God and the Chip: Religion and the Culture of Technology. By William A. Stahl. Waterloo, ON: Canadian Corporation for Studies in Religion/Corporation Canadienne des Sciences Religieuses and Wilfrid Laurier Press, 1999. ISBN: 0-88920-321-0. Pp. 198.

William Stahl has written an ambitious and thought-provoking work that seeks to cut through the hyperbole and cheerleading prevalent in so many books on computers and technology. *God and the Chip* is an attempt to understand the new "culture of technology" as a form of "implicit religion." The agenda of this small book is ambitious. Stahl hopes to bring the sociology of religion in conversation with a recently developed field, Science, Technology and Society Studies (STS) in order to address a fundamentally philosophical question: what is the good society and how can we pursue it? From the sociology of religion, he adopts the "implicit religion" perspective, an approach that looks at symbols and rituals "directed to the numinous that are often unrecognized because they occur outside of formal religious organizations." From STS, he takes the concept of constructivism, the idea that both society and technology are socially constructed and mutually interdependent in a dialectical relationship in which society shapes technology and technology shapes society. Their interrelation is not determined but open and it is up to the scholar to discover it in any given moment in history.

In the present moment, Stahl argues, technology is looked at with an almost religious faith. The "One True Faith" today, he argues, is not Islam or Christianity, Liberalism or Marxism, but "technological mysticism: faith in the universal efficacy of technology." Held equally by capitalists and communists, workers and owners, the rich and poor, the One True Faith's most potent icon is the computer. Hence the title of his book: *God and the Chip*.

Stahl first looks at how people speak and write about computer technology and analyzes their discourse to find the latent religious content. In this interesting and convincing chapter, he examines the various "computopias" of thinkers such as Yoneji Masuda, Edward Feigenbaum and Pamela McCorduck, K. Eric Drexler, Nicholas Negroponte, and Frank Ogden. Stahl argues that the "technological mysticism" of these so-called "visionaries" leads them to paint utopias that look remarkably like the present; they forecast "change without transformation" and extrapolate "the logic of the present." He locates the discourse of these new visionaries in the context of the history of utopian literature and notes their structure closely follows that of the chiliastic visions of the High Middle Ages. Like those religious prophecies, the new stories convince us that the world is on the brink of a great transformation; a new age that is even now breaking in upon the present. To thrive, or even survive, in the new world, individuals have to make a choice, a commitment to the new which promises a "this-worldly" salvation. The choice for salvation, both the medieval and modern prophets warn, must be made now. Either we join the information

revolution or we are left behind: roadkill on the information superhighway, techno-peasants in the new order.

Stahl argues that technological mysticism, like religion, functions to ground identity. And since our male-dominated culture and technology are dialectically related, it should come as no surprise that technologies are gender-typed. He discusses the computer as the masculine machine and asks why computing (outside of the secretarial task of word-processing) is seen as a man's game. I teach at St. Jerome's University, a Catholic university federated with the University of Waterloo, which houses Canada's most elaborate computer science departments. The UW administration has established a committee to examine why so few women are registered in our computer science programmes. Stahl's response is that computing is a masculine culture. He examines advertisements in computer magazines from 1992–93 and shows that women are portrayed much less frequently in those ads (as are people of colour). This is particularly true in advertisements for computer games where the ratio is one woman to every 11.75 men. Ads for computer games tend to portray women as sex objects. (They are also frequently racist.) Finally computer ads (whether for games or business applications) display an obsession with power: "power over," power to control, power in the form our society identifies as masculine. In any case, women feel excluded from the computer games culture, which Stahl identifies as the entry-level for most hackers.

The final element in the mystification of computer technology is the subtext of magic that runs through most discussions of it. Stahl's second case study is an analysis of the language used to describe computers in Time magazine from 1979 to the late 1980s. He found that 36 percent of articles used explicitly magical or religious language to describe computers. He argues that this magical language served to portray computers as a "magical black box," a source of hope in an increasingly dark decade of economic stagnation and socio-political regression. The discourse of magic reinforces the veneration of the black box and closes down critical thinking about computer technology as a culture.

For all of its scientific and technological trappings, Stahl argues, the new technological mysticism around computers represents a return of the repressed; it is a return of religion and myth in an allegedly secular and rational world. The myth that best defines the modern world's fascination with computers is the Faust story. Having reached the limits of human knowledge, Faust turns to magic and sells his soul. Faust has a naive belief in knowledge and power; he assumes that if he is not happy or good, more power is the answer. He does not see himself as a potential source of evil; he does not see that life is too complicated to be so easily controlled. The power he sought to obtain and control turns on him and it costs him dearly. The Faust myth, Stahl writes, is an appropriate warning to us.

After his social scientific exploration of computer culture, Stahl turns to philosophy and ethics in a chapter on George Grant, Frederick Ferré and Ursula Franklin. Stahl uses the two philosophers and the metallurgist to frame his own critique of technology and to suggest guidelines for a more critical ap-

proach to technology, one that serves the common good and respects human agency and freedom. In his final chapter, "Technology and the Good Society," Stahl suggests the development of a wisdom tradition that would subject technology to an ethical critique. But, as he argues, there is no critique of technology that is not also a critique of society. He invites his reader to a dialogue on the "good society" and what place technology has in that society. Only such a dialogue can free us from a passive technological determinism that is not really natural or determined by the technology itself. It is the discourse of the elite, disguised once again as "common sense," universal reason, and "nature."

Stahl's book is an ambitious project that crosses several academic boundaries. He is bound to be criticized by specialists in each discipline. Many religious studies scholars will object to the "implicit religion" perspective, an approach that I too find unconvincing. Philosophers will challenge his reading of Grant, Ferré and others. Such are the challenges in publishing a multi-disciplinary work. Some social scientists will find his "social constructivism" model too constraining or not clearly enough defined. Others may wonder why, in a book on computer technology, the market plays such a small role. As the economist Richard Heilbroner points out, the capitalist economy virtually guarantees an environment of continual and accelerating change. Surely this is why technology is proceeding at such break-neck speed. Stahl addresses the market on several occasions but could have done more. And almost everyone will wonder about his chapter-length discussions of two rather idiosyncratic case studies. The arguments of both chapters are valid; but they do not seem to belong in this book.

Stahl has written a courageous and important book. It is an important step in creating a dialogue on the relationship between technology and society. It would serve as a great book for a senior undergraduate or M.A. class on technology and society or on social ethics. Stahl covers a variety of topics concisely and cogently. One cannot help but admire the attempt to bring together ideas from such separate and divergent disciplines. Even if one does not fully agree with the "implicit religion" approach, one will find something interesting and useful in this insightful analysis.

David Seljak St. Jerome's University

Augustine through the Ages: An Encyclopedia. Allan D. Fitzgerald, General Editor. John Cavadini, Marianne Djuth, James J. O'Donnell and Frederick Van Fleteren, Associate. Editors. Grand Rapids: Wm. B. Eerdmans, 1999. ISBN 0-8028-2843-X. Pp. il+902.

"Mentitur qui totum te legisse fatetur / Aut quis cuncta tua lector habere potest? [He lies who says he's read all of you / or which reader is able to possess the whole of you?]." These lines were penned by St. Isidore of Seville (c. 560–636)