

Working with Amiga Floppy Disks in Historical Video Game Research

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Like most humanity scholars and historians, we work with historical materials that we compile into a corpus. How does this approach apply to researching digital-born media, such as video games designed for the Amiga computing system?

When inquiring older digital games, the question of authenticity⁽¹⁾ quickly arises. Playing a game is an integral part in my research process. Even if just briefly, I want to be in the feedback loop created by myself, the machine and the game. It helps me get a feeling for the game at hand and what it might encompass.

However, when dealing with games designed for deprecated or obsolete hardware, I consider the impact of the playing environment on my research. Is it crucial to experience the game with the original joystick? Is it acceptable to run the game on an emulator, viewing it through a 3.5" display? What role did the materiality of the original hardware play, including the sounds it produced, in shaping the player's experience?

Playing a game on an emulator is time-efficient, but can't reproduce all the aspects of playing in the original environment. Many digital games have already been copied from their physical media, such as floppy disks, and archived on informal online platforms, like the infamous WHDLoad. It's a simple matter of matching the appropriate emulator software with the downloaded game files, and you're ready to go. Working with the original hardware is considerably more resource-intensive. You need to locate the appropriate hardware, purchase it (hoping it still functions), transport it, and find storage space, not to mention the ongoing maintenance. In turn, you might get aspects, that playing the game on an emulator left out.

Long story short, we⁽²⁾ wanted to have both. We wanted to play the games we are researching on emulators as well as the original hardware.

Amiga



I recently acquired a complete Amiga 500 set, with a Commodore 1084 monitor, joysticks, and hundreds of floppy disks, primarily containing games. More information can be found in this Mastodon post. The Amiga was an immensely popular home computing system in the 1980s and 1990s, especially in Europe⁽³⁾ and particularly for gaming. Among the games in this acquisition, two are relevant to our research project: an original version of *Ringside* (1989) and a demo version of *Rolling Ronny* (1991). Most of the other games we found in this disk collection are available online on the aforementioned informal archives and are currently of lesser importance to us, since they don't relate to our research questions.

Having an Amiga available in our game lab at the University of Bern inspired us to play some of the games from our corpus on the actual machine⁽⁴⁾. We aren't necessarily focused on reviving questions of authenticity, but it's undeniably enjoyable to explore different playing setups. It is as well helps in reflecting through the different gameplay experiences. All we needed were a USB-powered floppy drive and some blank floppy disks—or so we thought.

In a brief search for software to read or write Amiga floppy disks, I discovered that the challenge lies at the hardware level. At that point, we already had a “modern” USB-driven floppy drive, which was rendered useless for our purposes. Different floppy drive systems employ distinct methods of encoding data on the disk, involving varying reading and writing patterns. This process is controlled by hardware and cannot be altered by software.

What we required was old hardware capable of connecting to new hardware...

Greaseweazle

Fortunately, I was not the first to confront this issue. Several existing projects tackle the problem. Established examples that address reading and writing old computing system floppies include KryoFlux and Pauline. I opted for Greaseweazle, which appeared to be a popular and readily accessible choice within the Amiga enthusiast community⁽⁵⁾. Greaseweazle is a compact circuit board that connects older floppy drives to modern computers running contemporary operating systems via USB. I swiftly ordered the device from an online shop specializing in spare parts and extensions for the Amiga system⁽⁶⁾.

Acquiring an older floppy drive turned out to be somewhat more challenging. Greaseweazle can accommodate numerous different drives, from those used in the Commodore 64 and Amiga to those found in desktop towers running Windows or a Unix derivative. These drives are not ubiquitous on the second-hand market, but at least relatively common and affordable, typically priced around 10.- CHF. To establish a functional setup, I also needed power and data cables, which is when most of the sellers I contacted started to ghost me. I didn't just want the drive; I also needed the necessary cables. Many sellers either didn't possess these cables or were unwilling to expend the effort to locate them, at least not at the price they were offering the drives. Scouring various second-hand stores and cash converters yielded no results either.

Finally, I located a seller in the opposite corner of Switzerland who was willing to provide both the drive and the cables.





Key Takeaways

Once I assembled all the necessary components, the rest proceeded smoothly. Installing the required command-line tools for macOS was straightforward, thanks to the well-documented Greaseweazle Wiki. I would like to delve further into this aspect, but reading and writing was so effortless, I would just end up repeating the Wiki. Feeling comfortable with the command line helps a lot, although the overall process isn't to complicated. Problems might arise, if a user is not to familiar with the terminal environment. There are also several graphical interfaces for Windows⁽⁷⁾, which I didn't test.

What intrigued me more was the minor ordeal I underwent to obtain the appropriate hardware, despite it not being excessively old. It began with the realization that a newer USB-driven floppy drive wouldn't suffice and extended to visiting every second-hand shop in my area. Floppy disks still exist, but there are only a few individuals who truly care about this technology, aside from specialized archivists and enthusiasts.

This challenge doesn't affect us alone. Game preservation faces a distinct window of opportunity, not only due to the limited availability of key technologies on the market but also because these technologies rely on peripheral components like out-of-market cables, among others. Consequently, there's an urgent need to establish efficient procedures to aid in the preservation of ageing video games. It is important to swiftly establish structures to facilitate the rescue of these cultural artefacts.

For our research project, this technology is invaluable. We rely on it to extract data from floppy disks, preserve them, and share them with our fellow researchers. Additionally, it allows us to play dumped games on the original hardware. Consequently, we need to acquire the necessary knowledge and infrastructure to set up and maintain such systems. Maintenance will be a journey for another day. For now, I enjoy the ease of use that the current setup brings to our research process.



Some more sources

- Reading Amiga Floppy Disks on PC
- Floppy Disk Preservation Project
- Home · keirf/greaseweazle Wiki · GitHub

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1. With regard to how a game should be played to deliver the intended experience. [back]
2. As in the Confoederatio Ludens research team [back]
3. Exact numbers are hard to come by. According to Commodore-Amiga Sales Figures, the UK, Germany, Italy and France were leading regarding sales. The UK alone had more sales than North America and Australia taken together. [back]
4. You can get a rough idea which games we’re interested in by visiting Swiss Games Garden [back]
5. Like on the English Amiga Board or in the r/Amiga Subreddit [back]
6. Greaseweazle V4 on the AMIGAstore [back]
7. For example GreaseweazleGUI or FluxMyFluffyFloppy [back]