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E-Lit after Flash: The Rise (and Fall) of a “Universal” Language

Anastasia Salter and John Murray

While electronic literature has always been found across a diverse range of platforms, some technologies emerge that define an era. Flash is one such platform: a tool for creating interactive content to run outside the restrictions of the browser through an embedded media player that at one point was so ubiquitous its controlling company, Adobe, claimed it was found on “99.9%” of computers—a percentage subject to dispute but still impressive even when challenged (Arah 2009). The appeal of this platform to electronic literature creators was clear: by breaking the rules of the browser, Flash offered an artist an author-friendly space for experimenting with interactivity and animation at the limits of potential web media. Flash rose as a form so influential among the practitioners using it that Lev Manovich coined the term “Generation Flash” to describe the artists using Flash to transform practices of animation in 2002 (Manovich 2002). Even more essentially, Flash offered the allure of a “universal language” for the interactive web, promising creators they could build once and run their work anywhere, without needing a middle-man distributor or interpreter. This “write once” philosophy suggested that Flash could reach audiences on any device. While the Flash editor remains primarily a proprietary and expensive software program, the Flash viewer and specification is both ubiquitous and free for use. Yet Flash has been declared dead, thanks in large part to Apple’s decision to exclude Flash from iOS and thus from meaningful participation in the mobile web, and a world with increasing

emphasis on mobile platforms and native web technologies is bringing about transformations in the landscape of electronic literature. Over its twenty-plus year lifespan as a dominant platform, Flash has had a considerable impact on the aesthetics and development of electronic literature, with its groundbreaking emphasis on visuals and accessible metaphors for coding enabling the construction of work. From the influence of a popular and powerful technology arise a number of challenges that face the field today: we consider here only a few of the problems of archiving, preserving, and analyzing Flash works given the nature of Flash as a platform. Finally, we survey the changes that electronic literature is now undergoing in what may soon be a post-Flash world, with multiple platforms vying to replace Flash but none offering the same promise of a cohesive standard.

While Flash as a platform is too broad to examine fully here (see our study on the platform, *Flash: Building the Web*, MIT Press 2014), it has a few primary characteristics that make it notable as part of the history of the web. Flash was first launched in 1996 as FutureSplash, a tool for animation: it was acquired first by Macromedia and later by Adobe, both of whom expanded the platform to include a number of new options. Flash started as a tool for timeline animation, resembling the process of working on traditional frame-by-frame animation but with the assistance of “tweening,” or the algorithmic filling-in of gaps between frames. Over time programming was integrated into the interface through ActionScript, a scripting language that started as a way to add basic behaviors and interactivity and eventually became a full object-oriented language. Flash’s style is founded on the use of vector graphics, scaling algorithmic images, which is part of what gave Flash works the distinctive style that Manovich notes as essential to “Flashimation” (Manovich 2002). The platform also makes use of two file-types that have become ubiquitous on the web: .SWF, the released files in Flash that are played within the browser using the Flash Player, and .FLA, the source document of Flash prior to compilation. Most works are only released as .SWF files, and the Flash Player has maintained an emphasis on supporting backwards compatibility, allowing old released works to be viewed in later versions of the Flash Player. This backwards compatibility has been essential to the popularity of Flash with web arcade game creators and electronic literature artists alike, as it means that creators working in older versions of the Flash editor (which were less complicated and inexpensive to acquire) can still distribute new works built in those unsupported versions and expect the work to be playable across modern browsers.

The Platform Studies series has explored several hardware platforms (Atari Video Computer System, *Racing the Beam*, Bogost and Montfort 2009; Commodore Amiga, *The Future Was Here*, Jimmy Maher; Nintendo Wii, *Codename Revolution*, Steven E. Jones and George K. Thiruvathukal) that provide constraints and affordances that shape from the lowest levels

of hardware to software to user networks the context and potential for an experience. Montfort and Bogost define the platform as “the abstraction level beneath the code ... the humanistic parallel of computing systems and computer architecture, connecting the fundamentals of new media work to the cultures in which they were produced and the cultures in which coding, forms, interfaces, and eventual use are layered upon them” (Bogost and Montfort 2009). This attention to the layers of hardware and architecture serves as a reminder that works (including works of electronic literature) are first experienced in a material context, and removing that context divorces the work from some of its layers of meaning. While emulators allow us an entry point into the original experience of a work, they often strip away layers of the platform and interface that the lens of platform studies reminds us are essential. Flash works thus far have benefited from the status of Flash as a software platform, which to some extent means an independence from hardware constraints that makes Flash works easier to preserve and distribute than hardware-dependent works. However, Flash itself has a set of architecture and material constraints that have made a powerful impact on the aesthetics and poetics of works produced using its affordances, and thus platforms like Flash are essential to our understanding of practices within electronic literature. In many cases the dependence of a software work on a particular hardware configuration is only revealed with the progression of time, and there are a number of assumptions implicit in most Flash works of hardware configurations and interfaces—particularly the use of the keyboard and mouse for controls. And the dependence on a particular set of software constraints (particularly when rendered invisible through the act of compiling, as in the transformation from.FLA to.SWF in creating a distributed Flash work) can go even more unexamined.

Flash in Electronic Literature

How can we measure Flash’s significance in the history of electronic literature thus far? One possibility lies in quantifying Flash’s visibility within the landscape of electronic literature is particularly clear when exploring all of the works collecting in the ELMCIP database, a cluster Scott Rettberg describes: “one of the identifiable clusters is a set of works developed in Flash or similar software that emphasizes motion graphics, kinetic texts, or innovative interface and interaction,” noting further that Flash is one of the top-ten tags within the most-cited works in the database (Rettberg 2014). Rettberg’s analysis of the clustering around two dominant platforms, Flash and hypertext, further suggests Flash’s influence in types of works: animation, visual poetry, audio, and music are all clustered around Flash in visualizing the database. There are nearly 400 works tagged as Flash

in the ELMCIP, and not quite 500 tagged as hypertext as of March 2015. While the ELMCIP is not a comprehensive survey of all works that might be considered as electronic literature, it is inclusive of the collections, major international venues, and self-archived work by practitioners who identify with the field. The dominance of “Flash” and “Hypertext” as tags demonstrates the significance of the tool of practice to categorizing and understanding any particular work within the field.

Flash’s popularity as a platform for electronic literature can be attributed both to the sustained community around it and the ease with which Flash works are created and distributed. There are other platforms with similar affordances, and solutions for animation in particular abound. Matt Kirschenbaum’s observations on Flash note that its popularity as a platform (as opposed to competitors with similar affordances, such as VRML or QuickTimeVR) is thanks to distribution and flexibility in cross-platform performance, and thus “the salient question is not whether one can produce ‘better’ content with VRML or with Flash, but rather the extent to which the kind of content we create for environments like the Web is determined by various social histories, histories that are often corporate, but always situated within absolute zones of material and ideological circumstance” (Kirschenbaum 2003). Flash’s dominance is likewise not a proof that it is a “better” platform for electronic literature, but rather a reflection of the modalities, architecture, and distribution it offers despite its position as a corporate-controlled platform.

The choice of platform is thus a definitive choice when creating any work of electronic literature, as it is a choice of both affordances within the platform and the positioning of the work in the landscape of the web. Working with a platform can even be a core influence on how the work is constructed. Geniwate’s description of her process of working with co-author Deena Larsen on *The Princess Murderer* (Flash, 2003) notes how the work in ActionScript influenced the construction of the text itself: “Increasingly we found the programming code seeping into the surface text. It couldn’t be helped: the world we created simultaneously existed on two levels: a surface narrative about an insatiable Bluebeard and his ferocious princesses, and a semi-subliminal narrative about performative textuality and world-creation. The act of writing code infested the act of writing narrative and vice-versa” (Geniwate 2005). Such collusion of text and code through a platform can even become central to the experience of a work: “Loseby’s installation uses Flash actionscripting to ‘domesticate’ the monstrosity of code and directly thematize the fear of invisible and unknowable code, disturbing because she considers it to be ‘a language that is both hidden and alien to me’” (Raley 2005). Such work demonstrates how the platform can become both tool and subject, embedded as it is in the process and reflexive work of electronic literature.

One of the greatest challenges in electronic literature is the preservation of a canon. Several projects have made specific efforts at archiving and

preserving works: notably, the *Electronic Literature Collection*, Vols. 1 and 2 have served as an entry point into electronic literature. Likewise, the Pathfinders project has taken on the task of documenting works of electronic literature that might otherwise have become unreadable (Grigar and Moulthrop 2015). Flash works represent a particular problem for the archivist: they are a form of compiled work, and deconstructing the decompiled file into reusable or analyzable parts is difficult. Flash’s own software configuration warranted particular mention in Nick Montfort and Noah Wardrip-Fruin’s recommendations for creating works of electronic literature that can easily be preserved: “Flash has been widely adopted, and it does offer capabilities that are essential to some electronic literature authors’ practice. However, we recommend against using Flash to create elements that can be easily created in open, non-proprietary systems ... formats that are more preservable than Flash may emerge as useful in the future” (Montfort and Wardrip-Fruin 2004). Again, Montfort and Wardrip-Fruin’s recommendations present a reminder that while Flash as a platform empowered many amateur creators in large part thanks to an active and sharing community of developers, it remains a closed system.

The recommendation against Flash is in accordance with Montfort and Wardrip-Fruin’s overall recommendation to avoid corporate-driven systems in favor of community-driven systems, a recommendation made in 2004 a decade before Adobe’s support of Flash has mostly diminished. Likewise, writing in 2007 about the first volume of the ELC, John Zuern observes his concerns for the future:

The dates that would in some ways be even more useful but that cannot be listed with any precision are the expiration dates of the works included in the ELC. How far out are we, for example, from the end of Flash, a technology abundantly represented in this volume? What provisions have we, as a culture or as individual artists, made to ensure that something of the work remains accessible even after the program that created it and the platform on which it runs are obsolete?.

(Zuern 2007)

Now that Flash’s spiral of diminishing influence has clearly begun, such questions have become even more pressing—and should inform our evaluation of emerging platforms for electronic literature, which will likely suffer from the same problems in the future.

Post-Flash Electronic Literature

Our recent study of Flash represented the first major academic work on Flash as a platform, as all other books devoted to Flash have focused on it from

an applied or technical lens. This omission of Flash as an object of primary study is a significant reminder that the platforms we rely upon are often less visible than the works they enable, and the post-Flash era of electronic literature will likewise rely on platforms that may or may not be sustainable and easily preserved. More attention than ever is being paid to Flash's structures following its apparent death. The subject of post-Flash electronic literature warranted a panel at the 2014 Modern Language Association conference, following on Mark Sample's assertion in the proposal:

Unlike the avant garde art and experimental poetry that is its direct forebear, e-lit has been dominated for much of its existence by a single, proprietary technology: Adobe's Flash. For fifteen years, many e-lit authors have relied on Flash—and its earlier iteration, Macromedia Shockwave—to develop their multimedia works. And for fifteen years, readers of e-lit have relied on Flash running in their web browsers to engage with these works.

(Sample 2013)

One of the panel's participants, Christopher Funkhouser, drew particular attention to how the affordances of Flash became the affordances of digital poetics, emphasizing the correlation between platform and practice (Sample 2013).

Just as Flash played a role in shaping a generation of work in electronic literature, so too are the platforms that are displacing it playing a part now in changing discourse. The apparent deciding moment for the death of Flash as a universal language came hand in hand with the rise of mobile and touchscreen chameleon interfaces, with their new demands and affordances. Mobile platforms have brought new attention to electronic literature works, particularly with the category of interactive book rising in commercial viability, but such texts are often tied to a particular ecosystem (iOS or Android) and cannot be easily archived or accessed outside those native hardware devices (Salter 2015). In this new ecosystem, the apparent new ruling universal language is a throwback to the early days of the web. HTML (now HTML5), augmented with CSS and JavaScript, can span across PC, Mac, iOS, and Android architectures easily, but without the flexibility or distribution networks available for native applications on those same platforms.

However, the hole left behind in Flash's wake may be not a dearth but a blessing for the diversity of practices in electronic literature. Sandy Baldwin and Tiffany Zerby suggest that the relationship between works and platforms should not be governed by a dominant form:

E-lit is always already there, in the same space as all the other components and functions of the computer and the network. The Modernist notion claims the literary would see the presentation of surreal work using Flash

as involving stratification, where the work of electronic literature does something other with the literalness of the interface. We see something different in the flat, high-speed space of contemporary digital writing and publishing: a relation of mutual inhabitation and co-parasitism. We refuse to see a dominant interface or technical system in which the artist carves out her works (Baldwin and Zerby 2014).

Indeed, as we face the new challenges of preserving, translating, and archiving the Flash era of electronic literature with a post-Flash future on the horizon, we can see that the promise of "write once" was always an illusion, a false promise that no other platform can rise to fill. Post-Flash electronic literature is found on tablets and phones, on virtual reality headsets and in installations, and even (still!) in hypertext and Flash.

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