Theological Cultural Analysis of the Free Software Movement

“Free software” is computer software for which the source code (the original, human-readable form) is available under terms which give you the “freedom to run, copy, distribute, study, change and improve [it].”[1] That is to say, “free software is a matter of liberty, not price. To understand the concept, you should think of free as in free speech, not as in free beer.”[2] This essay is a theological cultural analysis of the Free Software Movement, a group which believes that software freedom is a moral issue.

This is in contrast to the alternative Open Source Initiative, which also believes that software with these rights attached is good, but for pragmatic reasons[3] – by virtue of the method of production, it has “better quality, higher reliability, more flexibility, [and] lower cost.”[4] This difference is one which splits the software authoring community.[5]

This essay will first attempt to describe and understand the Movement on its own terms, and will then move on to interpret it in light of the gospel and provide a theological critique. In this, it follows Vanhoozer's analytical hermeneutic.[6]

[1] Richard M. Stallman et al., “The Free Software Definition,” n.p. [cited 5 December 2007]. Online: http://www.gnu.org/philosophy/free-sw.html. Examples of free software include the Firefox web browser, the Linux operating system and the OpenOffice.org office suite. Examples of software for which you currently don't have these freedoms (“proprietary software”) are Microsoft Office, Skype, Google Earth and Mac OS X.

[2] Stallman, “The Free Software Definition,” n.p.

[3] It is somewhat unusual to have two movements having very different ends but the same means. Political movements normally fracture for precisely the opposite reason – they have the same ends, but disagree on the correct means to use to achieve the end.

[4] “Open Source Initiative Home Page,” n.p. [cited 15 December 2007]. Online: http://www.opensource.org/.

[5] “The [creators of the Open Source Initiative] decided it was time to dump the moralizing and confrontational attitude that had been associated with 'free software' in the past and sell the idea strictly on the same pragmatic, business-case grounds that had motivated Netscape [to release the source code to its web browser].” Michael Tiemann, “History of the OSI,” n.p. [cited 15 December 2007]. Online: http://www.opensource.org/history.

[6] Kevin J. Vanhoozer, “What is everyday theology?” in *Everyday Theology: How to Read Cultural Texts and Interpret Trends* (ed. Kevin J. Vanhoozer,, Charles A. Anderson, and Michael J. Sleasman; Grand Rapids, Mich.: Baker Academic, 2007), 59-60.

The World Of The Text

Free software is usually developed in an open, collaborative fashion and may involve individuals and companies from all around the world. In 1984, Richard M. Stallman, “the prophet of the free software movement,”[7] started a project (GNU[8]) to produce a complete free operating system. Such a system, under the name Linux or GNU/Linux,[9] now exists and is used on millions of computers worldwide. In 1985, Stallman created the Free Software Foundation (FSF), a charity to promote and manage the development of free software, and he remains the Movement's central figure and philosopher.

The FSF publishes a definition of software freedom – any software which is available with all the freedoms in the definition is counted as free software.[10] Stallman has also written the most popular set of free software licensing terms, the GNU General Public License (GPL),[11] which covers most GNU project software and nearly two thirds of all free software.[12] The GPL makes sure that, when you receive software under it, you have

[7] Tim Berners-Lee, inventor of the World Wide Web, as cited on the back cover of Richard M. Stallman, *Free Software, Free Society: Selected Essays of Richard M. Stallman* (Boston, Mass.: GNU Press, 2002).

[8] GNU is a recursive acronym standing for “GNU's Not Unix.” Unix is an existing family of operating systems with which GNU is compatible.

[9] There is a controversy within the community, related to the giving of appropriate credit, as to what the system should be called. This essay refers to it as Linux for brevity.

[10] “Free software ... refers to four kinds of freedom, for the users of the software:

- The freedom to run the program, for any purpose (freedom 0).
- The freedom to study how the program works, and adapt it to your needs (freedom 1). Access to the source code is a precondition for this.
- The freedom to redistribute copies so you can help your neighbor (freedom 2).
- The freedom to improve the program, and release your improvements to the public, so that the whole community benefits (freedom 3). Access to the source code is a precondition for this.

A program is free software if users have all of these freedoms.” Stallman, “The Free Software Definition,” n.p.

[11] Free Software Foundation, Inc., “GNU General Public License version 3,” n.p. [cited 15 December 2007]. Online: http://www.gnu.org/copyleft/gpl.html. Note that the American spelling for the noun, “licen**s**e,” differs from the English “licen**c**e.”

[12] 64.14%, according to “freshmeat.net: Statistics and Top 20,” n.p. [cited 15 December 2007]. Online: http://freshmeat.net/stats/#license. freshmeat.net is a website which tracks and announces new releases

all the necessary freedoms, and also says that derivative works (modifications and improvements) you make and distribute must also be under the GPL - in other words, you cannot take away from others the freedoms you have.[13] The opposite of free software is proprietary software - software owned and controlled by a single entity.

As noted above, Stallman and the FSF see software freedom as an ethical issue. He characterises the question of whether to use and develop proprietary software or to work against it as "a stark moral choice,"[14] and calls the proprietary software social system "antisocial," "unethical," and "simply wrong."[15] His rationale is his belief that "the golden rule requires that if I like a program I must share it with other people who like it."[16] But this is not just a personal opinion - his view is that "all programmers [owe] an ethical obligation to respect those freedoms for other people."[17] He summarises his motives thus: "My work on free software is motivated by an idealistic goal: spreading freedom and cooperation. I want to encourage free software to spread, replacing proprietary software that forbids cooperation, and thus make our society better."[18] This means that proprietary software is "a social problem."[19]

The World Behind The Text

The origins of the Free Software Movement are in Stallman's experiences when

of (at the time of writing) more than 40,000 free software projects.

[13] This additional restriction on the licensing of derivative works, which is not required for software to be free, is called "copyleft." This is because it builds upon but stands in contrast to copyright - copyright takes away your rights to share and change, while copyleft actively preserves them.

[14] Richard M. Stallman, "The GNU Project," n.p. [cited 19 December 2007]. Online: http://www.gnu.org/gnu/thegnuproject.html.

[15] Stallman, "The GNU Project," n.p.

[16] Richard M. Stallman, "The GNU Manifesto," n.p. [cited 5 December 2007]. Online: http://www.gnu.org/gnu/manifesto.html.

[17] Louis Suarez-Potts, "Interview: Richard M. Stallman," n.p. [cited 15 December 2007]. Online: http://www.gnu.org/philosophy/luispo-rms-interview.html.

[18] Richard M. Stallman, "Copyleft: Pragmatic Idealism," n.p. [cited 5 December 2007]. Online: http://www.gnu.org/philosophy/pragmatic.html.

[19] Richard M. Stallman, "Why 'Free Software' is better than 'Open Source'," n.p. [cited 5 December 2007]. Online: http://www.gnu.org/philosophy/free-software-for-freedom.html.

working at the Massachusetts Institute of Technology (MIT) in the 1970s. From the time general-purpose computers were invented, the culture of the original software 'hackers'[20] was one of sharing the software they wrote. However, as new machines arrived in the early 1980s, their software tended no longer to come with source code - and those who had the code had signed non-disclosure agreements promising not to give anyone a copy. So the ability for those at MIT to collaborate to improve the software they used was lost.

Stallman's "stark moral choice" was either to accede to this development and start a career as an author of proprietary software "building walls to divide people," or to write free programs "to make a community possible once again."[21] And so he began the work that continues to this day, although he himself spends more time now travelling the world promoting the ideas of free software.

The World In Front Of The Text

The vision that the Movement commends is one of a world where all users have the benefits of freedom for all the software they use. Stallman's essay "Why Software Should Not Have Owners" ends like this:

> You deserve to be able to cooperate openly and freely with other people who use software.
>
> You deserve to be able to learn how the software works, and to teach your students with it.
>
> You deserve to be able to hire your favorite programmer to fix it when it breaks.
>
> You deserve free software.[22]

[20] Although the word "hacker" today can mean "computer criminal," most of the software community continue to use it in its original sense: "A person who enjoys exploring the details of programmable systems and how to stretch their capabilities, as opposed to most users, who prefer to learn only the minimum necessary." Eric S. Raymond et al., "Hacker," *The Jargon File 4.7.7,* n.p. [cited 15 December 2007]. Online: http://www.catb.org/~esr/jargon/html/H/hacker.html.

[21] Stallman, "The GNU Project," n.p.

[22] Richard M. Stallman, "Why Software Should Not Have Owners," n.p. [cited 5 December 2007]. Online: http://www.gnu.org/philosophy/why-free.html.

From these three points, we can extract three ethical virtues that the movement espouses.

The first is sharing and mutual help within a community. Earlier in the essay, he writes “above all society needs to encourage the spirit of voluntary cooperation in its citizens.”[23] Stallman even extends this principle as far as breaking the law: “If your friend asks to make a copy [of a piece of proprietary software you have], it would be wrong to refuse. Cooperation is more important than copyright.”[24]

The second is that of self-improvement and education. In this particular situation, this is of necessity restricted to those who are able to read and understand the source code, although there is an implication that this is a skill which should be more common than it currently is. Elsewhere Stallman writes that “the free software community rejects the 'priesthood of technology', which keeps the general public in ignorance of how technology works.”[25]

The third is that of autonomy - one should not need to seek permission to make one's own life better. For example, if software is to be adjudged free, there can be no restrictions on the uses to which it may be put.[26] But personal autonomy is not an utter absolute; Stallman's licence, the GPL, does restrict your freedom of action in that you may not act in ways which reduce the freedom of others.[27] This is an idea taken from libertarianism.[28] One might also say it works to maximise the amount of individual

[23] Stallman, “Why Software Should Not Have Owners,” n.p.

[24] Stallman, “Why Software Should Not Have Owners,” n.p.

[25] Richard M. Stallman, “Why schools should exclusively use free software,” n.p. [cited 5 December 2007]. Online: http://www.gnu.org/philosophy/schools.html.

[26] “The freedom to run the program means the freedom for any kind of person or organization to use it on any kind of computer system, for any kind of overall job and purpose.” Stallman, “The Free Software Definition,” n.p.

[27] “To protect your rights, we need to prevent others from denying you these rights or asking you to surrender the rights. Therefore, you have certain responsibilities if you distribute copies of the software, or if you modify it: responsibilities to respect the freedom of others.” “GNU General Public License version 3,” n.p.

[28] “The libertarian will emphasize the absolute value of human freedom, so that any act or lifestyle is permissible as long as it does not compromise the freedom of another person or actually harm them.”

autonomy when considering society as a group - a utilitarian view.[29] But sharing is not forced - the Free Software Movement believes in the right to make private modifications to free software and not share them with anyone.[30] So this is not communism.

On what basis are these ethical principles defined? For Stallman, conscience and reason are the ultimate moral authority. He writes that “the ultimate basis of my ethical views is simply what my conscience says about certain cases. I start with those feelings and try to generalize them using induction. I don't have a list of ethical axioms, and never did.”[31]

In The Light Of The Gospel

The history that Stallman tells of the genesis of the Free Software Movement can easily be cast in Creation/Fall/Redemption terms.[32] Originally, the software ecosystem was created free, and users had freedom. Then, the advent of proprietary software took that away (a “fall”), and ever since he and the FSF have been working to redeem the world from social division and restore sharing and cooperation to society.

Insofar as this is used as an ethical foundation, supplanting the true Creation and Fall, it must be recognised as a false story of origins. But what signs of the true Creation and Fall can we see in the Movement, and the three ethical virtues noted above?

The first is sharing and mutual help within a community, the desire for which was the

Peter Jensen, *At the Heart of the Universe* (Leicester: InterVarsity Press, 1994), 49-50.

[29] “The utilitarian will emphasize the greatest happiness of the greatest number.” Jensen, *At the Heart of the Universe*, 49.

[30] “You should also have the freedom to make modifications and use them privately in your own work or play, without even mentioning that they exist.” Stallman, “The Free Software Definition,” n.p.

[31] Richard M. Stallman, personal email communication.

[32] As others have noticed: “It's diagnostic that Richard can no longer recall with certainty the year or the other person involved in [a key] incident that set him on the path to 'free software'. Once the story had been absorbed into Richard's personal narrative of prophecy, struggle, and mission, the actual time and circumstances of the story became unimportant to him and forgettable.” Eric S. Raymond, “A Fan of Freedom,” n.p. [cited 19 December 2007]. Online: http://catb.org/~esr/writings/rms-bio.html.

original trigger. Stallman himself, although an atheist,[33] perceives the similarity with Christian social ethics. He suggests that Christianity “require[s] the freedom to share software. How could you 'love thy neighbor as thyself' while signing a contract[34] not to share something useful with that neighbor?”[35]

The Bible does have things to say about how we should share our possessions with others. However, before rushing to apply these to software, we need to consider whether software and other information should rightly be considered as property. Software is unique among human cultural creations in that it combines the two attributes of function (it **does** something) and zero-cost copyability.[36] If one person has useful software to perform a task, and shares it with another, they can also perform the same task at the same time without depriving the sharer. Sharing software is not a zero-sum game. In economic terms, software is a non-rivalrous good.[37]

So when we look at e.g. 2 Corinthians 8:8-15,[38] which extracts principles of mutual help based on the assumption of a zero-sum exchange,[39] how do we apply it? The answer

[33] “As an Atheist, I don't follow any religious leaders, but I sometimes find I admire something one of them has said.” Stallman, “The GNU Project,” n.p.

[34] By “a contract,” he means the End User Licence Agreements (EULAs) which accompany proprietary software, to which you have to agree in order to use it. Such agreements contain clauses forbidding you from copying (“sharing”) the software.

[35] Richard M. Stallman, personal email communication.

[36] This can be contrasted with e.g. a car or some food, which has function but not zero-cost copyability (if I give my car to you, I no longer have it) and e.g. a novel, which (in electronic form) has zero-cost copyability but no significant function.

[37] A rival or rivalrous good is one whose consumption by one person prevents its consumption by another person. Most goods (e.g. an apple, a hammer) are rivalrous. Non-rivalrous goods (e.g. a scenic view, the common cold, software) may be consumed simultaneously by any number of people. “Rivalry (economics),” n.p. [cited 6 January 2008]. Online: http://en.wikipedia.org/wiki/Rivalry_%28economics%29

[38] Bible quotations in this essay are from *English Standard Version* (London: Collins, 2002). The ESV usage terms require: “Scripture quotations are from the Holy Bible, English Standard Version, published by Harper Collins Publishers (C) 2001 by Crossway Bibles, a division of Good News Publishers. Used by permission. All rights reserved.”

[39] “Our desire is not that others might be relieved while you are hard pressed, but that there might be equality. At the present time your plenty will supply what they need, so that in turn their plenty will

isn't totally clear but if the principle is “that there should be equality” (verse 13), this could be seen as an argument for sharing your software with everyone equally.

Of course, if the desire to help your neighbour is backed by a humanistic idea of shared social progress as an ultimate goal, that would be idolatrous. A Christian would also want to disagree with the idea that the imperative to share software is more important than our responsibility to obey the governing authorities.[40]

The second ethical virtue is self-improvement and education. Historically, Christian involvement in education has been extensive, seeing it as “the nurture and development of man for his proper end.”[41] Education into a skill such as software authorship is only a small part of that, but it is a part. So, going that far, this virtue is an echo of Creation. If it crosses the line into an Enlightenment-style view of education as the saviour of mankind, it would be a sign of the Fall.

The third virtue is autonomy - freedom from control by the author of the software. One's view of this depends on whether one feels that the software author's authority is righteous or not. It should be noted that the idea that the author of a cultural work has authority over how the work can be used and copied is a relatively recent one. Such a principle did not enter English law until the Statute of Anne in 1709, and even then it was “for the Encouragement of Learning,” not because of some natural (or, as far as I can see, Biblical) authorial right.[42]

A Christian Response

So how should Christians, as gospel-shaped people, react to free software, over and above a dispassionate evaluation of its relative technical and functional merits? There are three major and several minor arguments in favour of a positive attitude, but also

supply what you need.” 2 Corinthians 8:13-14.

[40] Romans 13:1: “Let every person be subject to the governing authorities. For there is no authority except from God, and those that exist have been instituted by God.”

[41] R. L. Dabney, as cited in Douglas Wilson, *The Case for Classical Christian Education* (Crossway Books, 2002), 67.

[42] “An Act for the Encouragement of Learning, by Vesting the Copies of Printed Books in the Authors or Purchasers of such Copies, during the Times therein mentioned,” n.p. [cited 1 January 2008]. Online: http://www.copyrighthistory.com/anne.html.

some caveats which need to be heeded.

The first major argument is the increased ability to help your neighbour, as discussed above. Using free software puts you in a better position to do this. One aspect of loving your neighbour is meeting his needs.[43] If you own a copy of BibleWorks (which is proprietary software) and another Christian who would benefit from it asks you for a copy, you are in a moral dilemma. You are physically able to help them, but the agreement you signed with the authors prevents you.

Writing free software puts you in an even better position; you are able to create something which, for the same amount of effort, can be useful to one person or a million people. The One Laptop Per Child ("$100 Laptop") project aims to address global educational inequality; its aims are significantly advanced by its use of free software.[44]

A second argument for producing free software could be made based on God's glory. If Christians produce widely-used free software, and make it clear that they are doing it (as they do all things) to the glory of God,[45] is God not more glorified than if only a few people know of their work?

The third, related argument is that from the Cultural Mandate.[46] Christians are commanded to "fill the earth and subdue it," which has been interpreted more widely as a command to create culture.[47] So it's good to write high quality software, full stop. But

[43] James 2:15-16: "If a brother or sister is poorly clothed and lacking in daily food, and one of you says to them, 'Go in peace, be warmed and filled,' without giving them the things needed for the body, what good is that?"

[44] "The Laptop will bring children technology as means to freedom and empowerment. The success of the project in the face of overwhelming global diversity will only be possible by embracing openness and by providing the laptop's users and developers a profound level of freedom." Benjamin Mako Hill, "OLPC on free/open source software," n.p. [Cited 1 January 2008]. Online: http://wiki.laptop.org/go/OLPC_on_open_source_software.

[45] 1 Corinthians 10:31: "So, whether you eat or drink, or whatever you do, do all to the glory of God."

[46] Genesis 1:28: "And God said to them, 'Be fruitful and multiply and fill the earth and subdue it and have dominion over the fish of the sea and over the birds of the heavens and over every living thing that moves on the earth.' "

[47] "In Genesis, God gives what we might call the first job description: 'Be fruitful and multiply and fill the earth and subdue it.' The first phrase, 'be fruitful and multiply' means to develop the social world:

if a Christian produces quality software and makes it free software, it can be built upon by others, and greater things can be created. So making your software free better fulfils the Cultural Mandate than keeping it proprietary.

Other arguments for a positive attitude:

- Stewardship - using zero-cost software is good stewardship; proprietary software can be extremely expensive.
- Small government - copyright is not a natural right, but an artificial government-imposed monopoly on copying. Christians who are sceptical of over-reaching government interference may wish to choose software which neuters the copyright monopoly.
- Removing temptation - proprietary software comes with restrictions on copying, and also sometimes restrictions on use, which Christians might be tempted to break. Also, most people click “Accept” to long and complex EULAs without reading them, which is arguably not letting your Yes be Yes.[48]

On the negative side, Christians must avoid any idolatries which can easily come attached to the principles of free software. We must avoid elevating the principle of sharing into an idolization of human social progress, the rightness of self-improvement into an idolization of education, or the usefulness of autonomy into an idolization of freedom. And we must respect the command to obey the governing authorities in respect of not making copies of proprietary software.

So what of the ethical stance of the Free Software Movement? Their position can be split into two points - that making and using free software is an affirmative ethical duty,

build families, churches, schools, cities, governments, laws. The second phrase, 'subdue the earth,' means to harness the natural world: plant crops, build bridges, design computers, compose music. This passage is sometimes called the Cultural Mandate because it tells us that our original purpose was to create cultures, build civilizations - nothing less.” Nancy Pearcey, *Total Truth* (Wheaton, Ill.: Crossway Books, 2005).

[48] Matthew 5:37: “Let what you say be simply 'Yes' or 'No'; anything more than this comes from evil.” I am grateful to Robert O'Callahan for this point.

and that making and using proprietary software is a negative ethical duty.[49]

For a Christian, negative ethical duties (those things God forbids us from doing) are clearly defined by Scripture, and I see no Scriptural basis for declaring that making and using proprietary software is in this category. A free-software-using friend tells of a time when he was creating an evangelistic leaflet. He was unable to get it to print using free software, so he used some proprietary software to achieve his goal.[50] Was this sinful? If Scripture is silent on the question, the answer must be no - there are no things that God forbids us to do that he has not told us about.[51] And if using proprietary software on some occasions is not sinful, then producing it must also be not sinful.

So we cannot go as far as the Free Software Movement and say that proprietary software is ethically bad. But if we have all the caveats in place then, for the reasons given above, free software is a positive social good and, as such, Christians should be encouraged to produce, use and share it.

[49] “The distinction between affirmative and negative duties is [that] ... the latter are all simultaneously binding on us at all times. It is possible to obey 'do not murder' and 'do not commit adultery' and 'do not have any gods before the Lord' all at the same time. The former need to be ordered and chosen between because it is not possible at one and the same time to 'visit the prisoner', 'evangelize the unreached', 'spend time with your family' and so on. For a given moment you need to choose which affirmative duty is binding upon you.” David P. Field, personal email communication.

[50] David Anderson, personal email communication.

[51] To argue otherwise would be to say that God has filled life with undetectable bear-traps, such that we can sin and have no chance of ever knowing it.

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