Why People Copy Software and Create Computer Viruses: Individual Characteristics or Situational Factors?*

SUSAN J. HARRINGTON
Kent State University
Stark and Kent Campuses

Individual and situational variables are examined as factors in the behavior of computer users, namely copying of software (programs) and destruction of computer data by distributing destructive programs (viruses). The results of this research indicate that situational independent variables do explain much of the variance in copying of software, but individual variables do not. However, the individual variable of sex is strongly related to the dependent variable of distributing destructive programs. Relatively few situational variables are related. The fact that software copying has no perceptible impact on fellow computer users, whereas spreading viruses has a serious, destructive impact, suggests that the perceived impact on others may provide a clue as to when individual variables are dominant and when situational variables predominate. Thus, this study provides some evidence in support of the model proposed and suggests that both a developmental and situational approach to the behavior of computer users may be appropriate.

Introduction

The advent of computer technology is posing new ethical challenges for individuals and businesses. Primary among these challenges are issues related to the copying of software and deliberate destruction of computer data. This preliminary research examines individual and situational variables that affect an individual’s propensity to copy software and to destroy computer data by distributing destructive programs (called viruses). Existing research in moral development and in deviant behavior provide a basis for the study of an individual’s tendency to commit unethical computer acts, while research considering the relationship between behavior and the situational environment offers guidelines for investigating situational influences.

Organizations are struggling with the dilemma of software protection. Despite the use of copyrighting, there is widespread evidence of copying of software (Archambeault & Archambeault, 1984), and vendors are justifiably con-

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cerned. Vendors have alternated between copy protecting their software (to prevent computer users from copying the software) and not copy protecting because of the annoyance it may cause to legitimate purchasers. Nevertheless, the primary impact is on vendors through the loss of income. Copying software has no direct negative effect on computer users, and most copying is done by computer users to avoid paying the price of purchasing the software.

Contrary to software copying, a direct negative effect has been felt by those subjected to destructive software programs. Recent publicity has focused on the actions of students who have created programs which destroy data of other computer users. The publicity has emphasized that these destructive computer programs are being spread so widely by college students that these programs have come to be termed “viruses.” One of the original viruses was created by two brothers in Pakistan who ran a store which sold software at cut-rate prices. Their motive was to “punish” computer users for buying and selling bootleg software, which deprives merchants of potential sales (Elmer-DeWitt, 1988). Others (e.g., Parker, 1976; President’s Council, 1986) have speculated that virus writers spread viruses for the mere challenge it offers and are typically men in their late teens or early twenties who have lived in a very protected world, both socially and emotionally.

**Overview of Past Research**

Extensive research has been conducted in individual moral development, particularly Kohlberg’s stage model of moral development (Colby & Kohlberg, 1987; Kohlberg & Kramer, 1969). Kohlberg provides a well-known model of cognitive moral development founded on the works of Piaget and has developed and tested the model over the last 20 years. In research that has explored the validity of the stage model, Kohlberg has found that age, socioeconomic status, and education are correlated with moral stage and thus are related to sociomoral perspectives and moral reasoning. Sociomoral perspective is the customary point of view of social fairness and behavioral guidelines held by a person, and so sociomoral perspective guides the person’s reasoning and moral judgments. The higher a person’s age, socioeconomic status, and education, the higher is the expected sociomoral perspective and stage. Therefore, it may be postulated that age, socioeconomic status, and education act as surrogates for moral stage.

Thus, hypotheses related to software copying and viruses were formed to test these findings as they relate to computer users:

H1: Lower age will be associated with higher levels of software copying.

H2: Lower age will be associated with higher levels of spreading viruses.

H3: A lower socioeconomic status will be associated with higher levels of software copying.

H4: A lower socioeconomic status will be associated with higher levels of spreading viruses.

H5: A lower level of education will be associated with higher levels of software copying.

H6: A lower level of education will be associated with higher levels of spreading viruses.

Although Kohlberg’s research has focused on male subjects, sex has been suggested to be related to sociomoral perspective (Gilligan, 1982). In addition, gender differences have been clearly shown in conduct disorders, including vandalism and stealing. Robins (1986) found that frequencies of stealing and vandalism among males with antisocial personalities were 28% for stealing and 7% for vandalism but among females only 12% and 1% respectively. The gender difference appears most strongly in
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