If gender ever becomes an issue for discussion at all for most AI and computer science professionals it is only in regards to how to get more women involved in the field. AI has prided itself in its removal from the messy real world problems of embodied, gendered, brains, in favor of the study of the formal description of intelligence. But, if Alison Adam is right, then the study of AI, and computer science by extension, is actually unjustified in believing that its object of study has nothing to do with the social world of which gender is a part. Adam argues persuasively for the position that the reason women may not be attracted to the field is that AI specifically, and computer science in general, is the manifestation of a number of prevalent social and philosophical movements that have not been friendly to women's interests. This is just one facet of Adam's work. Parallel to this argument is an interesting positive claim that if AI where to take feminist epistemological issues to heart it might be able to move forward more quickly towards its goals of accurately modeling human intelligence.

There will be two general types of readers interested in this work, one whom is familiar with feminist writings but not conversant in AI research and the adventurous AI, A-Life, Cognitive Scientist and Computer Science researcher whom will probably not be familiar with feminist theories. Both types of readers are catered to as Adam provides a good review of the important works in both fields in the first two chapters of this book. Both types of readers should be able to find something of interest in this important and unique book.

Adam's argument turns on the premise that AI and its related disciplines such as A-Life and Cognitive Science are founded on the assumption that what is important about studying intelligence is discovering the formal descriptions of the rules upon which intelligence and consciousness emerge. This view grew out of early modern philosophy and modern epistemology and philosophy of language. Studies in feminist epistemology have been highly critical of this tradition because it has little to say about the informal skill based knowledge that seems to make up the majority of our interactions with the world and each other. Their claim is that this type of knowledge has been historically seen to be the realm of the feminine and therefore of lesser importance than the masculine realm of pure reason. Adam traces the evolution of traditional epistemology and then shows how deeply embedded these ideas are in CYC and SOAR, two of the most important projects in mainstream AI research. Adam then describes the shortcomings of both of these projects and makes the claim that it is precisely their uncritical acceptance of traditional philosophy that has lead to the impasses experience in mainstream AI.

To strengthen her case, Adam enlists the aid of various phenomenological arguments against AI. Briefly stated, AI up to very recently has been the study of disembodied formal descriptions of intelligence and the modeling of those theories on computing machinery. Phenomenologists such as Hubert Dreyfus have heavily criticized this view on the grounds that our body and its situatedness in the world are indispensable in the evolution of our mind and any attempt to understand the mind divorced from the body is doomed to failure. Furthermore, this argument suggests much of our embodied knowledge resists explanation through symbolic logical representation, which is the backbone of traditional AI, and so it is forever beyond the grasp of mainstream AI research. While this argument has not convinced the hard core of AI practitioners, it nonetheless has influenced some younger researchers in the field.

Those researchers in AI that have taken the claims of the Phenomenologists seriously have begun to develop alternatives to traditional AI such as Situated Robotics and Artificial Life. Both of which attempt to address the role of the body, or at least the rudiments of a body, in the simulation of intelligence and the study of the mind. Adam suggests that even though this is a step in the right

Reviewed by:
John Sullins
Jsullins@ix.netcom.com

direction we have to go further and, taking a cue from feminist standpoint epistemology, not only embed our simulated intelligences in a body but in a society as well. The purpose of this move is the next logical extension of the critique begun by the Phenomenologists. If we believe the Phenomenologists and see that the body and its relation to the world are crucial elements of intelligence, then our roles and membership in various societies, that are an important element of the human relation to the world, must be worked into our simulations of human intelligence.

Those are the strong points of Adam's book. There are points in Adam's book however, where she explores the more radical postmodern philosophies and comes dangerously close to accepting certain radical brands of relativism. These arguments remain unconvincing and will provide her critics with a too easy target. Her main arguments, however, can stand without recourse to the highly contentious radical postmodern claims and the latter could have been left out, or only referenced tangentially, to make a stronger book.

Adam's *Artificial Knowing*, is a well-crafted and readable book. It has done an admirable job of cutting through the mountains of material that compose both AI and Feminist studies and drawing connections between these seemingly disparate fields. This book also challenges both feminist and AI doctrines. Adam makes the claim that Feminists have to come to grips with the study of technology. Despite the general distrust many Feminists have of the traditionally masculine controlled technoscience institutions in our society, she urges a more techno-savy feminism. Adam acknowledges and supports the other feminist writers that argue for this view such as Donna Haraway and Lucy Suchman, and her book is an excellent addition to this movement within Feminism.

Included in her book are some pragmatic examples of how AI projects informed by Feminist concerns might proceed. She ends the book by describing a number of projects that use standard AI expert systems technology to address issues in Feminist linguistics and Jurisprudence. Adam succeeds in showing how these two seemingly unrelated disciplines can be used together resulting in improvements to both.

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