?In the evolution of computer ethics there has been an intermittent discussion of the statement that "Computer ethics is unique". The discussion seems to re-emerge with each new change in technology and change in predominant area of interest about the way computers are changing our social institutions. One of the earliest positive definitions of computer ethics was given by James Moor [1985]. In this paper Moor argues that computer ethics is unique by first defining a computer ethics situation as one in which a computer is "essentially involved".Such an approach appears to place computer ethics as an "umbrella" discipline unique in its holistic form but not when decomposed. ?Huff and Finholt[1994] adopt a different stance. They focus on the computer professional, suggesting there are three areas of commitment in the search for excellence: commitment to designing and implementing a quality product, awareness of ethical issues in design and implementation, and concern about the social context that influences the use of computing. This appears to be an approach of practical usefulness recognizing that the field requires some special attention given its special characteristics. This approach is similar to the work of Gotterbarn [1992] in this area who is concerned with the way in which computer professionals undertake their work so that the outcomes of their endeavors are socially and ethically acceptable. ?Anderson [1994] suggests that computer ethics applies not just to computer professionals but to all who use computers or come into contact with their inputs and outputs which means every one living in industrialized societies. It is this, the last part of his definition, that restricts the focus in a potentially dangerous manner as it does not take into account the needs or impacts on the world at large simply focusing attention on the industrial society. ?Spinello [1995] explains that any technology tends to create a new human environment and never more so ? 4 of 8 ?16/2/2002 6:30 ii ?TEACHING\CE\cepe file:///El/users/gouscos/daiadeoocieaeU/Aeaass...he Evolution of the Uniqueness Revolution.htm ?than computing. He is concerned that this new environment does not violate personal rights or the values of fairness and justice. He insists on the inclusion of all stakeholder considerations when deciding upon technological issues and appears to advocate a Rawlsian approach. ?Miller provides some interesting input to the computer ethics debate [Collins and Miller 1992, Collins, Miller et al 1994]. He suggests that software is different from other manufactured products and thus raises different and difficult ethical issues. He further suggests that such issues can be addressed in a rational and systematic manner and advocates a method for ethical decision making that is computing-specific. Without doubt there is an implicit uniqueness claim in these suggestions. ?It can be seen from this brief review that there are many views of what computer ethics comprises. This richness of opinion is probably due to a difference in perception of computing characteristics, the adopted focus – broadly split between the outcome/symptom of computing or the undertaking of computing, and the disciplinary background. Starting points are certainly different and include the properties of computer technology, the concept of computing, the application of computing and the human value impact of computing. The perspectives can be analyzed using several sub categories: ?social – considering the computing-impact on society professional – considering the manner of professional activity universal activist – inclusive of communities around the globe parochial – restricted consideration of current and future issues ethics only – drawing only from ethics theory multi-disciplinary – blending theory from several disciplines ?So from this we can determine that, for example, Moor adopts a universal conceptual multi-disciplinary

stance, Gorniak adopts an environmental universal ethicist stance, Maner is a properties ethicist and so on. What does this mean regarding the uniqueness claim? Those that have a very strong emphasis on the technological makeup are likely to see computing as unique [for example, Maner and to a lesser extent Oz]. Those adopting a universal stance are more likely to subscribe to elements of uniqueness [for example, Bynum, Gorniak and Moor]. Those who have strong application elements in their stance are more likely to question the wholly unique position [for example, Johnson, Huff & Finholt and Gotterbarn]. ?In the context of this paper, it is interesting to analyze to what purpose these particular stances have been put. It is clear that the all the authors reviewed in this paper have argued a particular stance to explain why and how certain situations and decisions have occurred and to give some insight to the future. It is also clear that these stances have then been used to substantiate the importance of a particular direction of computer ethics or justify some holistic label for computer ethics. The table below shows, for each author, the main thrust with respect to uniqueness and the underlying message as to the nature of computer ethics that the uniqueness stance has been used to justify and promote. For example, Johnson's genus–species stance is the justification for using existing theory for computer ethics in other words the "use the old order" holistic label.can lead to such radically different conclusions about the viability and nature of the subject "computer ethics". There are even those (for example Oz) who have used all the uniqueness variants to promote an inclusive form of computer ethics. How can there be such diverse conclusions drawn from such a simple statement? William James, the great American philosopher, said that many philosophical problems can be solved if we clearly define the question . ?The Variety of Answers ?The variety of interpretations of the uniqueness claim can be approached from several directions. We present the views of several authorities in compute ethics. We consider their starting positions, the resultant perspectives that they adopt and use these to identify the overall view of computer ethics each of them promotes. ?In 1985, Deborah Johnson considered computer ethics to be a study into the way in which computers pose new versions of standard moral problems and moral dilemmas that resulted in having to apply moral norms in new situations. Her stance allows little room for the concept of computer ethics uniqueness. This stance is modified in the second edition of her book [1994] in that more emphasis is put on computer ethics being concerned with new species of problems. This evolution of stance continues in her work with Keith Miller [1996]. ?Johnson and Miller explain that computing has fundamentally changed who we are as individuals, communities and nations and that computing has challenged and modified social culture, laws, economics and politics. They 
?explain that computer ethics is about working on something new whilst drawing on something old. Significantly they state that most computing issues can be understood using traditional moral concepts but there are special features that make a moral difference. The implication is that if most are covered, have analogies with standard ethical issues, some must not be covered and these therefore are unique. They also recognize that the issues are significant in their own right and are thus arguing for the existence of a type of uniqueness. In addition to the way computers transform some social issues, they explain that issues arise in unique ways that computer professionals must address in the course of their

work. It is clear that the genus–species argument has thus evolved to recognize there is a kind of uniqueness in computer ethics and that there is some recognition it is multifaceted. ?Moor[1985] advocates that the field is concerned with policy vacuums and conceptual muddles regarding the social and ethical use of computing. Moor appears to be suggesting that there is the possibility of new situations but does not advocate abandoning existing theories to address these new situations which is the possible course of action that Gorniak [1996] proposes. Moor also implies that addressing these issues will require an amalgam of disciplines. ?Oz [1994] claims that it is the speed of change which has left a big ethical vacuum and this has meant it is difficult to address issues of misuse that inevitably follow the advent of this universal tool [Moor 1985]. Oz describes three categories of misuse requiring ethical consideration:offences that existed before the advent of computers but were facilitated by computers, offences against computers, computer equipment and software, and the invasion of privacy. The first of these is the genus–species concept, the second includes offences that did not exist before the advent of computers such as the destruction of computer files and the illegal copying of software, and the final one is a specific fundamental human right. Oz is unique in that all of the varieties of the uniqueness claim are maintained simultaneously. ?Maner [1990] started to define an area of study that could be labelled computer ethics. In a later paper, Maner [1996] advocates that computer ethics examines the ethical problems aggravated , transformed or created by computing and that the "Lack of an effective analogy forces us to discover new moral values, formulate new moral principles, develop new policies, and find new ways to think ...".This is an example of one difference in CEIU, namely some interpret CEIU to mean "Computers have made an evolutionary change in the ethical landscape and we have to work hard using traditional ethics to remap that landscape", while others interpret CEIU to mean that "Computers have made a revolutionary change in the ethical landscape such that the principles space and time can no longer be used to guide us in traversing the landscape." The evolutionary version of CEIU is about particular ethical decisions, while the revolutionary version is about the methodology of ethical reasoning. ?This is but one of several variations in CEIU. In this paper, we maintain that: ?this is not a simple statement, but that it has several quite distinct meanings, ?1 of 8 16/2/2002 6:30 ii ?TEACHING\CE\cepe file:///El/users/gouscos/daiadeoocieaeU/Aeaass...he Evolution of the Uniqueness Revolution.htm ?this assertion has some significant and dangerous consequences, ?until these meanings of uniqueness are clearly defined, discussions based on CEIU results in inconsistencies and a failure to understand the consequences of this claim, and ?the revolutionary interpretation of CEIU has not yet been proven. ?2 CEIU: traditional responses ?2.1 The assertion of CEIU is benign ?Discussions about the uniqueness of computer ethics is sometimes viewed by philosophers and novice computer ethics scholars as just another benign philosophical discussion. The answer to this question is viewed as simply a part of the definition of computer ethics. Saying computer ethics is unique is almost like giving an ostensive definition. ?People who have dealt with this question have rarely claimed to be establishing results in the discipline of computer ethics. CEIU's primary use is as a justification for the discipline of computer ethics or the study of these special unique problems. The uniqueness discussion is sometimes viewed as so irrelevant to the progress of the discipline, that the discussants show little interest in how others have approached the question or in testing the correctness or precise meaning of other's claims

that computer ethics is unique. This claim is sometimes made to justify the creation of another discipline or academic department, for example, Walter Maner [1995] states, " Computer ethics is unique so its study is justified."Deborah Johnson[1997] recently suggested that several aspects of the Internet have had an impact on the issues within computer ethics She appeals to the pervasive "anonymity" of individuals and "reproducibility" of information in ways not possible without the Internet. Krystyna Gorniak [1996] also appeals to the Internet and argues that there are no good analogies available for cyber-situations. ?On the surface it may appear that these authors are making similar claims based on the deceptively simple claim "Computer ethics is unique" (Hereafter CEIU).Bynum's stance of computing being all pervasive is used to argue that computer ethics is about the human values and technology equation whilst pervasiveness is used by Anderson to promote the idea that computer ethics is important for all people in a technologically-dependent world ?A Range of Views ?The evidence for the whole panorama of uniqueness claims is drawn either from some special characteristic about the computer or from the type and pervasiveness of the impact on social institutions.?Donn Parker was one of the early writers about ethical issues in computing..