nature: Theology, Society and the New Genetics*, edited by Celia Deane-Drummond and Bronislaw Szerszynski with Robin Grove-White. Edinburgh: T&T Clark.

———. 2003b. *A Political Theology of Nature*. Cambridge: Cambridge University Press.

Senn, Frank C. 1999. *A Stewardship of the Mysteries*. New York: Paulist Press.

Shinn, Roger L., ed. 1980. *Faith and Science in an Unjust World: Report of the World Council of Churches' Conference on Faith, Science and the Future*. Vol. 1. Geneva: World Council of Churches.

Smith, Gregory Bruce. 1991. Heidegger, Technology and Postmodernity. *Social Science Journal* 28 (2):369–389.

Stivers, Richard. 2001. *Technology as Magic: The Triumph of the Irrational*. New York: Continuum.

Strong, David. 2000. Philosophy in the Service of Things. In *Technology and the Good Life?*, edited by Eric Higgs, Andrew Light, and David Strong. Chicago: The University of Chicago Press.

Strong, David, and Eric Higgs. 2000. Borgmann's Philosophy of Technology. In *Technology and the Good Life?*, edited by Eric Higgs, Andrew Light, and David Strong. Chicago: The University of Chicago Press.

Studebaker, Steve. 2003. Jonathan Edward's Social *Augustinian* Trinitarianism: An Alternative to a Recent Trend. *Scottish Journal of Theology* 56 (3):268–285.

Sturm, Douglas. 1984. Jacques Ellul. In *A Handbook of Christian Theologians*, edited by Dean G. Peerman and Martin E. Marty. Nashville: Abingdon Press.

Suchocki, Marjorie Hewitt. 1997. Introduction. In *Trinity in Process: A Relational Theology of God*, edited by Joseph A. S. J. Bracken and Marjorie Hewitt Suchocki. New York: Continuum.

Tacey, David. 2003. *The Spirituality Revolution: The Emergence of Contemporary Spirituality*. Sydney: HarperCollinsPublishers.

Thiselton, Anthony C. 1994. Barr on Barth and Natural Theology: A Plea for Hermeneutics in Historical Theology. *Scottish Journal of Theology* 47 (4):519–528.

Thomson, Heather. 2000. Signifying Nothing?: A Reconstruction of the Doctrine of the *Imago Dei*. PhD thesis. Bathurst, NSW: Charles Sturt University.

Torrance, Thomas F. 1984. *Transformation and Convergence in the Frame of Knowledge: Explorations in the Interrelations of Scientific and Theological Enterprise*. Grand Rapids: W.B. Eerdmans Publishing Company.

Urmson, J. O., and Jonathan Rée, eds. 1991. *The Concise Encyclopedia of Western Philosophy and Philosophers*. London: Unwin Hyman.

Wajcman, Judy. 1991. *Feminism Confronts Technology*. North Sydney: Allen & Unwin.

Welker, Michael. 1994. *God the Spirit*. Translated by John F. Hoffmeyer. Minneapolis: Fortress Press.

Westermann, C. 1974. *Creation*. London: SPCK.

White, Lynn Jr. 1967. The Historical Roots of Our Ecological Crisis. *Science* (155):1203–1207.

Whitehead, Alfred North. 1929. *Process and Reality: An Essay in Cosmology*. London: Cambridge University Press.

Williams, Rowan. 1996. Sacraments of the New Society. In *Christ: The Sacramental Word*, edited by David Brown and Ann Loades. London: SPCK.

Willoughby, Kelvin W. 1990. *Technology Choice: A Critique of the Appropiate Technology Movement*. Boulder & San Francisco: Westview Press.

Wilson, Jonathan R. 1998. *Gospel Virtues: Practicing Faith, Hope and Love in Uncertain Times*. Downers Grove, Illinois: InterVarsity Press.

Winner, Langdon. 1978. *Autonomous Technology* . Cambridge, Massachusetts: The MIT Press.

———. 1986. *The Whale and the Reactor: A Search for Limits in an Age of High Technology*. Chicago: The University of Chicago Press.

Yoder, John Howard. 1994. *Body Politics: Five Practices of the Christian Community before the Watching World*. Nashville: Discipleship Resources.

Yong, Amos. 2002. *Spirit-Word-Community: Theological Hermeneutics in Trinitarian Perspective*. Aldershot: Ashgate Publishing Company.

Zizioulas, John D. 1985. *Being as Communion*. London: Darton, Longman and Todd.