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Mark ZuckerBerg: Hero of the Internet or Villain of CyBerspace?

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MARK ZUCKERBERG: HERO OF THE INTERNET OR VILLAIN OF CYBERSPACE?

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Have you ever wondered why the most “correct” advertisement is always shown to you at the right time when browsing Facebook? For example, if you begin to show an online interest in coffee, you will likely open Facebook and be greeted with coffee ads. Apparently, the coffee business and Facebook adopt an efficient combinatorial strategy for finding customers. But that also prompts a privacy question for the Facebook user. Are Facebook users’ behaviors and activities being monitored? Would such a practice be ethical?

In 2010, the Wall Street Journal posted an article, by Emily Steel and Jessica E. Vascellaro, that addressed the privacy loophole in many social-networking sites. The inconsistency of the public statement and actual practice was pointed out: Facebook, and other social-networking sites, had been “sending data to advertising companies” and

consumers' names and other private information could be reached without consent. To authenticate their claims, the authors of that article identified the specific flaw related to referrer URLs, which basically meant that if a user clicked on a certain link, a piece of information would be sent to the site. That would not be a problem if it were Google, but Facebook contains far more private and sensitive information than Google. The problem was quickly identified by Facebook as well, and an announcement had been made to assure the users that Facebook was remedying the problem. It is reasonable to believe that, after six years, the problem should have been dealt with properly.

Back to the question raised above: Are users monitored? In terms of technical practice, every page a user visited, every word a user posted, must be stored in a certain place amidst the huge Facebook server. Therefore, the answer may be yes. However, what Facebook claims to do and has to do is make sure that information about names, addresses, and phone numbers would not be accessed by anyone without the consent from users.

Nonetheless, in 2013, a news story by Alexis Keinman posted on the Huffington Post revealed that a Facebook bug made the private contact information, including email addresses and phone numbers of around six million users, accessible to certain Facebook users. Users who downloaded their Facebook account histories were able to access their friends' contact information which had never been intended to be shared in public. Although Facebook assured their users that the bug had been fixed, within 24 hours and according to Facebook's official blog, "We currently have no evidence that this bug has been exploited maliciously and we have not received complaints from users or seen anomalous behavior on the tool or site to suggest wrongdoing." The problem was relatively serious in terms of the number of users affected.

Cybersecurity issues like those described above have proliferated along with the development of the social-networking landscape. The closer people are, the more transparent and accessible their information is to others, either intentionally or unintentionally. As the leader of this newborn field, Facebook has tremendous responsibilities to shape the macro picture of social networking and to define the boundary between transparency and connectivity.

However, before discussing the future of social networking, it is necessary to shine a spotlight on the human face standing behind this Facebook empire: Mark

Zuckerberg. As a prodigy who dropped out of Harvard University, Zuckerberg invented and developed Facebook in his dorm room and then established a “nation” whose population matches and even exceeds the populations of China and India. Consequently, Zuckerberg is usually worshipped by millennials as one of their intellectual, cultural, and social heroes. This chapter’s primary purpose is to illuminate the heroic journey of Mark Zuckerberg, focusing on both his heroic contributions to the world’s popular culture as well as the controversies that suggest his potential villainy.

THE HEROIC JOURNEY OF MARK ZUCKERBERG

Mark Zuckerberg was born in 1984 in White Plains, New York. As the son of dentist Edward Zuckerberg and psychiatrist Karen Kempner, Zuckerberg started his legendary life in a comfortable and well-educated family setting. He developed an interest in computers at an early age, writing high-level software as early as middle school. Zuckerberg’s father, by teaching his son Atari BASIC Programming, played the role of the hero’s mentor in the context of Joseph Campbell’s (1949) model of the hero monomyth. “The role of the mentor is to help the hero discover, or recover, the missing quality that is needed to overcome challenges and obstacles on the journey” (Allison & Smith, 2015). With the knowledge Mark Zuckerberg had, he built a software program “ZuckNet” to allow communication between computers at his father’s dental office and those at home. In order to keep up the interest of Mark Zuckerberg in computers and programming, his father later hired a software developer named David Newman to tutor Mark Zuckerberg privately. This second mentor visited Zuckerberg’s house once a week to teach Mark, and immediately discovered Mark’s talent by calling him a “prodigy”, adding that it was “tough to stay ahead of him”. At that time, when the friends came over to the house to play with Mark, he was able to easily create computer games based on his friends’ artwork. These two important mentors armed Mark Zuckerberg with the knowledge and skills he needed, and they led Mark down the best pathway toward heroism.

Mark Zuckerberg also demonstrated his talents in many other ways. He took a graduate course in computer science at Mercy College near his home while still in high school. Later, when he studied at Phillips Exeter Academy, he displayed his talent in fencing by becoming the captain of the school’s team. He excelled in literature as well, earning a classics diploma. According to a close friend

of Mark Zuckerberg, Napster co-founder Sean Parker, Zuckerberg once quoted lines from the Roman epic poem *Aeneid*, by Virgil, during a Facebook product conference. Fortunately, Zuckerberg didn't devote all his passion to literature, maintaining his strongest interest in computers. He built a music player called the Synapse Media Player which was capable of learning users' listening habits. A few companies including Microsoft expressed interest in both the music player software and him, yet Zuckerberg didn't show any interest in Microsoft.

Zuckerberg enrolled at Harvard University with the reputation as a programming prodigy. In his sophomore year, he wrote a program called CourseMatch, which facilitated students making course selection decision based on the selections made by other students. After that, Zuckerberg designed a program called Facemash, according to his roommate Arie Hasit, for fun. In the site, two pictures of two different people of the same gender were posted for the visitor to choose who was more attractive, and an overall ranking based on an aggregation of all votes was established. The site was so overwhelmingly popular that it only lasted for a weekend. It was shut down by the school administration due to high user volume, which placed unusual pressure on Harvard's network switches thus preventing students from accessing the internet. Furthermore, the school considered the behavior of posting photos without permission as inappropriate, compelling Zuckerberg to apologize publicly. With this experience, Zuckerberg was able to gain an initial understanding of the dynamics of social networking and people's passion for it. He also tested the limits of privacy and data sharing, thus foreshadowing much to come. Zuckerberg learned through from experience that a perfect social-networking site should connect people but people themselves should decide what information to put on the site.

With the buzz of Facemash, three students, Divya Narendra and twins Cameron and Tyler Winklevoss, asked for help from Zuckerberg to build a social network called HarverdConnection.com, which was intended to collect information from students at Harvard with the goal of creating a dating site for them. At first, Zuckerberg agreed but he later dropped that project and instead decided to work on his own site with his friends Dustin Moskovitz, Chris Hughes, and Eduardo Saverin. This decision led to a lawsuit against Zuckerberg, but that will be discussed later in this chapter. Zuckerberg's own site, first called "The Facebook", allowed users to create their own profiles, upload photos, and communicate with other users. Avoiding the mistake he made with Facemash, the new site

started so successfully that Zuckerberg decided to drop out of college to devote himself to Facebook full time.

Zuckerberg recalled in January 2014, “I remember really vividly, you know, having pizza with my friends a day or two after I opened up the first version of Facebook, and at the time I thought, ‘You know, someone needs to build a service like this for the world.’ But I just never thought that we’d be the ones to help do it. And I think a lot of what it comes down to is we just cared more.” It was at this point in time that Zuckerberg showed that he was developing his own heroic purpose. According to Bronk and Riches (2017), “a purpose in life represents a stable and generalized intention to accomplish something that is at once personally meaningful and at the same time leads to productive engagement with some aspect of the world beyond the self.” One component of their framework perfectly suits Zuckerberg, and that is the idea of “purpose-guided” heroism. With his experience creating Facebook, Zuckerberg introduced the meaning of a “social network” to the world, and gradually he would learn that his social networking gifts represented his destiny to benefit the world. While pursuing his purpose in life, he became a hero.

By the end of 2004, Facebook had roughly one million users. In 2005, the venture capital firm Accel Partners invested over twelve million dollars into Zuckerberg’s network, which had been open only to ivy league students. After Accel’s investment, the number of users expanded to five million by the end of 2005. This increase was accomplished by granting Facebook access to other colleges, high schools, and international schools. Although the site had drawn much attention from other large companies, Zuckerberg and his friends turned down many lucrative offers to buy their company. In 2007, Zuckerberg explained his reasoning: “It’s not because of the amount of money. For me and my colleagues, the most important thing is that we create an open information flow for people.”

According to Dik, Shimizu, and O’Connor (2017), there are three dominant work orientations in the United States: job, career, and calling. Zuckerberg treated his work as the highest of the three, which is calling. “Those with a calling orientation are driven by the intrinsic value of their work, the meaning it provides in life, and the difference it makes in their communities” (Dik, Shimizu, & O’Connor, 2017). The definition of work as a calling overlaps considerably with the definition of heroism proposed by Franco and Zimbardo (2006), which

contains four features of a heroic act: it must be engaged in voluntarily; it must involve physical risk or potential sacrifice; it must be conducted in the service of other people or the community as a whole; and it must be without secondary, extrinsic gain anticipated at the time of the act. These characteristics confirmed that Zuckerberg was on the right track toward heroism.

During the rise of Facebook, Zuckerberg never placed financial benefit at the top of the pyramid. Based on his explanation, at the time when Facebook reached five hundred million users, the average percentage of profit that advertisers gained on their pages was about ten percent in contrast to twenty percent like other websites. "We make enough money...we are growing at the rate we want to," Zuckerberg said, expressing his willingness to make sacrifices to benefit others.

According to Campbell's (1949) hero monomyth, a hero always brings a great boon, or benefit to the world, during his or her return phase. An example of one such boon from Zuckerberg is found in Facebook's sponsorship of an activity called "hackathons", held every six to eight weeks. During a hackathon, participants would have one night to complete a productive and constructive hacking project. The company would provide music and food at the hackathons, creating a sense of community. Many staff members including Zuckerberg himself would attend such event from time to time. This event offered a great opportunity for software engineers to communicate, learn, and achieve professional and personal growth.

Zuckerberg and his wife Priscilla Chan have recently focused on philanthropical giving. The most famous gift was reported in 2010, when Zuckerberg donated 100 million dollars to Newark Public Schools, the public school system of Newark, New Jersey. Although a large amount of the donation was wasted due to the renegotiated teachers' contracts and other law related issues, Zuckerberg continued his philanthropy in many other ways. On December 9, 2010, he signed a promise called "The Giving Pledge" with Bill Gates and Warren Buffett so that at least half of their wealth would be donated to charity over the course many years. Later in 2013, Zuckerberg donated 18 million Facebook shares to Silicon Valley Community Foundation, which valued roughly a billion dollars. That donation put Zuckerberg and his wife at the top of the annual list of fifty most generous Americans, according to The Chronicle of Philanthropy. To welcome the birth of their daughter, Zuckerberg pledged in an open letter to her that they

would donate 99% of their Facebook shares, valued at forty-five billion dollars, to the Chan Zuckerberg Initiative, which was their new organization focusing on health and education. Recently, Zuckerberg and Chan announced the Chan Zuckerberg Initiative would invest at least three billion dollars into scientific research over the next decade to help “cure, prevent, and manage all diseases in our children’s lifetime.”

According to Allison and Goethals (2011, 2017), heroes tend to possess at least several and sometimes all of eight categories of traits: smart, strong, selfless, caring, charismatic, resilient, reliable, and inspiring. Zuckerberg would appear to have at least four of these characteristics. He is smart, selfless, charismatic, and inspiring. He is intellectually heroic because he was called prodigy at a very young age and had the brilliant insight to create Facebook and turn it into a stunning, worldwide success. He has devoted himself to philanthropy after his success with Facebook, thus demonstrating selflessness. Zuckerberg is charismatic, attracting legions of friends and partners who admire and follow him. His story has inspired millions, as he made the daring decision to drop out of Harvard to develop Facebook. Zuckerberg also gives rousing speeches and holds hackathons to help young programmers, thus revealing his magnetism and motivating qualities.

DEPICTIONS IN A HOLLYWOOD MOVIE

The Social Network was a movie based on the book, *The Accidental Billionaires*, by Ben Mezrich, which depicts Mark Zuckerberg’s life during the time when he invented Facebook. In the film, Mark Zuckerberg was described in a less than flattering way. From the narrative of the film, Zuckerberg blogged about Erica Albright in a derogatory way when she broke up with him. He is shown obtaining ideas about social networking from the Winklevoss twins and Divya Narendra, and then applying them to his own Facebook creation. He also seen ruthlessly cutting ties with his best friend Eduardo Saverin, reducing Saverin’s share of Facebook profits from 34% to 0.03%. Zuckerberg comes across in the film as selfish, obnoxious, narcissistic, and plagiaristic.

Zuckerberg strongly objected the film’s narrative and told a reporter at *The New Yorker* that many of the details in the film were inaccurate and fictional.

Zuckerberg pointed out many factual errors. For example, he began dating Priscilla Chan in 2003, the time at which the movie starts, in contrast to being dumped by his ex-girlfriend according to the movie. Also contrary to the movie, he didn't have any interest joining the final club, either. From Zuckerberg's perspective, the film took tremendously inappropriate liberties with the truth. Interestingly, however, Zuckerberg pointed out that "every single shirt and fleece that I had in that movie is actually a shirt or fleece that I own."

The film's screenwriter Aaron Sorkin told *New York* magazine, "I don't want my fidelity to be the truth; I want it to be storytelling", adding, "What is the big deal about accuracy purely for accuracy's sake, and can we not have the true be the enemy of the good?" Upon winning the Golden Globe award for Best Picture on January 16, 2011, producer Scott Rudin thanked Facebook and Zuckerberg "for his willingness to allow us to use his life and work as a metaphor through which to tell a story about communication and the way we relate to each other." Sorkin, who won for Best Screenplay, retracted some of the impressions given in his script: "I wanted to say to Mark Zuckerberg tonight, if you're watching, Rooney Mara's character makes a prediction at the beginning of the movie. She was wrong. You turned out to be a great entrepreneur, a visionary, and an incredible altruist."

In conclusion, although the specific details about how Facebook was developed from the dorm room at Harvard remain mystery, it is inappropriate to take the film as evidence of Mark Zuckerberg's villainy. Nonetheless, the inspiration for the film does have more than a kernel of truth and thus provides some insight about the potential dark side of Mark Zuckerberg. We next address these potentially villainous elements of Zuckerberg's character.

THE DARK SIDE OF MARK ZUCKERBERG

As mentioned above, a controversial lawsuit that stained Zuckerberg's career involved his conflict with the Winklevoss twins and Divya Narendra. Earlier we described the general picture of the whole event, but the details of how Zuckerberg and Winklevoss twins communicated have not been fully revealed yet. The story started in December of 2002, when the twins and Narendra set out to create a unique social networking website to better connect students in

Harvard as well as other universities. In the following year, 2003, they successively recruited Sanjay Mavinkurve and Victor Gao for the purpose of programming, but for reasons unknown they abandoned the project. After almost a year, they finally brought in Zuckerberg in response to a referral of Victor Gao in November of 2003.

At this point of time, a large amount of code for the networking site had been completed. The coding included: front-end pages, the registration system, a database, back-end coding, and more. In the very first email that Narendra sent to Zuckerberg, the HarvardConnection team said, "We're very deep into developing a site which we would like you to be a part of and ... which we know will make some waves on campus." Of course, as we all know, Zuckerberg accepted this offer. Near the end of that November, the men held their first meeting in the dining hall of Harvard's Kirkland House. While the Winklevoss brothers and Narendra explained the general idea of the HarvardConnection, the plan was to finish the site before everyone else and then enjoy a successful launch. Zuckerberg allegedly became a partner of the HarvardConnection team and he was given the "server location and password for the unfinished HarvardConnection site so that Zuckerberg could begin his work on the website."

At first, Zuckerberg claimed that the completion of the project was not difficult at all. In the email Zuckerberg sent to Cameron Winklevoss on November 30, 2003, he wrote: "I read over all the stuff you sent and it seems like it shouldn't take too long to implement, so we can talk about that after I get all the basic functionality up tomorrow night." The next day, Zuckerberg sent a follow-up email saying, "I put together one of the two registration pages so I have everything working on my system now. I'll keep you posted as I patch stuff up and it starts to become completely functional."

Although it seemed the project had been going well under Zuckerberg's control, the themes of his emails changed during December. On December 4th, Zuckerberg wrote, "Sorry I was unreachable tonight. I just got about three of your missed calls. I was working on a problem set." The following emails in December of 2003 and January of 2004, stated the same fact that he was too busy to work on the website. The email on December 10th: "The week has been pretty busy thus far, so I haven't gotten a chance to do much work on the site or even think about it really, so I think it's probably best to postpone meeting until we have more to discuss. I'm also really busy tomorrow so I don't think I'd be able

to meet then anyway.” After that, he again sent the team an email saying, “Sorry I have not been reachable for the past few days. I’ve basically been in the lab the whole time working on a CS problem set which I’m still not finished with.” It is noteworthy that on December 17th, the Winklevoss brothers and Narendra finally got a chance to meet with Zuckerberg. Zuckerberg showed them a few lines of code and this was the only time they saw his work.

In early January of 2004, Zuckerberg in an email said that he was “completely swamped with work that week” and on January 8th he claimed that he was willing to discuss the site with the team on January 13th. However, on January 11th, before the scheduled meeting on the 13th, Zuckerberg registered the domain name thefacebook.com. On the next day, Zuckerberg emailed his friend as well as his Facebook partner and investor, Saverin, claiming their own social networking website thefacebook.com was near its completion. They needed a marketing strategy. On January 14th, Zuckerberg met with the other team without mentioning his own social networking site; instead he reported his progress on the HarvardConnection.

On February 4th, Zuckerberg launched thefacebook.com. Two days later, the Winklevoss twins and Narendra learned of Facebook for the first time from reading the Harvard student newspaper The Harvard Crimson. According to the former programmer of the team, Gao, who checked Zuckerberg’s code for HarvardConnection afterward, Zuckerberg left the program incomplete and dysfunctional. On February 10th, Zuckerberg received a cease and desist letter, but he didn’t respond at all. The team later asked for help from the administration of Harvard University to see if Zuckerberg’s activity could be viewed as a violation of the honor code. However, both the administration board and university president Larry Summers thought the matter was out of the university’s jurisdiction. Therefore, this case was finally brought to court.

Later in 2004, the Winklevoss twins and Narendra filed a lawsuit against Mark Zuckerberg for stealing their source code and their idea to create thefacebook.com. As a result, a settlement was reached, and it turned out to be 1.2 million shares of Facebook stock.

Obviously, it is difficult to conclude that Zuckerberg created his new Facebook website independently from HarvardConnection. The time interval between his emails suggested that the idea might have indeed come from the Winklevoss

brothers. After all, the process of creating Facebook happened exactly during the period from the time when Zuckerberg orally joined the HarvardConnection to the time when he was found leaving all the work behind. Although there were many similar websites which provided online communications before both HarvardConnection and Facebook, and the idea was never the most important component in the Internet industry, a rational conclusion drawn from this case would be that Zuckerberg would not have created Facebook that quickly without “working” with the HarvardConnection team.

Once we absorb that fact, any controversy about whether Mark Zuckerberg deserves his status as hero begins to reveal itself more clearly. It is possible that without ideas received from the Winklevoss brothers and their friend Narendra, Mark Zuckerberg would never have been able to develop his Facebook idea and unleash it like a virus around the world. Meanwhile, Zuckerberg’s prescience and remarkable intellectual ability have been widely recognized as the key factors of his success. The HarvardConnection incident is a potential blemish that hints at the villainous side of Zuckerberg’s character. It will likely forever haunt him.

Another controversial issue surrounding Facebook is its role in dividing the world in contrast to its stated goal of connecting people. Allison and Smith (2015) have gone so far as to claim explicitly that heroes bring people together while villains create divisions among people. What exactly does Facebook do? Does it deliver on its promise to connect people, or does it contribute to human loneliness and separation? Facebook and other social media have been criticized for promoting a massive “disconnect” among people, as they cultivate the illusion of human connection when in fact a genuine connection is sadly missing. Consider people’s obsession with their phones when they are surrounded by real people with whom they can actually interact. The success of Facebook and Zuckerberg, along with other social media, has been identified by many psychologists as adversely affecting people’s mental and physical health (Doward, 2017).

According to a research conducted by Lin et al. (2016), a variety of social media platforms, including Facebook, were found to be significantly associated with increased depression among American young adults. As the number of active users of Facebook has increased, so has the number of people who have experienced psychological distress. This trend is particularly disturbing when one

considers how the percentage of Facebook users has increased so dramatically over the past decade. Users of Facebook became especially distressed in 2016 after learning that Facebook had been manipulated by fake news put out by the Russian government which contributed to the election of Donald Trump as President.

Intellectual heroes are sometimes criticized for their innovations bringing about as much (or more) harm than good. Consider the case of J. Robert Oppenheimer, who successfully led his Manhattan Project team in creating the atomic bomb which ended the second world war. He is forever known as the man who devised the most dangerous and destructive weapon the world has ever seen. Therefore, for many people at least, he is known as one of the greatest physicists in the history rather than a great hero.

Because the popularity of Facebook has reduced the number of physical interactions among people, and the absence of these physical interactions has led to psychological problems, Zuckerberg's legacy inevitably swings to a negative side in terms of his effects on society. On the other hand, Zuckerberg grew up as a prodigy in the field of computer programming, so it is reasonable to assume that he worshiped the most efficient way of communication regardless of whether that way is deemed humanitarian or not. Certainly, according to the theory of moral relativism, this flaw could be considered as either a strike against his heroism or the defining characteristic of his villainy, depending on one's subjective definition of good and evil.

HOW MARK ZUCKERBERG GAVE US MEANING AND PURPOSE

Although there are flaws in Zuckerberg, perhaps even a villainous side of him, the reason why people worship heroes is not because of their occasional flaws, but because of their merits and lasting contributions. To many people, Zuckerberg's life is more the stuff of legends more than it is an inspiring story. Born in a wealthy family with an inherently high intelligence, and benefiting from full support from his family, Zuckerberg seemed to enjoy all the conditions he needed to succeed. As mentioned earlier, Zuckerberg is a purpose-guided hero, albeit an indirect one. At the outset of his journey, it was likely not his goal to bring the world closer together through technology. Technology was his interest and his strength, and he developed it into his purpose. After that, he

found the meaning and purpose in his career. These processes made him a hero as he is now.

The millennials are facing their most important decisions right now. Some of us are preparing to leave school and to begin our careers; some have already begun the career phase. It is easy to get lost. We are confused by the conflict between our the beauty of our dreams and the starkness of reality. At this point in time, Zuckerberg has become an exceptionally powerful role model for the millennial generation. As a heroic figure, he keeps inspiring us to find our own purpose because he has already proven how to become a hero for oneself and for others through his own story.

COMPARISONS TO STEVE JOBS

Zuckerberg's innovative abilities often draw comparisons to those of other technological legends such as Bill Gates and Steve Jobs. Let us now consider the mixed legacy of Steve Jobs and how Zuckerberg might learn from Jobs' life and legacy. In 2011, the passing of Steve Jobs, the visionary co-founder of Apple computers, prompted a strong emotional outpouring from people across the globe. The two most prevalent emotions were typical of those seen whenever heroes perish: grief and appreciation. Jobs forever changed the way people work and play. He helped create menu-driven computing, powerful operating systems, and many of the devices and applications we all now take for granted, including the iPhone, the iPad, the iBook, the iMac, and iTunes. Jobs' products were all sleek, smooth, and stylish.

Steve Jobs had great innovative judgment, and he trusted it. He didn't run his ideas by focus groups or conduct polls to discern what his computing customers wanted. His philosophy was that people only knew what they wanted when they were shown something new, interesting, and of value. Jobs trusted his gut instincts. And his track record showed that those instincts were usually right. In this way Steve Jobs and Mark Zuckerberg have much in common.

Like Zuckerberg, Jobs was known for anticipating trends rather than reacting to them. Jobs enjoyed borrowing a quote from hockey great Wayne Gretzky, who once said, "I skate to where the puck is going to be, not where it has been." As with many heroes, Jobs had to overcome setbacks. He was fired from Apple at the

age of 30. Jobs turned this incident into a triumph by establishing the film animation company Pixar, which enjoyed great success. It made him certain that he still loved his creative work at Apple and needed to continue pursuing creative computer activity in the future. He made his triumphant return to Apple about a dozen years later.

Jobs' biggest setback, and ultimately the one that killed him, was pancreatic cancer. He bravely battled the disease for six years before succumbing to it. Perhaps ironically, it was the concept of death itself that propelled Jobs to reach his creative heights. "If today were the last day of my life, would I want to do what I am about to do today?" he asked. "Whenever the answer has been 'No' for too many days in a row, I know I need to change something. Remembering that I'll be dead soon is the most important tool I've ever encountered to help me make the big choices in life."

Both Steve Jobs and Mark Zuckerberg illustrate nicely how our greatest heroes are also great leaders. They were both clearly unsurpassed heroic leaders in computer technology and in business. As psychologists, we are struck by the many profound ways that both Zuckerberg and Jobs have shaped the way we think, feel, and behave. Friend and rival Bill Gates himself has said that it was "an insanely great honor" to have known Steve Jobs. Revolutionary heroes sew the seeds for future heroes. It is highly likely that Mark Zuckerberg, inspired by Jobs' legacy, has carried the mantle of Jobs' pioneering spirit. In all likelihood, Facebook could never have happened without creative legends such as Bill Gates and Steve Jobs.

SUMMARY AND CONCLUSION

In summary, Mark Zuckerberg apparently fits the figure of an intellectual hero. He established his Facebook empire using his knowledge and his talents -- and also perhaps using ideas "borrowed" from others. Although there may be debates about the origins of his development of the idea of Facebook, and although he may receive blame for reducing real face-to-face interactions among people, his technological and business achievements have been unprecedented. In the final analysis, one cannot help emphasizing one key piece of information about Zuckerberg when evaluating his heroic status. This key ingredient to his heroism is the tremendous amount of money he

has given to charity. He has donated over a billion dollars of his own money, and most of his Facebook shares, to good charitable causes. If selflessness is the ultimate defining characteristic of heroism, Zuckerberg certainly fits the bill.

Another question that remains to be answered is Zuckerberg's final legacy given Facebook's improprieties with regard to maintaining users' privacy and enabling Russian interference during the 2016 Presidential election. One senses that Zuckerberg is highly motivated to make a positive mark on society, and yet Facebook's misuse of its power looms as a dark cloud over Zuckerberg's eventual status as hero or villain.

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