

# **Webinar Series:** Fair Use Code & Other Legal Tools for Software Preservation

## **Episode 3:** Making Software Available Across Institutions and Networks

**Speakers & Facilitators:** Jonathan Farbowitz (Guggenheim Museum), Euan Cochrane (Yale University), Krista Cox (Association for Research Libraries), Peter Jazsi (American University), Brandon Butler (University of Virginia)

### Episode 3 Transcript

**Brandon Butler:**

I know it always take me a second to get this thing fired up and get your headphones on and all that good stuff so at say 2:02 we will begin and everybody my name is Brandon Butler I am the law and policy advisor to the Software Preservation Network, and I'm also the director of Information Policy here in beautiful University of Virginia, Charlottesville Virginia. Thank you all for joining us for today's webinar, in addition to the various titles I just described I'm also a member of the code of best practices research team. The project that were mainly going to be focusing on today, and we're really proud to bring to you today March 11th, the third episode in our seven part series of webinars exploring the fair use

code and other legal tools for software preservation. Co-hosted by the Association of Research Libraries, and the Software Preservation Network.

So just a little housekeeping before we get started, everyone but the hosts and guests will be muted throughout the webinar that helps make sure we have audio and visual quality that is nice for recording purposes and for everyone who's watching. If you have any questions during the presentation please just type them into the chat box in your Zoom control panel, you should be able to find the chat option somewhere in that interface that you're looking at. I'll bring up these questions during the presentation, and we'll have time for questions at the end. So I'll manage the questions don't worry about the questions they'll come through me and every episode is going to be recorded, transcribed and post it to the SPN website freely available for all to enjoy, so this recording is something that you can share with your friends when it's ready.

Today we are presenting episode 3 Access within Organizations and Across Networks and our guests are Jonathan Farbowitz who is a fellow in the Conservation of Computer-Based Art at the Guggenheim Museum, he assists the Guggenheim's Conservation department in addressing the preservation needs of computer-based works in the Guggenheim's collection. Jonathan also supports the development of best practices for collecting and managing these kinds of artworks. Farbowitz which has worked on the restoration of Shu Lea Cheang's Brandon (1998-1999) and John F. Simon Jr.'s Unfolding Object (2002). He holds an MA in Moving Archiving and Preservation from New York University as well as a BA from Vassar College and has previous experience in software development and testing.

Our next guest today is Euan Cochrane. Euan is the Digital Preservation Manager at Yale University Library where he leads a team that preserves digital assets from across the libraries, archives and museums on campus. He is also the primary investigator on the EaaS program of work and has been an emulation advocate and user since the mid-1990s when he was active in the Amiga emulation scene. I was at that time active in the Bulletin board system debates about rock music scene.

Your research leads and facilitators for this episode are Krista Cox who is the director of Public Policy Initiatives at the Association of Research Libraries and Krista is joined by Peter Jaszi Professor Emeritus at American University Washington College of Law. Professor Jaszi is one of the originators of the fair use best practices movement and as a co-author of the Software Preservation Code of Best Practices along with myself, Pat Aufderheide and Peter's co-host Krista Cox.

So in this episode Krista, Peter, Jonathan, and Euan are going to discuss how fair use enables institutions to provide access to software for use in research, teaching and learning purposes while minimizing any negative impact on ordinary commercial interests of our software friends and maximizing research possibilities for the people who need our institution. And we're also going to talk about going beyond one institution to provide broader network to access to software, maintained and shared across multiple institutions. So you'll hear a little bit about those two principles from Krista and Peter and then you'll hear some experiences in the field from Jonathan and Euan and then we'll have time for those four folks to have a discussion amongst themselves as well as some questions and answers from you all.

So without any further ado let me just make sure I have the chat window visible to me, so I can moderate your chat and again drop your questions in the chat any time and I'll keep track of them and I'll turn the keys over to Krista and Peter.

**Krista Cox:**

Thanks so much Brandon and thank you to our guest Euan and Jonathan for joining us today. As Brandon explained we're going to be discussing a high-level overview of scenarios three and four from the code. If you were able to join us in our previous webinar episodes, first we gave a very high-level overview of the code itself as well as these Codes of Best Practices and last week we talked about scenarios one and two, which were really about preservation, about collecting and stabilizing and evaluating the legacy software and documenting that in its operation.

Today we're going to be talking about the two scenarios of the code that deal with the other half of the mission of cultural heritage institutions mainly about access. So the scenario that I'm going to give a brief overview on is providing access [inaudible 00:06:20] for use in research, teaching and learning. Of course, it's important to remember that this code is really about access to legacy software, and we're talking in this scenario about providing access using on-site physical terminals or remotely accessible online technologies such as emulation. Because otherwise if we were providing access to the original media and hardware that could place those resources at risk, because these are often older materials, and we don't want to see those deteriorate or become lost. And with these on-site physical terminals

or remote access technologies were able to provide them perhaps to a broader range of people without creating these limits that the original media might have.

The other reasons we're providing access in these ways is it allows for interoperable programs to be run together and while some commercial vendors have created rendering tools, sometimes they don't faithfully represent how those objects originally ran or looked in the now-obsolete formats. So this is really about providing access to the legacy software that is preserved and being made available for research and study and teaching and learning. So fair use applies to providing controlled access to software and support of research, teaching and learning. Like all of the scenarios we heard about limitations that strengthened the case for fair use, so if we could go to the next slide covering limitations.

So these are the limitations that apply to scenario three the first one of course is that individuals granted access to collection software should be notified that access is provided for teaching or research purposes, and they personally are responsible for ensuring that any further uses are lawful. Member institutions do the same thing for example when providing access to a photocopier, we want to make sure that the individuals that are using it that they are responsible for making sure that they're making lawful uses when they access the software.

The second limitation is where a preservation institution intends to provide only controlled access, it should take appropriate measures to limit the possibility of users copying or otherwise retaining that software, so if you're providing it on a on-site physical terminal if the intention is to keep it limited you don't want the users to be able to download it. And then the third one is access to commercially available software should be restricted to minimize impact on ordinary commercial

sales, for example, it might be enabled on a case-by-case basis for limited purposes that are not served by commercial offerings such as data verification and reproducibility studies subject to the user's affirmative agreement to reasonable terms and conditions.

We give another example another approach could be to limit access to commercially available software to local terminals that limit how the software can be used or copied, because of course an important part of fair use the fourth factor is the impact on the market. So this limitation is intended to minimize that impact on the market for commercial sales. So that is scenario three I'll turn it over now to Peter to describe scenario four.

**Peter Jaszi:**

Great. Thank you Krista, I thought I'd start by talking just a tiny bit about the methodology by which this Code of Best Practices was developed as we've mentioned in previous sessions the first thing that the [inaudible 00:10:34] did was to talk to a lot of people who are active in the field, including many of you to find out what their concerns were. What the recurrence situations in which they found that they were bumping up or at least rubbing up against real or perceived copyright problems were like. And the results of that interview phase are summarized in the first report that we issued that is on ARL website, and other places and maybe we can put a link to it up in the chat now.

Then we went ahead and having distilled with all that information into a set of recurrent situations, things that seemed to come up again and again. We convened the small discussion groups around the country which we mentioned, again, in

which some of you were generous enough to participate and tried to work out consensus ideas about what made sense as good practice in each of those situations. One of the things we heard about again and again from the first day of our activities literally was the promise and problem, if you will, of shared emulation tools. Obviously emulation has its limitations as a tool but it's enormously powerful and at the same time when you have many institutions working in the field, each with its own specializations, each with its own collection there's a risk of both duplication and lack of access in the community as a whole to a full range of emulation tools.

So almost from the beginning we heard about the project of doing emulation as a service, and I would say that of all of the initiatives in the field, which we had a chance to talk with you experts about, this is probably the one that rang at least initially the largest number of copyright bells so to speak. So we were very hopeful that in the consensus building part of our project we could address it successfully in a way that would responsibly enable the potential power of this solution. And in a different hearing in our discussions a lot about how promising and important emulation was, about how essential it was to enable communities of institutions working in different parts of the software preservation field to share emulation software.

We also heard and this is something that Krista has just adverted to, real concern expressed about doing this as was true of all of the initiatives we discussed in a way that was respectful of existing, functioning commercial software markets. And that sensitivity, which was widely shared among those who were willing to work with us at both stages of our project, grew perhaps partly out of some understanding of the importance of market factors in fair use analysis as Krista has suggested, it also

grew I think about it out of a genuine in-dwelling sense on the part of people who work in software preservation. That their mission should be consistent with rather than in conflict with the mission of both the individual and corporate software developers.

So that turned it out to be a big part of what we thought about in connection with both principle 3 as Krista has described and principle 4 and we think and hope that it's well reflected in the results. The most important thing that I would say to you about this principle or situation number four is in addition what is on the next slide, and I guess we can move to that now I would urge you in addition to looking at the slide information to have a look back at the Code of Best Practice as itself as we gave you a link to it at the beginning of this webinar session and to look carefully at the description of the situation, that precedes the principle as you've just seen it, and these limitations about which I'm going to speak in a moment.

This is I think a particularly important part of the code because as our discussions developed it was very clear to us that everyone who was working with us in the small groups was thinking of providing emulation software to students, researchers and others online as a cooperative, a collective consortial activity. And so we have described this activity in those terms in the code because they were the terms in which the groups with which we were speaking about it conceived of it and that description, that conceptualization is in turn directly reflected in the four limitations that you see on the screen before you. And it's obvious in the first of those, which assumes the existence of some kind of consortial framework in which the sharing of emulation tools is going to take place. If it worked for that assumption then



discussions of MOU and the like wouldn't make any sense, it is in the context of that assumption that we think they do.

Another thing that we were told at every stage of the discussion was that although consortial arrangements were the way to go, in terms of making special emulation software more available to a wider range of teachers, scholars, researchers and others this had to be done, in terms of our prescriptions about fair use, in ways that were sensitive to the fact that in any consortium there are going to be different kinds of institutions, with different collections, different resources and different values. And so all of these limitations are cast with that assumption in mind. None of them as you can see recommends a particular set of practices that will be governing or binding on every institution in any particular consortium. All of them instead recommend objectives that the practices that consortia will devise and implement within themselves should be designed to achieve.

And the first of those goals is reflected in limitation B that is policies should be put in place about how to extend the reach of collection material within a given institution but beyond the physical reading room. And then again in limitation C, cooperative or consortial arrangement to share emulation tools should get together and talk about who is included and who is excluded potentially from such arrangements and create mechanisms that will assure that non-affiliated scholars have a way into the richness that these consortial repositories of software and in particular of emulation tools will create.

And then finally and again there are many ways to do this just as there are many ways to accomplish the goals that are stated in B and C above, finally and as was true of every element of this list of limitations, so it is true here that the level of

consensus within our small groups about this proposition was extremely high and extremely consistent. That is, if one is going to be putting material online for use by institutional affiliates and under supervision also by non-affiliated researchers it's really important to give rights alters, a mechanism by which if they see something going on which they think constitutes a meaningful challenge to their zone of exclusivity they can say so. This is not, and I want to repeat, not a take down policy. We're not recommending that institutions or consortial that are going to share material online set up hard and fast rules that say that in the event of receiving any complaint from a rights holder they will immediately do x, y or z.

Rather the strongly recommended policy here is to create an easy, transparent mechanism by which concerns and I suppose also conceivably, if it were to come to pass, complaints could be registered. That they can then be processed some will be legitimate, some will not, but the tool, the channel, the conduit is essential. So I think I'll stop there turn it back over to Brandon and then I'll look forward to trying to answer with Krista and others of the team, any questions you may have about these extremely important, I might even argue the most important principles of the Code of Best Practices.

**Brandon Butler:**

Great, thanks Peter and so let's see we're not quite ready for questions yet let's go to I have Euan next on my agenda. So Euan I'm going to stop sharing my screen and you can start sharing yours if that works.

**Euan Cochrane:**

That's good. Thank You Brendan and thank you Peter I will just start sharing here.  
Can you all see that?

**Brandon Butler:**

Yeah, that looks good.

**Euan Cochrane:**

Okay what I'm going to do I'm going to try, and not take up too much time here because I'm conscious that it'll be great to have some good discussion I'm going to show a few examples of how we can use the rights described in the fair use code to ensure that we can still access old content that has software dependency or that we can interact with it or what have you. So I'll start just by showing a few examples this is some research I did when I was at Archives New Zealand where we opened old digital files in the original software then in modern software and then in emulated versions of the original. And we compared the differences we had a very large survey type tool where some students were going through an open environment and checking off all these different things that might have changed, and we found quite a lot of somewhat dramatic differences, and we open things in modern software versus the original.

For this particular example it's a Microsoft Works document and here it is an office well Word 2012 the latest version of Word. You can see really it's a miss but also once you get down to the actual poem that's in here the poem still here but when you open in modern software this chunk of text is added. Of course, all the word counts as you can see down the bottom left here and the page link there's also if

you want to cite something in here it would be purely problematic, but this uncovering of the text here is particularly alarming and what it points to is that we really want to be able to open the born-digital objects in the original software.

There are a few more examples in this research data type ones, this one here was interesting a WordPerfect file where this is the original in WordPerfect 5.1 for Windows 3.11 and then this is the same file Open Office 2007 interestingly the new software interpreted the formatting information to put a private tag around the title here. Which really changes your interpretation of the thing and if this were a piece of evidence you might treat it quite differently if you saw this private on there than if it wasn't there and it was not there in the original, and it's just using the wrong software to open the object. So if you're doing research on born-digital archives I would say that we always definitely want to have the option for every born-digital object to be able to open it in the original interaction environment. And we can now do that with, let's see if I can move this yes, with emulation as a service.

So emulation as a service is a tool set that I've been working on with the University of Freiburg for quite a few years and they're the lead developers of this and what it allows you to do is run emulators which simulate all the computers and install software on them and then access those emulated old computers for our web browser. So here's an example of what we want to move towards with accessing born-digital objects where you click a link and it automatically opens the appropriate software with that file open within it. So, we're seeing Windows 98 load and we should see Microsoft Works load that same file we just saw in the more recent version of Microsoft Word.

Here we go and particularly important to point out is that we're then able to interact with it. Digital objects particularly born- digital objects are interactive having a printout of many of these things especially things like Spreadsheets is not enough. We need to be able to go in and look at things like embedded metadata, look at Spreadsheet formulas and everything and do anything you might have been able to do with the original software. Just to see also what it was like for the original creator in creating these things. So you can see this is now interactive I can go through and make changes and fortunately with emulation as a service we can also restrict various functionality, so when this environment is shutdown if I click stop here if I click that link again it would re-load exactly the same as it was before with no changes. So that's an example of being able to open a born-digital object and interact with it using the original software.

I wrote a blog post which the link to this should be shared in the notes, about designing what we're calling a Universal Virtual Interactive which is basically the functionality you just saw. Where you could click a file and open it in the original software in your web browser. There's a lot of work that goes into developing this, for example we need to set up an environment which means a virtual computer that's running every piece of software out there that we might want to use, to be able to interact with the file and we need to document each of those environments very thoroughly in order to automate this process that's outlined in this blog post.

All of that work is really time consuming and somewhat costly but it'll only need to be done once and this then relates to the section for I believe of the use code. By outlining that under fair use we're able to share these environments, these working computers they have the software pre-configured on them amongst consortia of organizations. It means that everyone can benefit from the work that one

organization does to configure and document an environment and add it to a UVI like this or just add it to a shared pool that others can then use, add their content to and re-enable access and interaction with that old object. There's all sorts of object because pretty much anything going digital this would apply to including things like email archives where you might want to open in the original like in a PST file an email archive in the original outlook and have the other applications there.

Which is another point to make that often we want to be able to use multiple applications in the same environment because there are multiple dependencies for a particular object. I'll show you one more example here which is some research data that's associated with this study that was done by these folks here and it's archived in the Institute for Social Policy Studies data archive here at Yale. If I go over here we have downloaded all the files that are at the bottom of the page here and attach them to an environment that includes all of the software dependencies, so it includes Stata, [inaudible 00:29:42] Excel and an PDF reader and what's really good about this is if you're a scientist and you wanted to reproduce the outputs that are published with that study, you can go and load up this environment we run the code in Stata and see that it does produce the exact same output and you might want to tweak that code.

Well you might eventually want to add some different data to it and rerun it and by having a software all there packaged up and really go in your browser you're able to reproduce it very easily without much effort at all and of course once we set up this one environment with all those dependencies ... there goes the operating system startup sound but once we set up this environment with all dependencies we can

then share that and reuse it for all of the other publications that have the same dependencies.

So I'm opening up the Stata Do-file and it's starting to run what we'll find is the output is already in there so it'll give us an error saying it can't write to the output once it gets to the end of this. But you can see that it's redoing, it's rewriting that code and reproducing the same results as it did previously, let's see the file already exists. But as well as looking in there we can say open up this Excel file, we can look at the documentation that's in this PDF. It's all there all the dependencies are there in a single environment you don't need to move out of this space. This must have been a big Excel file.

All right so the one other thing that we're doing one more example I'll show actually is we've been imaging all the CD-ROMs in our general collections. CD-ROMs publications that many other libraries also have a copy of and we're attaching them to dedicated environments and configuring any software that's on there. Here's an example but what we do after that then is we put a link in our catalog to these landing pages and the landing page has all the information, all the interaction buttons that a user would need but basically it automatically loads into the environment and you'll see the software in this case are usually a UN publication about land mines [inaudible 00:32:12] it loads automatically so the user can interact with it like they would have originally and for anyone that might be doing any research in study UN or land mines or anything to do with this. Being able to re-access this thing which does not work on modern operating systems it's just invaluable but I think a couple of important aspects to the technology behind this that I should point out.

One is that the way emulation works we're able to for each of these objects assign a limit to how many instances can be run concurrently. So with the CD-ROMs what we're doing is we're saying we have one copy so only one person can use this at a time. As soon as they're done it'll be freed up and the next person can start using it. We can do that for any objects in the system and there are a bunch of other different types of restrictions we can implement, so here we can choose to turn on or off the ability to print from an environment. We can turn on or off internet access and we can turn on or off the ability to add your own files to interact within that software. By doing that we're limiting the ability for people to use this old software in a kind of production basis and making sure that they do go and buy these new versions of software if they're actually using it for business purposes. Because they won't be able to do the kind of things that they want to do if they were using it on an operational basis such as add content or download results of changes you've made to content.

In addition, in an archival setting things like being able to turn on or off printing enable us to restrict how much access users get to the content itself, so at worst they could take a screenshot but aside from that they can't necessarily unless we allow them take any content out of these environments including the software itself. Which is important and something that's covered as we heard just before and the fair use guidelines and that's partly been informed by the fact that we can technologically re-do these things using this emulation as a service software.

Did I have anything else? So one more thing quickly to point out is what you're seeing in here is the more recent version of emulation as a service or the software that's being built as part of the EaaSI program of work which allows us to have an instant emulation of the service where we keep some environments private we can



then choose to if you click through publish an environment and that puts them as public area. The things in the public area are then shared to anybody that's networked in the emulation of the service infrastructure program to our node and they can choose to replicate it.

So here we're seeing two environments that are at a remote node I can go to the details and replicate it locally that'll move it into the public area on our node. That means that we can do a lot of work configuring environments and then we can share them with anyone else is participating in this network of nodes and it saves an awful lot of time and awful lot of effort for everybody involved and we're making quite a lot of progress with that at the moment and I'm hoping to give you more updates on that in future months. All right I think that's all I had, of course I'll be happy to answer questions.

**Brandon Butler:**

Excellent, awesome thank you Euan and so now Jonathan if you want to take over if you-

**Jonathan F.:**

Sure, let me just unmute everything. Can you all see me?

**Brandon Butler:**

Yes.

## **Jonathan F.:**

Okay, so thank you Euan and thank you everyone for having me. I'm Jonathan Farbowitz I'm the Guggenheim's Fellow in the Conservation of Computer-Based Art and what you're seeing behind me this is the Guggenheim's media conservation lab so this is where we deal with time-based media artworks which could include films, video art, audio and of course software-based art. So I'm going to share my screen strange I don't oh here we go okay. So I'm going to share my browser with you and so my fellowship is part of this larger initiative called the Conserving Computer-Based Art Initiative and this is one of the blog posts that was written about it.

So as part of my fellowship I was tasked in dealing with what are now 26 computer-based works in the Guggenheim's collection and so we have a variety of different preservation strategies for these works. One of the strategies proposed being emulation and also we have worked on two restorations and these are restorations of web-based artworks and the way that we did this was through code migration. So translating the code from one programming language to another and so our mandate as a museum is to preserve these software-based artworks for future exhibition and also for future researchers. And just to give you kind of a conceptual idea of the gamut that these software-based artworks run, so sometimes like in the picture I'm showing we could get an artwork that the artist provides a computer and that computer runs some artists produce software in a gallery.

We have three as I mentioned web artworks so these were basically the websites created as artworks so we have to take care of those and those web artworks are

expected to be available on the internet 24/7 for anyone who goes to the website to be able to access them. And just to show you these web artworks so this one is called Brandon this is by the artist Shu Lea Cheang and this work was created in 1998, this is just the homepage here and I'm not going to go too far into it but if you click on the Brandon link you can get a sense of some of the different parts of the work. There's a bunch of different interfaces that you can visit. I guess I'll just go in here and this is just one of the interfaces that you can interact with the work.

Other web artwork that we have is Unfolding Object and this one you basically are presented with this square and you click on different pieces of the square and you unfold parts of it and the lines that you're seeing are the artwork recording how many people have visited each of these paths, so the lines indicate how many people have traveled along the same path that I have. So these are the types of works that we're dealing with and like Euan mentioned in his presentation we're very concerned with if we have a historic artwork how this artwork would render in its historical software. We want the artwork to appear as faithfully as possible to the original artist's vision in the restorations that we did.

So what you're seeing here in my browser this is now Unfolding Object it was originally written in Java and we did a migration to JavaScript so what you're seeing is the JavaScript code running underneath but what it is, it's an exact replication of what the artwork looked like originally. So in terms of the code, if we think about ... I actually wanted to step back for a minute and just look at situation two because that's really important for us to be able to document software in operation and make that documentation available.

We wrote two blog posts about our restorations so if you look at the Unfolding Object blog post we actually have a video here where we have the artist he's interacting with the work. So in this case you know this particular work wasn't very challenging necessarily because Unfolding Object uses artists written software and of course we have John F. Simon Jr's permission to work on the software. He was involved in the restoration process but supposing in the future we would have a web-based artwork with proprietary software. If we'd want the ability to make research and documentation of that software running to be publicly available and also in our blog post about Brandon we also have another video down here which is a video navigation of the work and not only is this important for making this information publicly available but it's also important for our own internal research to have video of the software running, images of the software running all those things.

And in some cases the artists have used proprietary development environments such as Adobe Flash and Macromedia Director to create artworks and we have an ongoing collaboration with NYU, where NYU students actually study the works. This is some NYU students participating in an artist interview, so you can imagine a situation in the future where we want the students or another researcher to be able to study something like a Flash artwork and we have to data up that software or perhaps an even older software in order to open the artwork and access it and make it available.

One could also imagine a situation in which we have to do a restoration of a web artwork that used proprietary software, in which case we would have to be able to open that artwork in the software. For example the two web artworks that I showed you they used Java applets which is an older technology and of course we've kept

the original versions of these artworks. So if a researcher wanted to see the original running in Java we'd have to figure out a way to do that and the code would give us the confidence to say that we could use these older versions of Java, even if we didn't necessarily have any kind of license with Oracle or anything like that. So I think that's all I have to say for the moment but again happy to answer any questions and I'll stop sharing my-

**Brandon Butler:**

Wonderful. Thank you guys these are such fascinating projects that's been one of the best parts of this whole Code of Best Practices experience is just meeting people who are working on such cool things. So we've had several good questions in the chat so far but before we go to questions from the folks who are attending. I just wanted to open it up for Peter and Krista if they have any questions for Jonathan and Euan before we move into audience questions.

**Peter Jaszi:**

Hi this is Peter not so much a question is just a thank you because I think what both of these presentations help to demonstrate is the close relationship between the third and the fourth principles. They are in effect a cascading set of ideas. The third principle talks about what you can do to support academic and research and teaching work in your institution and the fourth principle talks about as both presenter so amply demonstrated all of the potential that exists when and if one can share those tools more generally. So I couldn't have asked for better

illustrations of the way we hope that these are going to be empowering and even transformative.

**Brandon Butler:**

For sure and I'll add my gratitude and one observation I think another commonality across these two in some ways very different presentations is that the necessity of access to older software for something like fidelity which is something that you need whether you're ... Euan mentioned if you need something as evidence in a case which I know there are forensic uses of the software or if you're a researcher trying to learn something about a document and understand it better but also if you're restoring art and trying to present an artist's visions, fidelity matters so I really appreciate that commonality, I think that's really interesting.

So we've got some great questions in the chat so let's get to those the first question came from Drew Robards who asked, "Whose commercial interests do we have to be concerned about?" So repeatedly in the code there's express concern about commercial interests so Drew asked, "Let's say there's a digital market for old software that the copyright holder has no longer really been active in promoting, say an old version or even abandoning the series. Would providing access be affecting the commercialization of a third-party vendor and similarly what about physical vendors that sell old software like original copies I suppose for use on the original hardware?" So what's the market here and this might be a good question for Peter to start off with and then maybe Krista can follow up.

**Peter Jaszi:**

I'm happy to jump in because I think it's a question to which there's actually a fairly clear answer and that is the markets about which the participants in this process were concerned in the markets about which likewise lawyers are concerned in this area, are the existing commercial markets that are being maintained on behalf of rights holders not the kind of secondary markets that you've described. Which may be extremely valuable maybe even very useful which you may or may not want to respect. You want to keep those people who are providing old software even though they don't actually have any rights to do so in business but it is not the kind of market interest to which the code looks as such. We're talking therefore about things that are in the market via the original developer or the original developer's current licensee.

**Krista Cox:**

Yeah I agree with Peter I think that there's a difference between the market and the way the question seemed to be phrased. Which to me is like the market meaning that there are people who actually want it but the rights holders are not making that available to that. So just because there is a want for something doesn't mean that the right holders see a market that they want to exploit.

**Brandon Butler:**

Right yes when we talked about market that's right the core concern in fair use is always intruding and substituting for market demands where there's a right holder that is there and interested in supplying and so across the board we assume that

there isn't a rights holder interested in supplying. The rights holder who actually owns the material. Okay great and so our next question is-

**Peter Jaszi:**

Let me point out one thing that's interesting in 3 C the third and final limitation to C which of course as I was saying earlier carries over potentially in to 4 because of the close relationship between these principles there and I won't go further into it now but I urge you to look at it. There is a description of the situation in which even software that is commercially available may be something that you can provide on a shared basis subject to some sensible restraints under fair use. This is the limitation that deals in particular with data verification and reproducibility stuff. So everything we've said about what markets matter is right but we shouldn't jump to the further conclusion that just because there is a sustained market, fair use is therefore necessarily off the table. There's just more thinking to do in that case.

**Brandon Butler:**

Great. Yeah very important point Peter thank you. So our next question is related to the first question Henry Stut asked, "I'd like to hear about ethical and legal concerns of using cracked obsolete or legacy software for education purposes?" So there's a good bit of older cracked software floating around on forgotten hard drives and even on present-day torrents on the Internet so I hear "What are the ethical issues when preserving drives containing this material and what are the concerns of using torrented software to access otherwise inaccessible files?" Krista maybe you want to start this time and Peter can pick up? Oh did we lose Krista?



**Peter Jaszi:**

Well I'll let me jump in and Krista can follow. The part of the question preserving the drives takes us I think actually back to principles one and two and that is to say what one is doing is trying to just make sure that the material that is on that drive gets off that drive before something happens to it. There are very few meaningful limitations other than the ones expressed in connection with principle one. If we're talking about using and in fact found software from the drive or a drive in the collection or from some other source, then and we will have more to say about this in a future episode.

Which focuses on the digital millennium copyright anti-circumvention provisions but broadly speaking both the software preservation worker and the beneficiaries of his or her work are in a very strongly advantaged position with respect to cracked software, because significant exceptions for fair uses have now been affirmatively identified as exceptions to the anti-circumvention provisions of the DMCA. So again more to come on that but it's a very hopeful situation and the fact that the the the hack or the crack has occurred in the past rather than taking place in the future is as far as I can tell not a relevant consideration.

**Brandon Butler:**

Thanks Peter, Krista anything to add to that?

**Krista Cox:**

Hello.

**Brandon Butler:**

There you are. Hi?

**Krista Cox:**

Hi, sorry I just logged back in and then my internet connection was unstable and so I lost you for a bit.

**Brandon Butler:**

Well, we're just we're talking about cracking software or finding cracked software and legal implications of that and Peter just was saying we'll talk a lot more about this in a later episode and that might be a good place to leave it but there is lots of good news coming stay tuned but Krista if you wanted to add anything to that I wanted to give you a chance to jump in.

**Krista Cox:**

No, I probably would have just said please stay tuned for our episode on circumvention and-

**Peter Jaszi:**

And if you can't wait if you absolutely have to know now there is an appendix to the code which deals with this and which we worked on to try to make a clear explanation. There are actually several things in that appendix which we're going to talk about in more detail. Licensing first but then it around page what is it of the document, 22, there is a discussion of what we think is the state of the law with respect to what I will [inaudible 00:56:03] now always in future call cracking.

**Brandon Butler:**

Thank you yes and another good resource and this will be the centerpiece of our next of our webinar on this issue. The Berkman Center at Harvard, the Law Clinic there put together a great summary of what those DMCA provisions mean and a user's guide that gets even deeper than we were able to in the code into the details of that provision. [crosstalk 00:56:33] and you can find that ... we can yeah. If you go to the Software Preservation Network website under resources there's a hit quick link and we'll also dig that up and put it in the chat here in just a second and I'll just as we're approaching our last minute here there was a nice add-on in the chat which is "I think sometimes it'd be nice to actually preserve cracked and pirated software as an artifact of the phenomenon of piracy." Which we didn't get too deeply into that in our discussions in developing the code but it sounds perfectly legitimate to me.

**Peter Jaszi:**

It does to me as well, one of the things that is the touchstone here and thinking about fair use is this notion of transformative purpose. Why are you doing it? And if

you're collecting historic examples of software piracy that's a classic non-exclusive but extremely suggestive example of a use for a transformative purpose.

**Brandon Butler:**

Excellent. Well this is a good place to wrap it up then I think, we're at the top of our hour. Thanks everyone we really appreciate you all being here if you join us next week same bat-time, same bat-channel will talk about working with source code and software licenses with our guest Daina Bouquin of Harvard-Smithsonian Center for Astrophysics and my lovely colleague Lauren Work from here at the University of Virginia Libraries. Next week's episode will be facilitated by me and Peter and thanks again for joining us today we will see you next time. You all have a good afternoon.