1. INTRODUCTION

Artificial Intelligence is a branch of computer science which is attempting to make machines intelligent, and in so doing, to cast light on the mysteries of biological intelligence. This valiant enterprise has not escaped the critical eye of the philosophers over the years, some of whom have attempted to show that certain claims of the intelligists (AI researchers) are excessive. (See for example, Searle 1981, Dennett 1981, Dreyfus 1986 and the replies of the intelligists, Hofstadter 1981, Gregory 1987). However, this article does not address itself to such traditional "philosophical-AI" concerns as the mind-brain distinction, the freedom of the will, or the impossibility or otherwise of artificial intelligence. It assumes that artificial intelligence is a reasonable endeavor, and raises new questions concerning the moral consequences for humanity when AI eventually succeeds.

A revolution is taking place in the field of Artificial Intelligence. This revolution, called "Connectionism", attempts to understand the functioning of the human brain in terms of interactions between artificial abstract neuron-like components, and hopes to provide computer science with design principles sufficiently powerful to be able to build genuine artificial electronic (optical, molecular) brains (Kohonen 1987, McClelland et al 1986, Mead 1987). Progress in microelectronics and related fields, such as optical computing, has been so impressive over the last few years, that the possibility of building a true artilect within a human generation or two becomes a real possibility and not merely a science fiction pipe dream.

However, if the idea of the 21st century artilect is to be taken seriously (and a growing number of Artificial Intelligence specialists are doing just that (Michie 1974, Waltz 1988, De Garis 1989), then a large number of profound political and philosophical questions arise. This paper addresses itself to some of the philosophical and moral issues concerning the fundamental question "Who or what is to be dominant species on this planet — human beings or the artilects?"

2. A MORAL DILEMMA

In order to understand the disquiet which has been growing amongst an increasing number of intelligists (specialists in Artificial Intelligence) around the world in the late 1980s (Waltz 1988, De Garis 1989), it is