

Why software should be free



**ASSIGN
BUSTER**

Why Software Should Be Free by Richard Stallman (Version of April 24, 1992)

Introduction The existence of software inevitably raises the question of how decisions about its use should be made. For example, suppose one individual who has a copy of a program meets another who would like a copy. It is possible for them to copy the program; who should decide whether this is done? The individuals involved? Or another party, called the "owner"?

Software developers typically consider these questions on the assumption that the criterion for the answer is to maximize developers' profits.

The political power of business has led to the government adoption of both this criterion and the answer proposed by the developers: that the program has an owner, typically a corporation associated with its development. I would like to consider the same question using a different criterion: the prosperity and freedom of the public in general. This answer cannot be decided by current law--the law should conform to ethics, not the other way around. Nor does current practice decide this question, although it may suggest possible answers.

The only way to judge is to see who is helped and who is hurt by recognizing owners of software, why, and how much. In other words, we should perform a cost-benefit analysis on behalf of society as a whole, taking account of individual freedom as well as production of material goods. In this essay, I will describe the effects of having owners, and show that the results are detrimental. My conclusion is that programmers have the duty to encourage others to share, redistribute, study, and improve the software we write: in other words, to write "free" software.

1) How Owners Justify Their Power

Those who benefit from the current system where programs are property

offer two arguments in support of their claims to own programs: the emotional argument and the economic argument. The emotional argument goes like this: "I put my sweat, my heart, my soul into this program. It comes from me, it's mine!" This argument does not require serious refutation. The feeling of attachment is one that programmers can cultivate when it suits them; it is not inevitable. Consider, for example, how willingly the same programmers usually sign over all rights to a large corporation for a salary; the emotional attachment mysteriously vanishes. By contrast, consider the great artists and artisans of medieval times, who didn't even sign their names to their work. To them, the name of the artist was not important. What mattered was that the work was done--and the purpose it would serve. This view prevailed for hundreds of years. The economic argument goes like this: "I want to get rich (usually described inaccurately as 'making a living'), and if you don't allow me to get rich by programming, then I won't program.

Everyone else is like me, so nobody will ever program. And then you'll be stuck with no programs at all!" This threat is usually veiled as friendly advice from the wise. I'll explain later why this threat is a bluff. First I want to address an implicit assumption that is more visible in another formulation of the argument. This formulation starts by comparing the social utility of a proprietary program with that of no program, and then concludes that proprietary software development is, on the whole, beneficial, and should be encouraged.

The fallacy here is in comparing only two outcomes--proprietary software vs. no software--and assuming there are no other possibilities. Given a system of

software copyright, software development is usually linked with the existence of an owner who controls the software's use. As long as this linkage exists, we are often faced with the choice of proprietary software or none. However, this linkage is not inherent or inevitable; it is a consequence of the specific social/legal policy decision that we are questioning: the decision to have owners.

To formulate the choice as between proprietary software vs. no software is begging the question. The Argument against Having Owners The question at hand is, "Should development of software be linked with having owners to restrict the use of it?" In order to decide this, we have to judge the effect on society of each of those two activities independently: the effect of developing the software (regardless of its terms of distribution), and the effect of restricting its use (assuming the software has been developed).

If one of these activities is helpful and the other is harmful, we would be better off dropping the linkage and doing only the helpful one. To put it another way, if restricting the distribution of a program already developed is harmful to society overall, then an ethical software developer will reject the option of doing so. To determine the effect of restricting sharing, we need to compare the value to society of a restricted (i. e. , proprietary) program with that of the same program, available to everyone. This means comparing two possible worlds.

This analysis also addresses the simple counterargument sometimes made that "the benefit to the neighbor of giving him or her a copy of a program is cancelled by the harm done to the owner." This counterargument assumes that the harm and the benefit are equal in magnitude. The analysis involves

comparing these magnitudes, and shows that the benefit is much greater. To elucidate this argument, let's apply it in another area: road construction. It would be possible to fund the construction of all roads with tolls.

This would entail having toll booths at all street corners. Such a system would provide a great incentive to improve roads. It would also have the virtue of causing the users of any given road to pay for that road. However, a toll booth is an artificial obstruction to smooth driving-artificial, because it is not a consequence of how roads or cars work. Comparing free roads and toll roads by their usefulness, we find that (all else being equal) roads without toll booths are cheaper to construct, cheaper to run, safer, and more efficient to use. 2) In a poor country, tolls may make the roads unavailable to many citizens. The roads without toll booths thus offer more benefit to society at less cost; they are preferable for society. Therefore, society should choose to fund roads in another way, not by means of toll booths. Use of roads, once built, should be free. When the advocates of toll booths propose them as merely a way of raising funds, they distort the choice that is available. Toll booths do raise funds, but they do something else as well: in effect, they degrade the road.

The toll road is not as good as the free road; giving us more or technically superior roads may not be an improvement if this means substituting toll roads for free roads. Of course, the construction of a free road does cost money, which the public must somehow pay. However, this does not imply the inevitability of toll booths. We who must in either case pay will get more value for our money by buying a free road. I am not saying that a toll road is worse than no road at all. That would be true if the toll were so great

that hardly anyone used the road--but this is an unlikely policy for a toll collector.

However, as long as the toll booths cause significant waste and inconvenience, it is better to raise the funds in a less obstructive fashion. To apply the same argument to software development, I will now show that having ``toll booths'' for useful software programs costs society dearly: it makes the programs more expensive to construct, more expensive to distribute, and less satisfying and efficient to use. It will follow that program construction should be encouraged in some other way. Then I will go on to explain other methods of encouraging and (to the extent actually necessary) funding software development.

The Harm Done by Obstructing Software Consider for a moment that a program has been developed, and any necessary payments for its development have been made; now society must choose either to make it proprietary or allow free sharing and use. Assume that the existence of the program and its availability is a desirable thing. (3) Restrictions on the distribution and modification of the program cannot facilitate its use. They can only interfere. So the effect can only be negative. But how much? And what kind? Three different levels of material harm come from such obstruction:

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None of the users can adapt or fix the program. Other developers cannot learn from the program, or base new work on it. Each level of material harm has a concomitant form of psychosocial harm. This refers to the effect that people's decisions have on their subsequent feelings, attitudes, and predispositions. These changes in people's ways of thinking will then have a

further effect on their relationships with their fellow citizens, and can have material consequences. The three levels of material harm waste part of the value that the program could contribute, but they cannot reduce it to zero.

If they waste nearly all the value of the program, then writing the program harms society by at most the effort that went into writing the program. Arguably a program that is profitable to sell must provide some net direct material benefit. However, taking account of the concomitant psychosocial harm, there is no limit to the harm that proprietary software development can do. Obstructing Use of Programs The first level of harm impedes the simple use of a program. A copy of a program has nearly zero marginal cost (and you can pay this cost by doing the work yourself), so in a free market, it would have nearly zero price.

A license fee is a significant disincentive to use the program. If a widely-useful program is proprietary, far fewer people will use it. It is easy to show that the total contribution of a program to society is reduced by assigning an owner to it. Each potential user of the program, faced with the need to pay to use it, may choose to pay, or may forego use of the program. When a user chooses to pay, this is a zero-sum transfer of wealth between two parties. But each time someone chooses to forego use of the program, this harms that person without benefitting anyone. The sum of negative numbers and zeros must be negative.

But this does not reduce the amount of work it takes to develop the program. As a result, the efficiency of the whole process, in delivered user satisfaction per hour of work, is reduced. This reflects a crucial difference between copies of programs and cars, chairs, or sandwiches. There is no

copying machine for material objects outside of science fiction. But programs are easy to copy; anyone can produce as many copies as are wanted, with very little effort. This isn't true for material objects because matter is conserved: each new copy has to be built from raw materials in the same way that the first copy was built.

With material objects, a disincentive to use them makes sense, because fewer objects bought means less raw material and work needed to make them. It's true that there is usually also a startup cost, a development cost, which is spread over the production run. But as long as the marginal cost of production is significant, adding a share of the development cost does not make a qualitative difference. And it does not require restrictions on the freedom of ordinary users. However, imposing a price on something that would otherwise be free is a qualitative change.

A centrally-imposed fee for software distribution becomes a powerful disincentive. What's more, central production as now practiced is inefficient even as a means of delivering copies of software. This system involves enclosing physical disks or tapes in superfluous packaging, shipping large numbers of them around the world, and storing them for sale. This cost is presented as an expense of doing business; in truth, it is part of the waste caused by having owners. **Damaging Social Cohesion** Suppose that both you and your neighbor would find it useful to run a certain program.

In ethical concern for your neighbor, you should feel that proper handling of the situation will enable both of you to use it. A proposal to permit only one of you to use the program, while restraining the other, is divisive; neither you nor your neighbor should find it acceptable. Signing a typical software

license agreement means betraying your neighbor: ``I promise to deprive my neighbor of this program so that I can have a copy for myself. " People who make such choices feel internal psychological pressure to justify them, by downgrading the importance of helping one's neighbors--thus public spirit suffers.

This is psychosocial harm associated with the material harm of discouraging use of the program. Many users unconsciously recognize the wrong of refusing to share, so they decide to ignore the licenses and laws, and share programs anyway. But they often feel guilty about doing so. They know that they must break the laws in order to be good neighbors, but they still consider the laws authoritative, and they conclude that being a good neighbor (which they are) is naughty or shameful. That is also a kind of psychosocial harm, but one can escape it by deciding that these licenses and laws have no moral force.

Programmers also suffer psychosocial harm knowing that many users will not be allowed to use their work. This leads to an attitude of cynicism or denial. A programmer may describe enthusiastically the work that he finds technically exciting; then when asked, ``Will I be permitted to use it? ", his face falls, and he admits the answer is no. To avoid feeling discouraged, he either ignores this fact most of the time or adopts a cynical stance designed to minimize the importance of it. Since the age of Reagan, the greatest scarcity in the United States is not technical innovation, but rather the willingness to work together for the public good.

It makes no sense to encourage the former at the expense of the latter. Obstructing Custom Adaptation of Programs The second level of material

harm is the inability to adapt programs. The ease of modification of software is one of its great advantages over oldertechnology. But most commercially available software isn't available for modification, even after you buy it. It's available for you to take it or leave it, as a black box--that is all. A program that you can run consists of a series of numbers whose meaning is obscure. No one, not even a good programmer, can easily change the numbers o make the program do something different. Programmers normally work with the ``source code" for a program, which is written in a programming language such as Fortran or C. It uses names to designate the data being used and the parts of the program, and it represents operations with symbols such as '+' for addition and '-' for subtraction. It is designed to help programmers read and change programs. Here is an example; a program to calculate the distance between two points in a plane: float distance (p0, p1) struct point p0, p1; { float xdist = p1. x - p0. x; float ydist = p1. y - p0. ; return sqrt (xdist * xdist + ydist * ydist); } Here is the same program in executable form, on the computer I normally use: 1314258944 1411907592 - 234880989 1644167167 572518958 -232267772 -231844736 -234879837 - 3214848 -803143692 -231844864 2159150 -234879966 1090581031 1314803317 1634862 1420296208 -232295424 1962942495 Source code is useful (at least potentially) to every user of a program. But most users are not allowed to have copies of the source code. Usually the source code for a proprietary program is kept secret by the owner, lest anybody else learn something from it.

Users receive only the files of incomprehensible numbers that the computer will execute. This means that only the program's owner can change the

program. A friend once told me of working as a programmer in a bank for about six months, writing a program similar to something that was commercially available. She believed that if she could have gotten source code for that commercially available program, it could easily have been adapted to their needs. The bank was willing to pay for this, but was not permitted to--the source code was a secret.

So she had to do six months of make-work, work that counts in the GNP but was actually waste. The MIT Artificial Intelligence Lab (AI Lab) received a graphics printer as a gift from Xerox around 1977. It was run by free software to which we added many convenient features. For example, the software would notify a user immediately on completion of a print job. Whenever the printer had trouble, such as a paper jam or running out of paper, the software would immediately notify all users who had print jobs queued. These features facilitated smooth operation.

Later Xerox gave the AI Lab a newer, faster printer, one of the first laser printers. It was driven by proprietary software that ran in a separate dedicated computer, so we couldn't add any of our favorite features. We could arrange to send a notification when a print job was sent to the dedicated computer, but not when the job was actually printed (and the delay was usually considerable). There was no way to find out when the job was actually printed; you could only guess. And no one was informed when there was a paper jam, so the printer often went for an hour without being fixed.

The system programmers at the AI Lab were capable of fixing such problems, probably as capable as the original authors of the program. Xerox

was uninterested in fixing them, and chose to prevent us, so we were forced to accept the problems. They were never fixed. Most good programmers have experienced this frustration. The bank could afford to solve the problem by writing a new program from scratch, but a typical user, no matter how skilled, can only give up. Giving up causes psychosocial harm--to the spirit of self-reliance. It is demoralizing to live in a house that you cannot rearrange to suit your needs.

It leads to resignation and discouragement, which can spread to affect other aspects of one's life. People who feel this way are unhappy and do not do good work. Imagine what it would be like if recipes were hoarded in the same fashion as software. You might say, ``How do I change this recipe to take out the salt? '' and the great chef would respond, ``How dare you insult my recipe, the child of my brain and my palate, by trying to tamper with it? You don't have the judgment to change my recipe and make it work right! '' ``But my doctor says I'm not supposed to eat salt! What can I do? Will you take out the salt for me? ' ``I would be glad to do that; my fee is only \$50,000. '' Since the owner has a monopoly on changes, the fee tends to be large. ``However, right now I don't have time. I am busy with a commission to design a new recipe for ship's biscuit for the Navy Department. I might get around to you in about two years. ''

Obstructing Software Development

The third level of material harm affects software development. Software development used to be an evolutionary process, where a person would take an existing program and rewrite parts of it for one new feature, and then another person would rewrite parts to add another feature; in some cases, this continued over a period of twenty years. Meanwhile, parts of the

program would be ``cannibalized'' to form the beginnings of other programs. The existence of owners prevents this kind of evolution, making it necessary to start from scratch when developing a program. It also prevents new practitioners from studying existing programs to learn useful techniques or even how large programs can be structured. Owners also obstruct education. I have met bright students in computer science who have never seen the source code of a large program.

They may be good at writing small programs, but they can't begin to learn the different skills of writing large ones if they can't see how others have done it. In any intellectual field, one can reach greater heights by standing on the shoulders of others. But that is no longer generally allowed in the software field--you can only stand on the shoulders of the other people in your own company. The associated psychosocial harm affects the spirit of scientific cooperation, which used to be so strong that scientists would cooperate even when their countries were at war.

In this spirit, Japanese oceanographers abandoning their lab on an island in the Pacific carefully preserved their work for the invading U. S. Marines, and left a note asking them to take good care of it. Conflict for profit has destroyed what international conflict spared. Nowadays scientists in many fields don't publish enough in their papers to enable others to replicate the experiment. They publish only enough to let readers marvel at how much they were able to do. This is certainly true in computer science, where the source code for the programs reported on is usually secret.

It Does Not Matter How Sharing Is Restricted I have been discussing the effects of preventing people from copying, changing, and building on a

program. I have not specified how this obstruction is carried out, because that doesn't affect the conclusion. Whether it is done by copy protection, or copyright, or licenses, or encryption, or ROM cards, or hardware serial numbers, if it succeeds in preventing use, it does harm. Users do consider some of these methods more obnoxious than others. I suggest that the methods most hated are those that accomplish their objective.

Software Should be Free I have shown how ownership of a program--the power to restrict changing or copying it--is obstructive. Its negative effects are widespread and important. It follows that society shouldn't have owners for programs. Another way to understand this is that what society needs is free software, and proprietary software is a poor substitute. Encouraging the substitute is not a rational way to get what we need. Vaclav Havel has advised us to ``Work for something because it is good, not just because it stands a chance to succeed.' A business making proprietary software stands a chance of success in its own narrow terms, but it is not what is good for society. Why People Will Develop Software If we eliminate copyright as a means of encouraging people to develop software, at first less software will be developed, but that software will be more useful. It is not clear whether the overall delivered user satisfaction will be less; but if it is, or if we wish to increase it anyway, there are other ways to encourage development, just as there are ways besides toll booths to raise money for streets.

Before I talk about how that can be done, first I want to question how much artificial encouragement is truly necessary. Programming is Fun There are some lines of work that few will enter except for money; road construction, for example. There are other fields of study and art in which there is little

chance to become rich, which people enter for their fascination or their perceived value to society. Examples include mathematical logic, classical music, and archaeology; and political organizing among working people.

People compete, more sadly than bitterly, for the few funded positions available, none of which is funded very well. They may even pay for the chance to work in the field, if they can afford to. Such a field can transform itself overnight if it begins to offer the possibility of getting rich. When one worker gets rich, others demand the same opportunity. Soon all may demand large sums of money for doing what they used to do for pleasure. When another couple of years go by, everyone connected with the field will deride the idea that work would be done in the field without large financial returns.

They will advise social planners to ensure that these returns are possible, prescribing special privileges, powers, and monopolies as necessary to do so. This change happened in the field of computer programming in the past decade. Fifteen years ago, there were articles on "computer addiction": users were "onlining" and had hundred-dollar-a-week habits. It was generally understood that people frequently loved programming enough to break up their marriages. Today, it is generally understood that no one would program except for a high rate of pay.

People have forgotten what they knew fifteen years ago. When it is true at a given time that most people will work in a certain field only for high pay, it need not remain true. The dynamic of change can run in reverse, if society provides an impetus. If we take away the possibility of great wealth, then

after a while, when the people have readjusted their attitudes, they will once again be eager to work in the field for the joy of accomplishment. The question, ``How can we pay programmers? '' becomes an easier question when we realize that it's not a matter of paying them a fortune.

A mere living is easier to raise. Funding Free Software Institutions that pay programmers do not have to be software houses. Many other institutions already exist that can do this. Hardware manufacturers find it essential to support software development even if they cannot control the use of the software. In 1970, much of their software was free because they did not consider restricting it. Today, their increasing willingness to join consortiums shows their realization that owning the software is not what is really important for them.

Universities conduct many programming projects. Today they often sell the results, but in the 1970s they did not. Is there any doubt that universities would develop free software if they were not allowed to sell software? These projects could be supported by the same government contracts and grants that now support proprietary software development. It is common today for university researchers to get grants to develop a system, develop it nearly to the point of completion and call that ``finished'', and then start companies where they really finish the project and make it usable.

Sometimes they declare the unfinished version ``free''; if they are thoroughly corrupt, they instead get an exclusive license from the university. This is not a secret; it is openly admitted by everyone concerned. Yet if the researchers were not exposed to the temptation to do these things, they would still do their research. Programmers writing free software can make

their living by selling services related to the software. I have been hired to port the GNU C compiler to new hardware, and to make user-interface extensions to GNU Emacs. (I offer these improvements to the public once they are done. I also teach classes for which I am paid. I am not alone in working this way; there is now a successful, growing corporation which does no other kind of work. Several other companies also provide commercial support for the free software of the GNU system. This is the beginning of the independent software support industry--an industry that could become quite large if free software becomes prevalent. It provides users with an option generally unavailable for proprietary software, except to the very wealthy. New institutions such as the Free Software Foundation can also fund programmers.

Most of the Foundation's funds come from users buying tapes through the mail. The software on the tapes is free, which means that every user has the freedom to copy it and change it, but many nonetheless pay to get copies. (Recall that "free software" refers to freedom, not to price.) Some users who already have a copy order tapes as a way of making a contribution they feel we deserve. The Foundation also receives sizable donations from computer manufacturers. The Free Software Foundation is a charity, and its income is spent on hiring as many programmers as possible.

If it had been set up as a business, distributing the same free software to the public for the same fee, it would now provide a very good living for its founder. Because the Foundation is a charity, programmers often work for the Foundation for half of what they could make elsewhere. They do this because we are free of bureaucracy, and because they feel satisfaction in

knowing that their work will not be obstructed from use. Most of all, they do it because programming is fun. In addition, volunteers have written many useful programs for us. (Even technical writers have begun to volunteer. This confirms that programming is among the most fascinating of all fields, along with music and art. We don't have to fear that no one will want to program.

What Do Users Owe to Developers? There is a good reason for users of software to feel a moral obligation to contribute to its support. Developers of free software are contributing to the users' activities, and it is both fair and in the long-term interest of the users to give them funds to continue. However, this does not apply to proprietary software developers, since obstructionism deserves a punishment rather than reward. We thus have a paradox: the developer of useful software is entitled to the support of the users, but any attempt to turn this moral obligation into a requirement destroys the basis for the obligation. A developer can either deserve a reward or demand it, but not both. I believe that an ethical developer faced with this paradox must act so as to deserve the reward, but should also entreat the users for voluntary donations. Eventually the users will learn to support developers without coercion, just as they have learned to support public radio and television stations.

What Is Software Productivity? If software were free, there would still be programmers, but perhaps fewer of them. Would this be bad for society? Not necessarily. Today the advanced nations have fewer farmers than in 1900, but we do not think this is bad for society, because the few deliver more food to the consumers than the many used to do. We call this improved productivity. Free software would require far fewer programmers to satisfy

the demand, because of increased software productivity at all levels: • • • •
Wider use of each program that is developed.

The ability to adapt existing programs for customization instead of starting from scratch. Better education of programmers. The elimination of duplicate development effort. Those who object to cooperation claiming it would result in the employment of fewer programmers are actually objecting to increased productivity. Yet these people usually accept the widely-held belief that the software industry needs increased productivity. How is this? ``Software productivity'' can mean two different things: the overall productivity of all software development, or the productivity of individual projects.

Overall productivity is what society would like to improve, and the most straightforward way to do this is to eliminate the artificial obstacles to cooperation which reduce it. But researchers who study the field of ``software productivity'' focus only on the second, limited, sense of the term, where improvement requires difficult technological advances. Is Competition Inevitable? Is it inevitable that people will try to compete, to surpass their rivals in society? Perhaps it is. But competition itself is not harmful; the harmful thing is combat. There are many ways to compete.

Competition can consist of trying to achieve ever more, to outdo what others have done. For example, in the old days, there was competition among programming wizards--competition for who could make the computer do the most amazing thing, or for who could make the shortest or fastest program for a given task. This kind of competition can benefit everyone, as long as the spirit of good sportsmanship is maintained. Constructive competition is enough competition to motivate people to great efforts. A number of people

are competing to be the first to have visited all the countries on Earth; some even spend fortunes trying to do this.

But they do not bribe ship captains to strand their rivals on desert islands. They are content to let the best person win. Competition becomes combat when the competitors begin trying to impede each other instead of advancing themselves--when "Let the best person win" gives way to "Let me win, best or not." Proprietary software is harmful, not because it is a form of competition, but because it is a form of combat among the citizens of our society. Competition in business is not necessarily combat. For example, when two grocery stores compete, their entire effort is to improve their own operations, not to sabotage the rival.

But this does not demonstrate a special commitment to business ethics; rather, there is little scope for combat in this line of business short of physical violence. Not all areas of business share this characteristic. Withholding information that could help everyone advance is a form of combat. Business ideology does not prepare people to resist the temptation to combat the competition. Some forms of combat have been banned with anti-trust laws, truth in advertising laws, and so on, but rather than generalizing this to a principled rejection of combat in general, executives invent other forms of combat which are not specifically prohibited.

Society's resources are squandered on the economic equivalent of factional civil war. "Why Don't You Move to Russia?" In the United States, any advocate of other than the most extreme form of laissez-faire selfishness has often heard this accusation. For example, it is leveled against the supporters of a national healthcare system, such as is found in all the other

industrialized nations of the free world. It is leveled against the advocates of public support for the arts, also universal in advanced nations. The idea that citizens have any obligation to the public good is identified in America with Communism.

But how similar are these ideas? Communism as was practiced in the Soviet Union was a system of central control where all activity was regimented, supposedly for the common good, but actually for the sake of the members of the Communist party. And where copying equipment was closely guarded to prevent illegal copying. The American system of software copyright exercises central control over distribution of a program, and guards copying equipment with automatic copying-protection schemes to prevent illegal copying.

By contrast, I am working to build a system where people are free to decide their own actions; in particular, free to help their neighbors, and free to alter and improve the tools which they use in their daily lives. A system based on voluntary cooperation and on decentralization. Thus, if we are to judge views by their resemblance to Russian Communism, it is the software owners who are the Communists. The Question of Premises I make the assumption in this paper that a user of software is no less important than an author, or even an author's employer.

In other words, their interests and needs have equal weight, when we decide which course of action is best. This premise is not universally accepted. Many maintain that an author's employer is fundamentally more important than anyone else. They say, for example, that the purpose of having owners of software is to give the author's employer the advantage he deserves--

regardless of how this may affect the public. It is no use trying to prove or disprove these premises. Proof requires shared premises. So most of what I have to say is addressed only to those who share the premises I use, or at least are interested in what their consequences are.

For those who believe that the owners are more important than everyone else, this paper is simply irrelevant. But why would a large number of Americans accept a premise that elevates certain people in importance above everyone else? Partly because of the belief that this premise is part of the legal traditions of American society. Some people feel that doubting the premise means challenging the basis of society. It is important for these people to know that this premise is not part of our legal tradition. It never has been. Thus, the Constitution says that the purpose of copyright is to ``promote the progress of science and the useful arts. ' The Supreme Court has elaborated on this, stating in `Fox Film vs. Doyal' that ``The sole interest of the United States and the primary object in conferring the [copyright] monopoly lie in the general benefits derived by the public from the labors of authors. " We are not required to agree with the Constitution or the Supreme Court. (At one time, they both condoned slavery.) So their positions do not disprove the owner supremacy premise. But I hope that the awareness that this is a radical right-wing assumption rather than a traditionally recognized one will weaken its appeal.

Conclusion We like to think that our society encourages helping your neighbor; but each time we reward someone for obstructionism, or admire them for the wealth they have gained in this way, we are sending the opposite message. Software hoarding is one form of our general willingness

to disregard the welfare of society for personal gain. We can trace this disregard from Ronald Reagan to Jim Bakker, from Ivan Boesky to Exxon, from failing banks to failing schools. We can measure it with the size of the homeless population and the prison population.

The antisocial spirit feeds on itself, because the more we see that other people will not help us, the more it seems futile to help them. Thus society decays into a jungle. If we don't want to live in a jungle, we must change our attitudes. We must start sending the message that a good citizen is one who cooperates when appropriate, not one who is successful at taking from others. I hope that the free software movement will contribute to this: at least in one area, we will replace the jungle with a more efficient system which encourages and runs on voluntary cooperation. Footnotes 1.

The word "free" in "free software" refers to freedom, not to price; the price paid for a copy of a free program may be zero, or small, or (rarely) quite large. 2. The issues of pollution and traffic congestion do not alter this conclusion. If we wish to make driving more expensive to discourage driving in general, it is disadvantageous to do this using toll booths, which contribute to both pollution and congestion. A tax on gasoline is much better. Likewise, a desire to enhance safety by limiting maximum speed is not relevant; a free-access road enhances the average speed by avoiding stops and delays, for any given speed limit. . One might regard a particular computer program as a harmful thing that should not be available at all, like the Lotus Marketplace database of personal information, which was withdrawn from sale due to public disapproval. Most of what I say does not apply to this case, but it makes little sense to argue for having an owner on

the grounds that the owner will make the program less available. The owner will not make it completely unavailable, as one would wish in the case of a program whose use is considered destructive.