"Coder," "Activist," "Hacker":
Aaron Swartz in the Italian, UK, U.S., and Technology Press

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Aaron Swartz has been one of the pivotal characters in the recent history of the Internet. As an American activist, programmer, hacker, and open access advocate, Swartz was involved in the launch of now established Web standards and services and has been vocal in some of the recent debates about digital rights, copyright, and free access to the Web. Beginning in 2011, Swartz was involved in a legal battle for copyright infringement, having allegedly downloaded thousands of academic papers from the JSTOR archive. In 2013, at age 26, Swartz committed suicide. This article, based on a content analysis of 272 articles, sheds light on how eight news outlets (mainstream newspapers from Italy, UK, U.S., and two online-only technology websites) portrayed Swartz over the course of a three-year time frame, from July 2011 to December 2014.

Keywords: journalism, hacking, hacktivism, framing, Aaron Swartz

Aaron Swartz's death on January 11, 2013, sparked a powerful reaction among technologists and activists. Swartz, born in 1986, had been one of the most vocal individuals in the recent history and developments of the Internet. For instance, Web inventor Tim Berners-Lee's (2013) eulogy stated that Swartz was a mentor and "wise elder." Swartz was among the coders and founders of the social news site Reddit and one of the initiators of the RSS feed protocol, tools that are now widely popular standards among Internet users. Besides his work as programmer, Aaron Swartz was also involved in the development of Creative Commons, the organization founded by scholar Lawrence Lessig that established less restrictive options for flexible copyright (Internet Hall of Fame, 2013). Moreover, Swartz was also highly engaged in the open access movement and is the author of the "Guerrilla Open Access Manifesto," a text that is considered a cornerstone of open access (Swartz, 2008). As an activist, Aaron Swartz cofounded Demand Progress, a grassroots organization devoted to online freedom. Swartz, with Demand Progress, was deeply involved in the initiatives that pushed for the withdrawal of the United States's Stop Online Piracy Act (SOPA) legislation in 2012 (Swartz, 2013). In 2011, Aaron Swartz was involved in a major legal battle after he downloaded thousands of academic papers from the JSTOR archive using a computer connected to the Massachusetts Institute of Technology (MIT) network. Aaron Swartz never publicly revealed his motives and rarely discussed the case at all; still, he returned all the downloaded material to JSTOR (Peters, 2016). The indictment against Swartz tried to demonstrate that he intended to distribute the JSTOR academic papers for free on "file sharing sites," although there is no evidence showing he actually wanted to proceed this way (Greenwald,

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2013). Justin Peters (2016) writes that "the JSTOR downloads, Swartz and his supporters rationalized, equated to withdrawing too many books from a library" (p. 222). JSTOR itself did not want Swartz to be prosecuted. In a press statement, JSTOR claimed the following:

> We secured from Mr. Swartz the content that was taken, and received confirmation that the content was not and would not be used, copied, transferred, or distributed. . . . The criminal investigation and today's indictment of Mr. Swartz has been directed by the United States Attorney's Office. It was the government's decision whether to prosecute, not JSTOR's. As noted previously, our interest was in securing the content. Once this was achieved, we had no interest in this becoming an ongoing legal matter. (JSTOR, 2011)

As a result of these events, Swartz was charged and faced decades in jail (Wiedeman, 2011). His family, friends, and supporters linked his suicide to the pressure derived from his legal situation (Williams, 2013). Praised for his impressive technical skills and his relentless commitment in the causes he joined, Aaron Swartz has been a catalyst for some of the major issues that have shaped the current debate around the Internet and access to knowledge in the digital age. For these reasons, it is important to understand how the media have portrayed Aaron Swartz's life and work across different countries, journalistic cultures, and media types.

Analyzing Swartz's media coverage is the first step toward a broader understanding of the critical role he played within the most recent history of the Internet. As de Vreese (2005) argues, "framing involves a communication source presenting and defining an issue" and, at the same time, "by emphasizing some elements of a topic above others" (pp. 51–53), the framing process is usually the first step to historicize a particular event or individual. In the case of Aaron Swartz, given its historical proximity to the time of the writing of this article, to understand how influential news outlets covered his life and work is the first step in scrutinizing how Swartz will be remembered and contextualized. At the same time, it can bring interesting insights on how hacking culture, the battles of Internet freedom, and "digital dissidents" (Radsch, 2016; Ziccardi, 2013) have been generally reported and made the news. This article aims to investigate these aspects further with a content analysis of how newspapers in the UK, U.S., and Italy, plus two leading technology online outlets, have covered Aaron Swartz over a three-year time frame, from July 2011 to December 2014. With the lens of this analysis, this article attempts to contribute to a more general understanding of how media are covering activism and hackers by answering the following two research questions:

RQ1:   How was Aaron Swartz portrayed by the selected news outlets?

RQ2:   How was the coverage characterized in terms of evolution across time and quoted sources?

This article begins with an overview of Aaron Swartz and the main projects and topics covered in his lifetime. This is followed by a review of the existing literature related to the framing of prominent activists, hackers, and "digital dissidents." The methodology applied is then detailed, including the sampling used for the purposes of the article. Finally, the remaining sections present and discuss the findings and conclusions drawn from the research.

Aaron Swartz: Coder, Activist, Hacker

It is difficult to define Aaron Swartz (portrayed in Figure 1) in a single way. Born in November 1986, Swartz had worked and operated in different fields, from computer programming to political activism. In his book, Justin Peters (2016) has so far provided the most extensive chronicle of Swartz's life and work, while the 2014 documentary *The Internet's Own boy: The Story of Aaron Swartz*, by director Brian Knappenberger has told the story of Swartz's life, focusing particularly on his final legal battle. The documentary, which is also distributed under a Creative Commons license following Swartz's principles and ideals, features members of the Swartz family alongside prominent Internet figures who met Aaron Swartz because of his works and activism: among others, Professor Lawrence Lessig, Professor Gabriela Coleman, Tim Berners-Lee, and Cory Doctorow remember Swartz together with archive video material. Michael O'Sullivan (2016), instead, has contextualized Aaron Swartz in the broader debate about open access to knowledge and the role played by digital technologies. Despite his prominent and influential position in the Internet milieu, Aaron Swartz has yet to be scrutinized by scholars, especially when it comes to media studies. To provide an introductory overview of Aaron Swartz's life and work, it is possible to group his activities in at least three different sectors, discussed next.

Figure 1. Aaron Swartz speaking at a rally against the Stop Online Piracy Act. Credit: Daniel J. Sieradski (Creative Commons BY-SA 2.0)

Engineering and Coding

Aaron Swartz's involvement as a coder started early on in his teenage years. When Swartz was 14 years old, he was involved in the working group that later developed RSS 1.0, the now widely diffused protocol that enables the receipt of notifications when a Web page publishes an update (Tarhini, Scott, Sharma, & Abbasi, 2015). Swartz's name is also connected to Reddit, the social news site whose development he contributed to since 2005 until the company's acquisition by publisher Condé Nast. Reddit now has millions of users worldwide, especially in the U.S. (Olson & Neal, 2015). Swartz, together with journalist Kevin Poulsen, was also the initiator of the software now known as SecureDrop, an open source encryption software enabling whistleblowers to submit documents and leaks to journalists in an anonymous and safe way. Based on the WikiLeaks approach to whistleblowing, SecureDrop is now maintained by the Freedom of the Press Foundation and has been adopted by prominent news outlets including *The Washington Post* and *The Guardian* (Berret, 2016; Di Salvo, 2014; Heemsberger, 2016).

Political Activism

Aaron Swartz cofounded Demand Progress, an NGO active from 2010, after having worked on the advocacy website watchdog.org since 2008. Its most prominent comprehensive campaign has been against SOPA and the Protect IP Act (PIPA) U.S. copyright legislation, which culminated during the Internet Blackout protest on January 18, 2012 (Savov, 2012). Swartz was one of the most vocal advocates against the SOPA and PIPA bills, and David Segal (2013a) previously noted that the campaigns were a catalyst for Swartz's activism. The January 18, 2012, "Internet Blackout" was the most intense act of protest against the bills. David Segal (2013b) has expressed the dangers of the proposed legislation against which the blackout was protesting:

> SOPA would have forced sites to police user-generated content before it was uploaded, fundamentally redefining the operations of sites similar to YouTube, Facebook, Reddit, and even blogs that allow for comments from readers. Even many domestically-registered sites would have been impacted: search engines would've had to have scrubbed out links. Sites reliant on user-posted content would've had to have policed links to any domains that had been blacklisted. And then they'd probably come directly for domestic sites next. (p. 270)

For Swartz, the mobilization against SOPA and PIPA represented the actualization of his views around political activism. As Justin Peters (2016) notes, the ties between Swartz and his political battles were structured around same principles and tactics:

> On July 28, 2011, a week and a half after being indicted, Aaron Swartz posted to his website a working draft of a document modestly titled "How to Save the World, Part 1." The post, which he shared with only a few friends, synthesized many of his insights into the ways in which the Internet could be used to organize and catalyze social change. . . . Rather than a form of political action group focused on one single issue or

tactic, Swartz proposed that organizers should assemble groups of people supremely competent in certain relevant disciplines—investigators, activists, lawyers, lobbyists, policy experts, political strategists, journalists, and publicists—who could combine their efforts and advocate effectively for any issue, big or small. Swartz envisioned a flexible, intelligent, multifaceted task force that would learn from its mistakes and refine its tactics accordingly: a team of specialists that, cumulatively, worked as generalists. (p. 247)

Open Access, Copyright Reform, and the JSTOR Legal Case

Swartz was also heavily involved in copyright and open access issues. Among other initiatives, when he was 15 years old, Aaron Swartz joined the Creative Commons movement and helped with its technical development by working on the code layer of the Creative Commons licenses (Lessig, 2013a; Peters, 2016). His involvement with the open access issue grew in the following years. Swartz authored the "Guerrilla Open Access Manifesto" (Swartz, 2008) and was an active contributor to Wikipedia, about which he published the essay "Who Writes Wikipedia?" (Swartz, 2006). Furthermore, Swartz was the mastermind behind the Open Library project, which he launched in 2006. The site aims at being a Wikipedia for books, where users can create entries for every book ever published. Swartz launched it by acquiring the entire Library of Congress database. Open Library is currently operated by the organization Internet Archive. The legal case involving Aaron Swartz began in 2011 and continued until his death; the case is interconnected with his role as a coder, a hacker, and an activist (Atkinson & Fitzgerald, 2015). Between 2010 and 2011, Swartz used a computer running a script and connected to the network of the Massachusetts Institute of Technology (MIT) to download a massive number of academic articles hosted by the academic publisher JSTOR. When Swartz's involvement was discovered, he was arrested and charged with several different felonies, including some that fell under the 1985 Computer Fraud and Abuse Act (CFAA). The possible maximum penalty Swartz faced amounted to a prison sentence of 95 years (Peters, 2016).

The interconnection between Swartz's engineering and activist work fits under the definition of *hacker*. For the purpose of this article, *hacker* refers to "subjects with great computer skills, or dedicated to a creative use of technology, without criminal intentions" (Ziccardi, 2013, p. 1). Thus, hacker is a specific category of computer technicians whose skills are applied to the construction of tools or for the dedication of their knowledge to "productive freedom" and whose history refers to the birth of the computer itself (Coleman, 2013). In particular, hackers are usually characterized by the adoption of a specific ethical stance, namely, the *hacker ethic*, the implications of which go beyond the approach to computers and technology in general.

Steven Levy (1984), in his seminal book *Hackers: Heroes of the Computer Revolution* (as quoted in Coleman, 2013), has been debating the basic component of the hacker ethic, which includes information freedom as a goal, an antiauthoritarian approach, meritocracy, and the use of machines as social tools to make the world better. The hacker ethic is definitely not a set of normative and strict elements, but connected individuals and organizations usually share a set of common principles and stances. Aaron Swartz's affiliation with hacking culture is strong, but the term *hacker* brings a double

weight in his case, especially when it comes to the media coverage of his legal case. Despite its correlation with technology utopianism and its original ethic, the term *hacking* is now frequently used in media reports to wrongly refer to malicious activities, such as data theft or computer network infringement and other criminal activities that can easily drive media stereotypes or sensationalism (Birks, 2015). In extreme cases, this distorted reporting even outlines hackers as cyber vandals or potential cyberterrorists (Vegh, 2005). Charges Aaron Swartz faced, in the context of his legal case, included "hacking" into the MIT network to download content from JSTOR. Therefore, in the context of this research, it is fundamental to analyze how the media portrayed Swartz in terms of hacking. These insights will contribute to understand whether media connected Swartz to the hacking culture or rather to hacking as a criminal activity, and both distinctions are currently under debate (Li, 2013).

Hacking and activism are also strongly related under the notion of *online activism* that Vegh (2003) defines as "a politically motivated movement relying on the Internet" (p. 71). In her analysis of the reception of the term *hacker* over time, Helen Nissenbaum (2004) has highlighted two particular political aspects that have always characterized the hacking culture beyond its own technological applications. These are the contribution to the political arena, "supporting causes of liberty and individual autonomy in policies involving IT" and "protest against encroaching systems of total order where control is complete, and dissent is dangerous" (Nissenbaum, 2004, pp. 211–212). Several projects Aaron Swartz was affiliated with, including the campaign against the SOPA/PIPA bills, do fit under these concepts. Again, when it comes to the media reporting of Aaron Swartz, it is interesting to understand whether the notion was applied in a neutral way, as activism perpetuated with the support of Internet technologies, or in a more biased way; the latter of which has already been noted in other similar cases, where activist have been labeled in the "cyberterrorism" frame (Vlavo, 2015).

Giovanni Ziccardi (2013) proposed the notions of *digital resistance* and *digital dissidence* as quasi synonymous. He defined strategies "aimed at unlocking the structure of a corporation, of a state, of a single computer or even of an entire legal or political, system for the purpose of benefitting humanity" (Ziccardi, 2013, pp. 5). This framework is the interconnection between hacking and activism and emphasizes the role of *liberation technology* (Diamond, 2010) in bringing together traditional resistance strategies and digital technologies. Thus, by adopting the *digital resistance* notion, it is possible to consider that Aaron Swartz belonged to the same cultural background of those who brought together activism, hacking, and civil disobedience to pursue civic and social aims. In this sense, prominent whistleblowers, such as Edward Snowden, Chelsea Manning, or Jeremy Hammond, and the WikiLeaks founder Julian Assange, would also fit under the *digital dissident* definition. In the next section of this article, with the purpose of focusing on the framing of Aaron Swartz, I review recent academic publications about the media representation of digital dissidents and whistleblowers.

Framing Hackers, Activists, and "Digital Dissidents": A Literature Review

A growing amount of academic literature has focused on media coverage of activists, hackers, and digital dissidents, with different approaches and theoretical backgrounds. For instance, Chelsea Manning and Edward Snowden have been objects of analysis. Although Aaron Swartz was not a whistleblower himself, both Manning and Snowden have commonalities with the Swartz case, such as the

pivotal role of technology in their activities and the goal of exposing wrongdoings by revealing information (Monarch, 2015). Manning's coverage has been the object of different analysis, for instance in the UK, U.S., and Germany, journalism researchers have found that the coverage had been generally neutral (Thorsen, Sreedharan, & Allan, 2013). The media delivery of the gender issues connected to the Manning case have been also debated and reveals how "mainstream news outlets were hesitant in acknowledging Private Manning's request to be referred to as 'Chelsea'" (Hackl, Becker, & Todd, 2015).

The coverage of Edward Snowden has been scrutinized in the U.S., UK, and Chinese press (Di Salvo & Negro, 2016), and researchers have not found substantial differences in the way news outlets have written about Snowden. Again, a "balanced" approach has been found to be prominent. The Western coverage of Snowden and the Hong Kong–based media perspective have also been analyzed, and a chronological evolution of frames adopted was underlined in this case (Wu et al., 2015). Qin (2015) instead looked at how legacy media and Twitter users have defined Edward Snowden. The study concluded that social media users had been widely supportive of Snowden, while legacy media showed a more negative tone and increasingly stressed the national security issue. When it comes to WikiLeaks, Luther and Radovic (2014) have looked at how Julian Assange was portrayed by the media in France and in the U.S. Here, strong national biases were identified, and no cross-border uniformity of coverage was raised, despite the attempts by governments to appeal to national security and other threats posed by WikiLeaks. The analysis of the research results will look at the coverage of Aaron Swartz also with the lens of the issue-attention cycle concept (Downs, 1972) that aims at explaining the public's revolving attention to single issues that stay at the center of the debate for a short time, before being abandoned again or reappraised. In his study, Anthony Downs (1972) proposed a five-stage process composed as such: alarmed discovery and euphoric enthusiasm, the preproblem, the cost of significant progress, the gradual decline of intense public interest, and the post-problem stage. This scheme will be helpful to make sense of the Swartz's coverage, in particular giving the sudden death of Aaron Swartz.

Methodology and Sampling

Eight news outlets were selected for the purposes of this content analysis. In Italy, the analysis focused on *Corriere della Sera* and *La Repubblica*; in the UK, on *The Guardian* and *The Daily Telegraph;* and *The New York Times* and *The Washington Post* were analyzed in the U.S. For these newspapers, both online and print editions were included in the study. The analysis also included two digital-only technology-related news outlets: *The Verge* in the U.S. and the Amsterdam-based *The Next Web*. These two digital outlets were chosen for being leading voices in technology and Web journalism with an international audience and reach. The rationale behind these choices was to compare the coverage provided by traditional news outlets and "webby" digital native news sites and look for similarities and differences in their editorial choices concerning Aaron Swartz. For the Italian, British, and U.S. news outlets, articles were collected through the online database Factiva, which archives both online and print records of these publications. The keyword used was "Aaron Swartz," while the research involved all articles published between July 1, 2011, and December 31, 2014. This time frame was chosen to analyze the time between Swartz's indictment (July 2011) and a full year after his death (January 2013). For *The Verge* and *The Next Web*, which are not stored in the Factiva archive, searches were conducted with Google, using "Aaron Swartz site:theverge.com" and "Aaron Swartz site:thenextweb.com" and using the

same time frame. The Google command "site:sitename" enables users to look for stories published by specific websites.

In total, 272 articles were identified. Once collected, articles were manually coded according to different criteria: their medium of publication, their tone, covered topics, affiliation with Swartz, wording, and quoted sources. The coding process was entirely operationalized by the author, who worked as a single coder both for the English news outlets and those in Italian, the author's first language. For the medium, where applicable, articles were divided by print or Web. For the tone, three different categories were selected: neutral articles, with a general "just-the-facts" approach or one that did not express explicit opinions; positive articles that portrayed Aaron Swartz in a clear, positive way; and negative articles, with a general negative attitude toward Aaron Swartz. The statements and lexical choices made by the authors of the article pinpointed the tone of the stories. For instance, obituaries portraying Aaron Swartz as an hero for Internet freedom were coded as "positive"; newsy stories concerning advancement in the Swartz's legal case were coded as "neutral"; and articles critical against Swartz's acts received the "negative" label. When it comes to the topics, articles were coded into seven different categories:

- *Activism*: stories covering Aaron Swartz's activist activities
- *Creative commons*: stories dealing with Aaron Swartz's involvement in the open access movement and in Creative Commons
- *Death*: stories dealing with Aaron Swartz's death
- *Engineering*: stories covering Aaron Swartz's work as a programmer and coder
- *Entertainment*: stories dealing with Aaron Swartz references in arts and pop culture
- *Legal*: stories discussing legal implications of Aaron Swartz's case
- *Trial*: stories dealing with Aaron Swartz's trial chronicles

The research also focused on the terminology journalists used while referring to Aaron Swartz. This was crucial in understanding the newspapers' perspectives on Swartz, as lexical choices are also among the most powerful and straightforward framing devices that journalist can use while addressing issues or news. As a third layer of analysis, sources quoted in the articles were scrutinized. For each article, all the people and institutions that expressed a view or a reference to Aaron Swartz story were listed. Sources were considered a fundamental element for the way Swartz was portrayed by the analyzed media, as sources are also among the most important framing devices and operate in parallel with other elements (Tankard, 2001). While coding sources, if a single source was mentioned more than one time in the same article, it was calculated only once for each analyzed story.

The analysis applied relies only on frames intended as content of the articles, referring exclusively to the elements of the news discourse itself (Pan & Kosicki, 1993). The reception of the stories by the audiences is not part of the current research. This approach was selected as it is in line with previous research examining Edward Snowden (Di Salvo & Negro, 2016). Furthermore, in the context of this article, frames are intended as "an emphasis in salience of different aspects of a topic" (De Vreese, 2005, p. 53) applied by journalists to their stories. All the coded elements were analyzed by means of deductive content analysis (Elo & Kyngäs, 2008), with the purpose of examining how the eight news outlets portrayed Aaron Swartz between the summer of 2011 and the end of 2014.

Content Analysis Results

Media Attention Spikes and National Lenses

A first clear-cut result of the content analysis comes from the chronological distribution of the articles across the three-year span. The overwhelming majority of the stories were published in 2013 (199 of 272), with an additional 60 published in 2014, and these were preceded by only nine publications in 2011 and four in 2012 (see Figure 2). This trend was apparent for all of the countries analyzed, and there were also no substantial differences among news outlets. This is because the media attention on Aaron Swartz spiked in January 2013, when Swartz died. *The Verge* and *The Next Web* also demonstrated these publications patterns in spite of being largely focused on technology and the Internet—an interesting result considering Swartz's role in these sectors in the preceding years. When it comes to the geographical distribution of the articles, U.S. outlets were found to have published more extensively about Swartz, with 107 stories in the three years. The tech publications followed, with 69 stories, the UK had 60, and Italy had a total of 36. These results are consistent with the fact that the Swartz legal case took place in the U.S., under U.S. jurisdiction, and with U.S. parties involved. Furthermore, the reduced coverage from the Italian press may be an artifact of the Italian media system, whose infrastructures and resources are weaker and smaller than those in the UK and U.S. (Hallin & Mancini, 2004). Moreover, Italian journalistic culture tends not to offer much attention to foreign news (Bonini & Morello, 2014), and thus national narratives and stories are usually predominant.

U.S. outlets have clearly found a strong national frame in the Aaron Swartz case and have consequently covered it emphasizing the "relevance" news selection criteria (Nossek, 2004). Thus, it comes with little surprise that U.S. news outlets have dealt more extensively with Aaron Swartz than their UK and Italian counterparts. When it comes to the tech publications, both *The Verge* and *The Next Web* provided considerable attention to Aaron Swartz in the analyzed time frame with a strong spike in 2013, and this is not surprising given the strong implications of the case on digital affairs, Internet rights, and technology. It is worth noting that *The Verge* is a New York City–based U.S. publication and that besides its sectorial interest in Aaron Swartz, it could also have applied the same national relevance selection criteria as with the other U.S. outlets. When it comes to the single newspapers, those that have published more stories in the selected time frame are *The New York Times* (59 articles), *The Verge* (53), *The Washington Post* (50), while *The Guardian* (49), *La Repubblica* (22), *The Next Web* (16), *Corriere della Sera* (15), and *The Telegraph* (12) follow. All the news outlets who run both online and print editions, with the exception of *Corriere della Sera*, published more extensively on the Internet than on paper. In this case, it is plausible to argue that online editions had a preference because the nature of the content and topics related to Aaron Swartz are Internet-related issues and hence newspapers likely favored this medium over print.
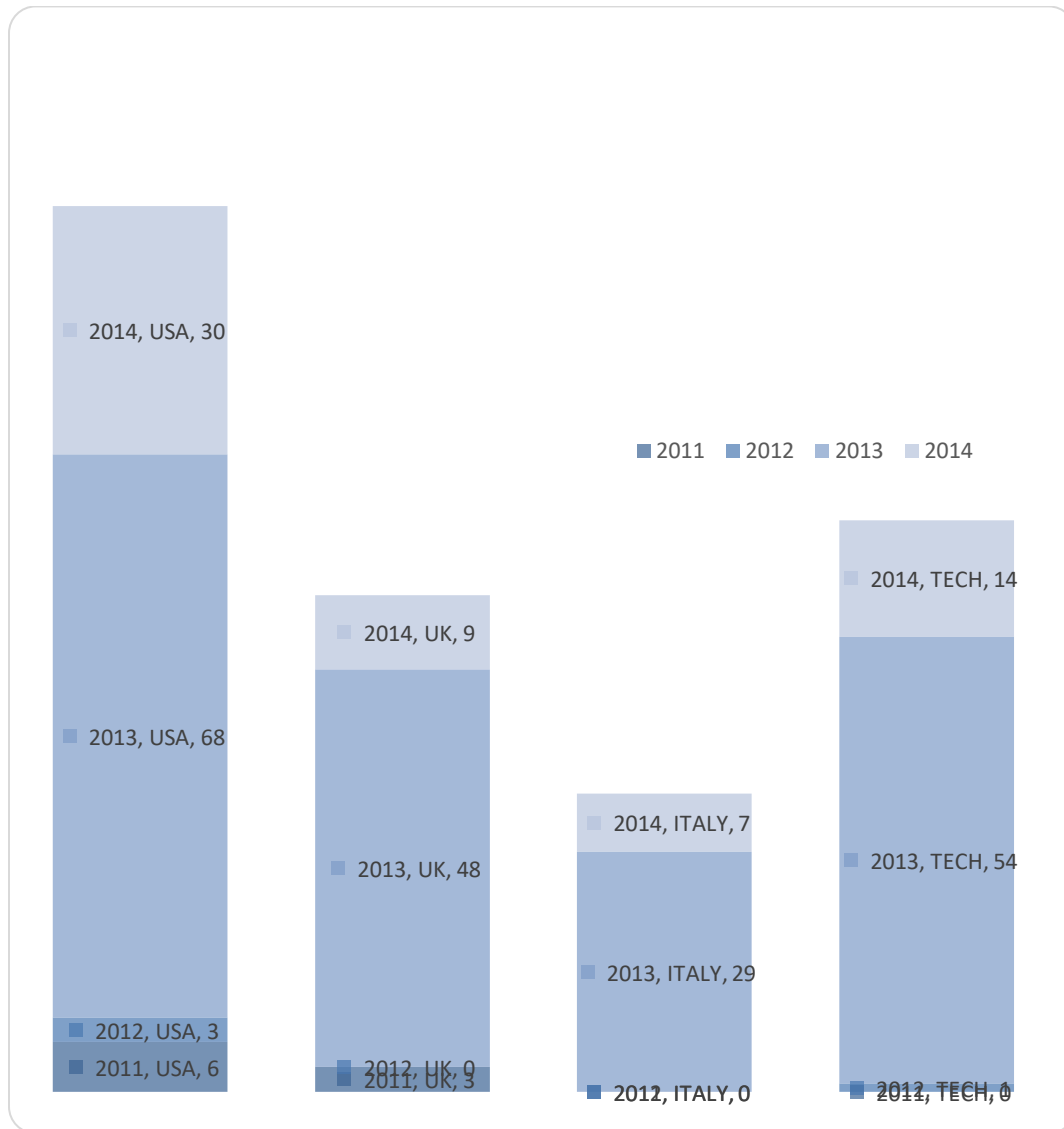
Figure 2. Chronological distribution by country or publication type.

Article Content: Issues and Wording

As a second layer of analysis of the articles sampled, the research focused on the issues covered in the stories. First, it was noted whether Aaron Swartz was the primary subject of the articles or whether he was mentioned while discussing other connected issues and topics. Looking at the whole sample, 101 articles (of 272) directly discussed Aaron Swartz, his work, life, or death. The remaining stories mentioned

Swartz while dealing with other subjects or individuals. In this regard, 51% of all the Italian articles dealt directly with Swartz, 43% of the UK stories, 31% of the U.S. stories, and 31% of the technology publications. The percentage of articles that did not have Aaron Swartz as the main topic were higher among newspapers that published more stories in general, such as *The Verge*, *The New York Times*, *The Washington Post,* and *The Guardian*, showing a broader interest toward hacking, activism, copyright, and Web issues.

Further analysis concentrated on the application of a thematic category to each published story. Categories were applied both to articles directly related to Aaron Swartz and to those that only mentioned him secondarily. In the latter case, the attribution was decided according to the way Aaron Swartz was included in the discussion. The most frequently applied category in the whole sample was *Activism* (64 articles, 22% of the total), followed by *Death* (46 articles, 16%), *Legal* (45 articles, 15%), *Entertainment* (42 stories, 14%), *Trial* (40 stories, 13%), *Engineering* (29 stories, 10%), *Legacy* (26 stories, 9%), and *Open access* (three stories, 1%) (see Figure 3).
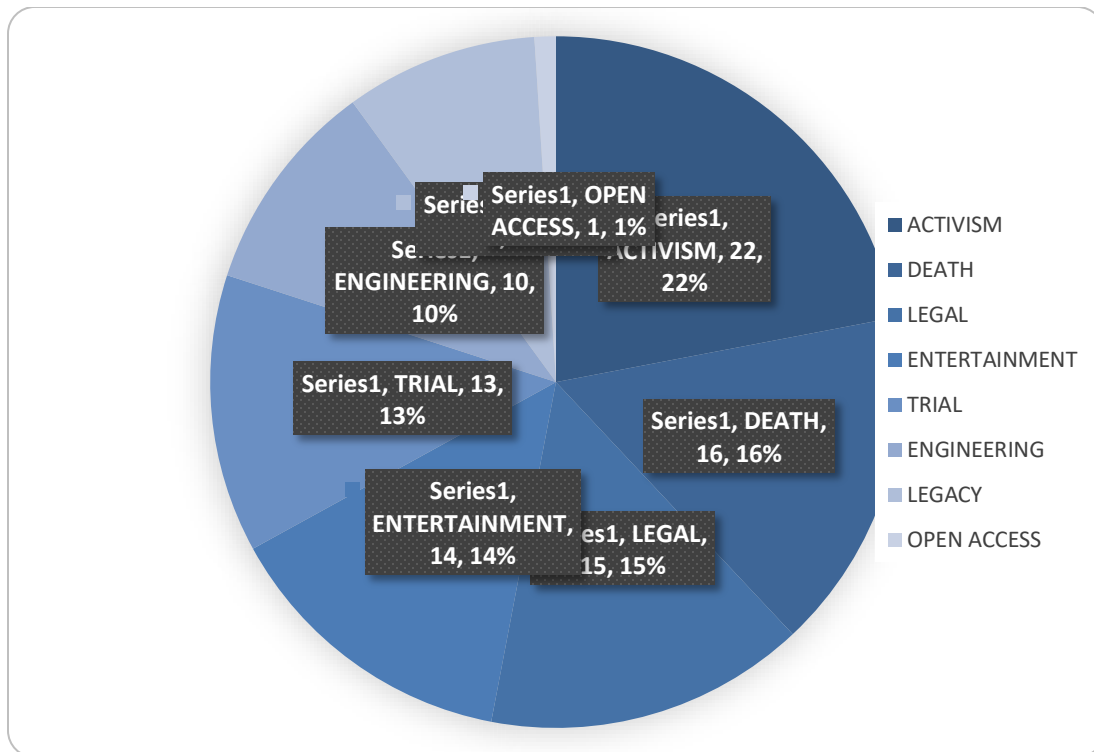

Figure 3. Article thematic distribution.

When it comes to national peculiarities, Italy and UK showed a majority of stories published in the *Activism* category, while U.S. outlets published the same number of articles (24) in both the *Activism* and *Entertainment* categories. Articles in the *Entertainment* category were generally more numerous in 2014, following the release of *The Internet's Own Boy,* the Aaron Swartz documentary, which was covered

by the selected media with large interest. Technology publications, instead, have published more extensively in the *Legal* category. For instance, there was wide coverage of the discussion of the implications of the Computer Fraud and Abuse Act (CFAA) in the Swartz case, including the possible reform of the CFAA legislation and the "Aaron's Law" proposal (S.1030, Aaron's Law Act of 2015). According to the results gathered for this research, the majority of the analyzed articles referred to and portrayed Aaron Swartz with increased focus on his activist initiatives rather than for his computer skills and work as coder and hacker. Moreover, it is worth noting that the second most applied category was *Death*, a result that is again in line with the fact that most of the stories were published in 2013 and the consequent "media frenzy" (Sutter, 2001) that followed.

As a third level of analysis, this article examines the words and lexical choices journalists used to define Aaron Swartz while mentioning him in the stories. In this case, only words used by the articles' authors have been counted and not those coming from quoted sources. This decision was made to analyze the newspapers' voices while writing about Aaron Swartz and to have a clearer idea of the adopted framing strategies. To reduce complexity, words were identified and grouped following this criteria: terms like *digital activist* and *Internet activist*, for instance, were both counted as "activist"; *computer programmer* and *Web programmer* as "programmer"; and *Reddit co-founder* and *Reddit creator* as "Reddit." Moreover, the number of articles featuring a specific word was considered, and not the actual number of times a word was used.

In the case of the Italian press the most frequently used word was *genio* (Italian for "genius"; 14 articles featured it), followed by *attivista* (Italian for "activist"; 11 instances), and *hacker* (10 cases). In the UK press, *activist* was the most frequent term (38 stories), followed by terms defining Swartz's involvement in Reddit (16 instances) and in RSS (10 cases). When it comes to the U.S. newspapers, a clear majority for *activist* was noted (58 cases), followed by *programmer* (27 cases), and terms referring to Swartz's role in RSS (22 instances). For the technology publications, the most frequently encountered term was also *activist* (22 cases), followed by terms connected with Reddit (10 instances) and *hacktivist, hacker*, and *programmer* (all with six cases each). The wording choices of the journalists also had an impact on the tone of the stories: the Italian press consequently had a higher number of positive stories (19 of 37 in total, and almost all—except eight—*La Repubblica* stories fell under this label). Only one negative article was visible in the Italian sample. UK and U.S. outlets, instead, had an overwhelming majority of neutral stories, while positive and negative stories were sporadic. For the technology publications, neutral articles also dominated, no negative stories were identified at all, and only six positive stories were found. It is interesting to note that both *The Verge* and *The Next Web* have published at least one story each referring to Aaron Swartz only by his first name. This result underlines a stronger cultural proximity and emphatic affiliation with the subject of the articles.

The tone of the articles in the national contexts is also consistent with the volume of articles published: the U.S. and tech publications that dedicate more comprehensive attention to Aaron Swartz, have covered his work and activities more extensively and consequently had a less concentrated coverage around his death. Elsewhere, in Italy and in the UK where there was less coverage and the span of topics and issues covered has also been smaller and more opinionated articles were identified. Italian newspapers gave almost no attention to Aaron Swartz before his death, but spiked their focus following

his suicide: In these scenarios, media tend to show the tendency to abandon their common tones and language and to adopt a more emphatic voice. In the context of celebrity studies, this phenomenon has been called "celebrity flashpoint" (Turner, Bonner, & Marshall, 2000, p. 3).

Quoted Sources

As a fifth layer of research, this content analysis considered the quoted sources in articles about Aaron Swartz. To have the broadest possible overview, both first-hand and second-hand sources were considered and counted, and both individuals and institutions were included. First, it is interesting to see how only one of the analyzed newspapers published an interview with Aaron Swartz in the time frame of this analysis. *The New York Times* published an interview on April 13, 2012, when Swartz (and the artist Taryn Simon) discussed involvement in the artistic projects "Seven on Seven." In the case of the U.S. press, the most frequently quoted source was Carmen Milagros Ortiz, the United States Attorney for the District of Massachusetts, who was directly involved in Swartz's legal case and appeared in nine stories. Moreover, Massachusetts Institute of Technology's President Rafael Reif had seven appearances, and scholar and Creative Commons founder Lawrence Lessig had six appearances. When it comes to UK news outlets, Lawrence Lessig was the most frequently quoted source (11 times), followed by Swartz's family (eight) and Carmen Milagros Ortiz (seven). The number of quoted sources in the Italian press was extremely limited; Carmen Milagros Ortiz and Lawrence Lessig were again the most visible individuals, with only four and three quotation instances, respectively.

Conversely, results for the tech news outlets differed: U.S. Congresswoman Zoe Lofgren was the most popular source and was quoted seven times. This is because Lofgren is among the proponents of the so-called Aaron's Law legislation, aimed at reforming the Computer Fraud and Abuse Act (CFAA) (U.S. House of Representatives, 2015). As discussed before, the majority of stories published by tech publications fell under the *Legal* category, a result reflecting their deep interest in the CFAA implications in the Swartz case. The tech publications also quoted the Swartz's family and the hacking collective Anonymous, both with six appearances each. All of the most frequently quoted sources are from the U.S., with the exception of the Anonymous group, which has no official nationality. This is again in line with the national journalistic relevance that was found when it comes to the U.S., and technology press in part. In addition, a general homogeneity of sources is visible across countries, and quoted individuals and institutions tend to be the same in all the countries and to be mentioned for the same statements. For instance, Lawrence Lessig's blog post "Prosecutor as bully" (Lessig, 2013b), published in the aftermath of Swartz's suicide, was frequently quoted across all of the news outlets. Again, only the technology outlets showed a difference in terms of sources, showing interest for different individuals or organizations. The ubiquity of U.S. sources among countries is a sign that the U.S. news outlets had probably set the agenda of the other news outlets.

Conclusion

This article aimed to analyze and compare how eight news outlets portrayed Aaron Swartz over a three-year time frame. This was undertaken by looking at national differences (U.S., UK, Italy) and cultural peculiarities through the analysis of traditional national news outlets and digital native technology-

oriented online publications. The results clearly show that, regardless of the countries of reference or the publication type, all analyzed news outlets provided quite similar coverage of Aaron Swartz, with some small yet decisive differences. As seen in all three countries, the dominant frame has been that of *activist,* and the overwhelming majority of articles were published in 2013, the year of Swartz's death. Despite the vast amount of activities Swartz was involved in during his life, the analyzed media, including those with a stronger affiliation with technology, did not provide substantial attention to Aaron Swartz before his death. This result is also confirmed by the figures for 2014 that suggest a lessening of attention paid to Aaron Swartz, who seemed to have found a place in the news coverage mainly because of the release of the documentary *The Internet's Own Boy*.

National peculiarities in the coverage of Aaron Swartz were clearly apparent, especially when it comes to the tone of the articles. As shown, Italian news outlets have favored a positively biased approach toward Swartz by publishing more positive commentary stories. A more neutral, "newsy" coverage of the issue was instead minor. English-language outlets, and especially those in the U.S., instead provided a wider variety of content, such as chronicles and analysis, and this is probably behind the publication of more neutral stories, as newsy articles have a tendency of being more neutral than op-eds or obituaries. Thus, when it comes to RQ1, results from this content analysis suggest a general homogeneity among news outlets in different countries, with recurring frames, themes, and editorial decisions, both in terms of the amount and content of the coverage provided to Aaron Swartz in the analyzed time frame.

Technology online outlets from the U.S. and Europe demonstrated a slightly different pattern, with increased focus on the legal backwash of the Swartz case and on the reform of the Computer Fraud and Abuse Act in particular. This can be considered a sign of a stronger affiliation with the sectorial issues of the subject, but the amount of articles provided show consistency only in the case of the U.S.-based *The Verge*. The fact that both *The Verge* and *The Next Web* have published at least one story referring to Aaron Swartz simply as "Aaron" is another sign of a stronger tie, although it is not decisive in establishing a strong difference from more traditional outlets. In addition, the source selection draws a difference from traditional news outlets. Hence, when it comes to RQ2, it is possible to say that digital native technology-focused online outlets provided different coverage of Aaron Swartz in the analyzed time frame. Although, results do not show a strong differentiation between traditional and technology online outlets, but rather a discrepancy in some nuances of the overall coverage. As for the volume of attention, the results of this analysis bring new evidence of how, when dealing with Internet cases or digital issues, news outlets tend to still push for national filters while selecting content, news, and frames (Hanitzsch et al., 2011).

Another interesting result arises from the number of stories in the whole sample ($N = 272$) that were directly focused on Aaron Swartz ($n = 101$), compared with the majority of stories that mentioned him while discussing other related topics. This leads to two different possible interpretations: it reinforces the argument that the attention on Aaron Swartz was generally small and nonsystemic or, alternatively, that Aaron Swartz was integral in a broader analysis of Internet phenomena, such as activism or digital dissidence, to begin with. Certainly, the fact that Aaron Swartz was frequently mentioned as a reference in articles dealing with broader issues, such as hacking, hacktivism, or surveillance, could be interpreted as a signal that his figure is already considered along the same lines as other figures such as Edward Snowden

or Julian Assange. This said, the results of this research do not give enough information to thoroughly analyze this point. Moreover, given the concentration of the largest amount of articles around Swartz's death, the author would argue that the analyzed news outlets only paid attention to Aaron Swartz when he died, neglecting coverage to his work in life.

When it comes to RQ2 and to quoted sources, instead, a general homogeneity is again clearly visible: news outlets tended to quote the same people and institutions (or even the same statements) across countries several times. Scholar Lawrence Lessig (third most frequently quoted individual in the U.S. press and most quoted in the UK newspapers), for instance, has been largely quoted for his statement following Aaron Swartz's death. Interviews were also limited. When it comes to the Italian press, the extremely limited number of quoted sources in the analyzed national newspapers can be considered as another consequence of the national reporting being widely composed of comments, op-eds, and obituaries, instead of newsy articles. Sources also marked the broader differentiation between traditional and technology online outlets: Results show clearly how *The Verge* and *The Next Web* made different choices in this sense, including quotes from the Anonymous collective, for instance, or reflecting a stronger attention to the CFAA reform issue, having Congresswoman Zoe Lofgren, who proposed a reform of that legislation, as the most quoted individual.

Referring to Downs (1972) notion of the issue-attention cycle, it is possible to conclude that while covering Aaron Swartz, analyzed media were mainly active during the alarmed discovery and euphoric enthusiasm stage. This is evidenced by the greater interest in the subject only during the tensest phase of the Swartz case in 2013 and on the occasion of his death. Conversely, the preproblem stage was not covered, as confirmed by the extremely limited number of articles published in both 2011 and 2012. As for realizing the cost of significant progress stage, it was partially covered by the technology online outlets that provided significant attention around the Computer Fraud and Abuse Act reform. The second most active year in the time frame with respect to the number of articles published was 2014, and all analyzed outlets showed a gradual decline of intense public interest after the 2013 media frenzy (Sutter, 2001).

The main limitations of this article are the limited number of newspapers involved, the presence of only three countries and two languages, and the focus on frames as the only elements of article content. Additional research is needed to understand how media performed during the postproblem stage (Downs, 1972) in the years after Swartz's death. Furthermore, it would be interesting to have two different considerations in future research: the framing of digital activism and cases of radical transparency at large, like the WikiLeaks or the Snowden cases, and comparative research on how individuals such as Chelsea Manning, Edward Snowden, and Aaron Swartz have been portrayed. This could provide interesting insights in understanding the role of media and frames in the delivery of these news subjects to the public.

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