

Growing Up Digital: Control and the Pieces of a Digital Life

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Entanglement, Persistence, and Growing Up Digital

When young people speak about digital media, they generally speak about it as something they use, a tool called upon to do a general or specific task or tasks. They show an awareness of digital media's promise, its pervasiveness, even its potential misuse by themselves and others. They use the medium. It may not be perfect, but almost without fail they externalize it—it is apart from them, different, exogenous. It may change what they can do, how they can do it, even how they live, but it does not change them as such (though it may help them to change themselves).

There is little, if any, explicit recognition among young people that digital media may not only be used by them, but in fact, may use them. That is, when young people become the subject (or object, if you will) of digital media, they are used by it; when a digital media artifact—a digital media file of any type, for example video, audio, still image, text—that features them is created, part of them becomes entangled with the digital media and forms the substance of it. Yet, children (and many adults) tend not to recognize this, preferring to retain the familiar conception of using a tool to achieve an end and then casting that tool aside without further thought. Even where it is considered in greater detail by scholars, where changes in the person who uses (or views, in some cases) digital media are expertly analyzed, almost no attention is paid to how being enmeshed in digital media actually affects people.¹ That being "in" the media can change people has always been true of media and those featured in media artifacts, but changes in how we create media and what we can then do with those media are changing the importance of these observations for our youth (and adults).

For example, now forty years old, I have relatively few pictures of myself from when I was very young, and those that I do have are either at my father's house or in boxes in my garage where they are difficult to find. There are a few videos of me here and there, made by parents first using an eight millimeter film camera and then later using a VHS video recorder. If anyone wanted to find a photograph of me, either online or off, the ones they would find would most likely be modern ones, after I turned thirty, when the internet, and especially the World Wide Web, began growing and flourishing. Older pictures or videos, especially those that might have the capacity to today embarrass me in some way, are probably outside the ability of anyone other than the most dedicated detectives to procure. This is true of many people who grew up in the "analog world" where photographs were things you held in your hand after getting them back from the photo lab, and for whom home videos were made up of the complete video footage shot by a person with a bulky video camera.

In contrast to this story of the “ancient art of analog media,” I have a young daughter who, as of this writing, is nineteen months old. My wife and I have taken more than 1,500 digital pictures of her in the year and a half since she was born, and over ten hours of “raw” digital video. She will be able to look back at her life over time, from moments after her birth until she has her own children, and find media files made by us, by her, and by others. These media files will be the pieces of her digital life, created as she lives as a digital person. Her friends will take and share photographs and video of her, and she will do the same with them. Early performances in school, athletic events, dressing up for Carnival or Halloween, sleigh riding in the snow, all will be part of various digital media files. In the end analysis, the digital record of her life may not be complete, but it will be extensive. She will be able to search this digital record, find specific digital media files, and share them with others.

Here, in this latter story, the story of children growing up today, my daughter will still grow up in a variety of ways, as has always been the case. But a new way of growing up has been added in recent years, due primarily to the technological and cultural changes that have brought us into the information age. As have others in the past, she will grow up female, white, and probably tall (though the jury will be out some number of years before this latter element is decided for certain). But, importantly, she will also grow up digital. Parts of herself, and her life, will be embedded into the digital media artifacts that are created using digital media devices throughout her life, used by herself and by others. This growing up digital is distinct in crucial ways from growing up analog, as those of us now grown experienced growing up. Some of these differences are teased out above in the nature of a world where people’s memories are extensive and accessible to them. The differences, however, between the analog and the digital go further, and the panacea of life’s memories easily and quickly available is juxtaposed against the negative potential of digital media persisting over longer time frames than was generally true for analog media. Where this persistence allows digital media artifacts to reappear at inopportune or unwanted moments, they are pernicious in nature, being negative and unwanted. Identifying that negative potential and the effects that the persistence of digital media artifacts may have on the lives and futures of our children are the critical issues addressed in this chapter.

The negative possibilities, as is usually the case when technology meets society, are legion; we will, however, attempt to avoid the rhetoric and the hyperbole of doom, the urge to yell “Danger, Will Robinson!” when confronted with the new potential for persistence of digital media. We will instead focus on cognizable harms that are already beginning to be seen, both as to boys and as to girls,² and on the reasonably logical extensions of these developing situations. It is especially the persistence of the media—defined as its longevity of existence and the ease with which it can be located—that will form the basis of our discussion, and likewise that forms the basis for the claims here of potential negative consequences.

This persistence raises the question of control, for control could potentially obviate the negative consequences of that persistence. This places the question of control of digital artifacts after they are created and distributed within the core of our inquiry, and the perceptions and realities of control of and over digital artifacts will point our predictions in various directions. We will look at the question of control primarily through the lens of the law, a discipline that is often seen as playing an important—at times critical—role in control over the creation and distribution of the kinds of creative works with which we are concerned here.

While control as seen through the law’s lens will be the continuing theme we will address, we will also use it to consider why children are different from adults when it comes to

evaluating the potential for future and long-term harm from present actions. Law is likely to follow its established practices in this area, and we will touch upon areas such as juvenile offender law, contract law, and even the law relating to drinking alcohol and smoking cigarettes, while considering this question. In the end, we will recognize the challenge the persistence of digital media creates for our future, and we will think about the role that law might play in relation to minimizing the long-term effects of childhood decision making on young people's choices when it comes to creating and embedding themselves in digital media artifacts.

It thus seems we have two stories to tell, one of long-term access to life's memories and events, and one of the danger that flows from being embedded in digital media artifacts that persist across time that are identifiable and can be found across time. We are not describing here alternate futures of pure technological bliss opposed to "a sick future society glued together around communication technologies" (Angell, discussing William Gibson's "Neuromancer").³ This is a false dichotomy (as dichotomies often are). Our two stories are actually one and the same—they run together, not separately. But even this is not a story of inevitability, either of positive outcomes or negative ones, nor is it a tale of the ability of technology to determine outcomes to the exclusion of other realms of influence. Rather, it is a story told based on our evolving understanding of and experience with these new technologies, with an admonition that the negative is perhaps just as likely as the positive, and that the positive and negative will coexist, playing off of and into each other. We must consider the negative effects along with the positive when we think about technology and our youth. We must not forget the negative potential of digital media technologies while pursuing the positive benefits of their use. We must also consider what these technologies do to and with our children as well as what our children do to and with these technologies. In other words, where children are entangled in and become a part of digital media artifacts, we must consider the nature, importance, and future potential of that entanglement when thinking about the creation of and control over those artifacts. These contentions give us a great deal to think about as we walk the crossroads from the analog to the digital world, and the stories we will consider here will help us to see how and where we might end up based on choices we are making—or in some cases remaking—today and in the near future.

To help us to think more deeply about the interactions and interconnections of the negative and positive aspects of the lifelong creation of digital media artifacts—of growing up and living digital—this chapter will first lay out some scenarios that show the potential negative effects of the distribution of digital media featuring young people, stories that temper the story outlined above of memories preserved over a lifetime. We then turn to a consideration of why control matters, with a specific inquiry into why it matters for our children and how digital media have increased the importance of these questions, followed by looking at responsibility and autonomy through the eyes of the law, seeking to understand how the law views children in relation to these two areas. We then revisit control, this time specifically of digital media artifacts, and provide some modest suggestions for how we might actively engage with the questions at hand and provide some relief from the negative potential we identified earlier. We close with thoughts on digital media artifacts, growing up digital, and our children, with cautious optimism for the lives that will be lived digitally.

Some comments before we proceed further. The story told in this chapter is one of unintended and unexpected outcomes of technological progression and adoption throughout society. They are unintended because digital media were not developed so that digital media

artifacts could become perniciously persistent. In this vein, to the extent they have already begun to appear, these effects were largely unexpected. We can change at least that; that is, in a semantic sense if not more, no outcome that we are discussing can be entirely unexpected. Once we discuss it, it is at least theoretically possible. Changing these outcomes from unexpected to being within the realm of our predictive understanding is one small hope of this chapter.

Finally, the lessons learned here are not unique to the age group that features as the primary focus of its analysis—young people under the age of eighteen. Indeed, many of the lessons here are very relevant in today's world to adults, and especially to college-age young adults who are over eighteen but under twenty-two. Many adults formerly in married or committed relationships who created digital media of personal moments can also attest to the deviousness of their distribution after the relationship broke down; yet, the importance of these effects, and the nature of them, is qualitatively different when we consider children as opposed to adults, even young adults. In this chapter the choice is made to play up these differences and focus on the perniciousness of digital media as they relate to children or young people who are not yet adults (under the law). This choice, however, does not alter the fact that similar issues are raised for adults in confronting their digital selves. Whether the law should step in for adults, however, in the way it is argued that law might step in for our youth, is a question left for future consideration.

Control: Why We Care

It might seem easy to work from a position that assumes that digital media artifacts, as the expressions of their creators, are mere speech with limited ability to harm those who are their subjects. The following scenarios are designed to show that, in these circumstances, the creation of digital media artifacts has the potential to have significant and potentially severe negative effects on those whose digital selves are captured within the boundaries of those artifacts. The following scenarios are based in reality, many times backed by actual facts lived out by real people, people who were growing up digitally as well as physically.

We start here with four examples that show digital media's pernicious nature through its apparently spontaneous appearance, its potential for viral distribution, and its expectation of permanence. These examples are a mix of truth and fiction, but each is rooted not in hysteria, but in some reality of digital media. None is intended to be hyperbolic; they are all offered as examples of the reality that this chapter later takes up.

Everyone Does It: Why Not Me?

After an evening out with her boyfriend, Katie, then seventeen, goes back to his house with him, where he encourages her to take some sexy pictures. She says, "Why not; lots of couples do it, why not me?" Her boyfriend takes the pictures with her camera, but she leaves the camera with him. The relationship later ends, and after it does, the digital photographs are distributed: some are distributed electronically by her boyfriend, others are distributed by his friends both in physical form and electronically. The photographs are eventually sent to her parents, with her relationship with them being damaged, possibly beyond repair. Criminal charges are eventually filed against the ex-boyfriend and his friend, and convictions on charges of distributing child pornography are obtained against them. Yet, the photographs persist on the internet, and each time they are seen she is again subjected to feelings of disgrace and shame.

Just For You

The year is 2001, the internet bubble is bursting, but the internet itself is growing by leaps and bounds. In Madison, Wisconsin, a college boy—we'll call him Mark—makes and sends to his girlfriend a number of videos of him engaging in rather personal behavior. These often end with a kiss blown at the Web camera on which they were recorded. This couple's relationship subsequently ends, and the videos are distributed on the World Wide Web (how they come to be distributed is a question for which there is no certain answer, and which is not entirely required for our purposes). Internet rumors say the girlfriend was charged and convicted of distributing child pornography, but as Mark was over eighteen when the videos were made, this is likely to be myth. Other rumors have Mark changing his name, his university, and his life to avoid further detection. Again, this is unconfirmed, and there are no major media stories describing this scenario. It was lived out wholly on the Web. Yet, by running a correctly phrased search in a modern search engine today, you will still find these videos being distributed by numerous Web sites, not to speak of peer-to-peer users, and private or registration-only bulletin boards. Mark created these videos; he sent them to someone he loved, and now, they may "follow" him for the rest of his life. Each time one is viewed, a stranger is allowed to see his deepest secrets and watch him in private acts meant for only one other person; each time one is redistributed, he is injured once again. He wonders whether one day his children will find these digital media artifacts and ask him why he behaved this way at this time in his life.

Persistent Embarrassment

Jack is a respected teacher in a poor area of an urban city. He struggles to keep control over his class, which is made up of some of the most difficult learners in the school. They are constantly questioning him and spreading stories about him to the other kids at the school. One day, one of the students finds a picture of Jack from when he was younger, and brings it to class. It is a straightforward picture of Jack on a bicycle winning a race. Because he now knows what Jack looked like when he was younger, another student finds a video of him and also brings it to school. In this video, Jack is being picked on by some larger students at his middle school: they approach him, pull off his pants and underpants, spray his body with paint, and run away, leaving him there, degraded and partially naked. Jack is clearly aware of the existence of the camera, but can do nothing to stop what is happening. Students' laughter from off-camera echoes in the closing moments of the video and the word "punct" appears at the end of it. Jack's students spread the video throughout the school, sharing it with friends and acquaintances alike via their portable media devices. The last of Jack's control over his classroom, and of his self-respect as an adult, fades into the background after being forced to repeatedly relive this experience from his childhood, an experience he had tried hard to leave behind.

The Hidden Camera

Susan had been the victim of bullying for much of her life. Since entering high school, she had been taunted and teased at every turn. Some of this teasing happened in the locker room after physical education classes, when Susan had to be naked along with her tormentors. Susan dreaded these encounters, and did her best to protect her dignity and pride. One day one of the other girls snuck a camera phone into the shower, and recorded a video of Susan trying to keep herself covered while she showered. The video was shown around school, and led to Susan's parents removing her from that school and moving to avoid the continued

teasing. Susan graduated from college with a political science degree and got a job in the legislature, eventually running for and attaining elected office herself. During one campaign, the video of her from so long ago is “found” and redistributed, bringing Susan back into the emotion and heartache of her youth and bullying her again.

These scenarios show us a number of things. Initially, they also help us to see the potential for both immediate and long-term harm from the creation and distribution of digital media artifacts. But, from law’s perspective, they help us start to see who might have legal rights over the distribution of particular media artifacts we are concerned with, a question we will return to later. There is a continuum of digital media artifact creative activity and involvement that moves from active creation to a passive object. “Active creation” involves young people who embed themselves in digital media artifacts not only by choice, but both by directing the creation of the media files and by embedding themselves within them. The “passive object” is the pure subject of digital media’s creation; the object neither participates in the decision to create the artifact nor directs any part of its coming into being; in fact, the pure object may not even know that the digital media is being created (though he or she may later learn of its creation). Between these polar extremes exist situations where the object may have knowledge, or may acquiesce to the artifact’s creation, but does not exercise control over its creation. These matter to who has control, often technological, often legal, and the effects of these elements of control on the actual practice of control in the real world is the next step in our journey.

Digital Media: Why Control Matters Even More Today

Types of Media: Differential Similarities

Not all media are created equal. As McLuhan taught us, the medium is the message, a lesson that at times has been a bit overstated. Yet, we recognize that human beings perceive media in different ways. A written text is different from a photograph, a photograph is different from a recorded moving image, a recorded moving image is different from a live moving image, and a live moving image is different from live action viewed directly. Add in audio and the differences are multiplied further.

The point here is thus a fairly straightforward one: all digital media are not equal. If we consider a young boy who writes a “racy” e-mail to a girl for whom he has strong affections, should that e-mail appear later in his life, his first line of defense would be to simply deny his affiliation with it. It is incredibly easy not only to create text and pretend that it was created by another, but even to create false e-mails that appear to be from one person when they are in fact from another (thus the wide distribution of spam and viruses via e-mail). It is similarly easy to fictionalize an account of a particular event, including who participated and what occurred. If we read a text account, especially from an untrustworthy source such as a personal Web page, we are likely to be quite doubtful of its authenticity, both as to origin and as to claims of truthfulness. This will be exacerbated where the subject of the textual account denies their participation, that the events took place as told, or both, especially where we are personally familiar with the person making that denial.

Visual media has a significant effect on our perceptions, our beliefs, and our understanding of the world around us. But even following the advent of visual-based media, such as photography and television, because of the significant cost of both creating the relevant media artifacts and the difficulties of distributing them, our perceptions could be rationally based on generally accepting visual depictions at face value. Our neighbor could not broadcast a

video into our homes; in fact, until quite recently, any video camera owned by our neighbor was likely to produce video media artifacts of a quality that they were easily seen as “nonprofessional,” and the neighbor’s attempt to alter the video, or to undertake such post-production as to alter the reality captured within it, was unlikely. It was simply too expensive to capture and alter visual depictions.

This state of affairs is rapidly changing. The price of digital still and video cameras has fallen such that they are now within the financial grasp of a large number of people, and the integration of capturing video with computer generated postproduction, and your neighbor now can make “professional” visual images. He can clone out red eye in photographs, or even convincingly remove an entire house; he can add graphics, additional images, and undertake animation with video cameras. The analog methods of creation and production, once in the hands of the “trusted” few, are now increasingly in the hands of the many. We are now all potential creators, leaving only our senses and our critical thinking skills to keep us from being convinced that Martians have landed in Washington and are taking over the world.

As we move on in our inquiry here, the thing to remember is that the shift to easy and inexpensive creation of digital media files means that these differences are critical to the problem we are predicting here. Without this ease, children themselves would not likely have the ability to embed themselves or to be embedded in digital media artifacts to the extent that currently appears likely. Add to this—as we shall see—the potential for persistence of these digital media files, and it appears likely that young people who create digital artifacts as the offshoot of growing up digital—with their likeness and actions embedded in digital media files—will suffer from unexpected outcomes in relation to these digital artifacts due at least partially to a lack of control—legal, cultural, normative, technological—over them after they are created. How distribution has changed, and especially why it plays this critical role, is the point we take up next.

Strangers, Networks and Storage, and Persistence

We reach now an integral part of our story. Digital media creation is potentially in the hands of everyone. We all may be the objects of those digital media, with various pieces of our digital lives or of our growing up digital embedded within them. We may have actively participated in the creation of those artifacts of digital life, or we may be only their objects. So what?

The answer is that the transition to digital media, accompanied by the increased availability of the tools for digital media creation, also alters another fundamental element of media creation: distribution. We have already seen that the creation of digital media artifacts is now easier than ever, and it is likely to become even easier and less costly over time, becoming a pervasive part of everyday life as media creation devices are embedded in other technologies, such as mobile phones. But, how has distribution, another essential piece of the puzzle, changed?

In the past, duplication and distribution of media files was more expensive, both in cost and in quality, when those files were in analog formats. Recording a vinyl record onto a cassette tape took as long as it would take to play the album through, including flipping the album over halfway through. Making further copies of the tape required another connected cassette deck, and each copy—even the first cassette—was of a lower quality than the original. This is described in media terms by saying that such copies were “lossy”—each subsequent generation of copies was a bit worse than the original. Finally, to share the media created,

some physical connection was required. That is, they had to be sent through the post or handed over in person. So, creation, duplication, and distribution were all quite difficult. You could, generally, only share with people you knew (unless you were willing to risk being caught selling such goods in a flea market).

If an analog videotape had been made by a young woman for a young man, she would have had to deliver it to him personally or by mail, and if their relationship had later ended, he would have been hard pressed to show it to more than his direct circle of friends. Preventing further distribution would have been the difficulties of distribution, such as his likely inability to get a video production company to be willing to release it without his ex-girlfriend's consent, and the loss in quality if he wanted to make duplicate copies himself. In addition, if he had offered to show the video to strangers, perhaps those passing by in the local shopping mall, he would likely have been ignored, and probably asked to leave that public space. If, ten years later, someone wondered whether this young woman had ever made such a video, he would have had to hire a private investigator to inquire of her past friends and boyfriends, something most people would not be willing to do. Discovering the existence of such a video, let alone finding a copy, would have been a practically impossible—or at least highly improbable—task.

These examples show us that a number of obstacles to the creation and distribution of the artifacts of growing up analog would have limited the effect that these artifacts could have later in life: readily available technologies only allowed relatively poor copies to be made, with each copy generally taking the same time to make as the media artifact being copied; distribution was limited to physical means, and was generally limited to personal acquaintances (perhaps even as limited as “good friends”); and trying to determine the existence and location of such files in later years was so difficult that most people would not have attempted it.

Digital technology has “solved” these problems, or at least allowed most people to overcome them. Our first objection disappears as the computer and digital media devices allow us to make perfect copies of all of our digital media. If we change the format—say from CD audio to MP3—the quality may be somewhat degraded, but copies of the MP3 file will duplicate the original MP3 file exactly. In addition, digital copying can take place in mere fractions of the time of making an analog copy, as it is the speed of the computer processor and related technology that matters, not the time length of the original file.

Our next obstacle—that of distribution—falls as digital devices such as computers are interconnected and networked or as digital media technology is introduced into mobile phones. We can now widely distribute files of any type, without knowledge of who the receivers or potential receivers are. This can happen through Web pages, peer-to-peer technologies, file transfer protocol (FTP) servers, or other networked technologies (widely grouped around use of the internet). But, as we shall see, not only can we easily distribute, we can just as easily lose control of the file. Once it's been released “into the wild,” it may be impossible to ever get it fully back under control. As media companies have learned, finding and deleting or even inhibiting access to digital files once they are released is difficult, if not impossible. Restrictions on access need to be included at the file's creation; if they are not, or if they are overcome, they most likely cannot be restored later. We will explore some of the implications of setting digital artifacts free in the digital wilderness as we move further through this discussion.

Our last analog obstacle—that of discovering and locating media artifacts—is again solved in the digital age. This time, our saviors appear in the form of search engines, archive sites, and online communities that share digital media files, often by niche or type. Thus, amateur sex

videos are distributed on many internet sites, while others specialize in distributing strange, odd, embarrassing, or even disturbing videos, photographs, and stories. Some of these sites even maintain tutorials describing how to capture and prepare digital media artifacts for distribution to others. Still, other sites, rather than collecting, simply locate existing videos or photographs and make them available—from the original Web site—in a gallery format for viewing or downloading. In addition, the major search engines together have indexed file data on a large number of pages available on the Web, and often on the files that those Web pages include. Archive sites allow material that used to be available on the Web, but no longer is, to be found. This form of data indexing is now pervasive and user friendly. If you want to find it, and it's out there, there is a technology available to help you do so.

All of this together makes discovering the existence of and identifying particular copies of media files now easier (though not necessarily “easy”) to do. Even media content that was originally in an analog format may have been converted to digital and can now be shared. Today's technology allows us to communicate personal digital media content to strangers, and it allows the personal digital media content to remain available and findable over long periods of time.

This point deserves further elaboration. Even with the ability to create and distribute, there is little to support the claims here if the digital media artifacts do not persist across time. Persistence, and especially the kind of pernicious persistence described here, is not simple existence. It is the ability to learn not only the existence of the artifact, but to be able to locate and obtain a copy of it. The case is being made that digital media artifacts are yet again qualitatively different in this respect when compared with analog media files. Something has changed in the way that media artifacts exist in the shift from analog to digital creation and distribution, and that something makes the files not just easier to create and easier to distribute, but also easier to find, both in terms of finding out about them (i.e., of their existence) and in terms of finding where they are (i.e., their actual location).

Think back to a time when music lovers had collections of record albums, pressed on vinyl, on shelves in their living rooms. They may have recorded cassettes from these albums, either full copies of the albums or “mixed tapes” (given names appropriate to their use, such as “driving tape” or “music for the beach”). Now recall how hard it may have been to find a particular song on a particular album, or worse yet, on a mixed tape made by someone else. If they had not written the order of the songs down, finding a particular song on a particular tape involved first locating the cassette tape and then fast forwarding and rewinding through it.

This continued with the advent of videotapes, whether recorded for private use and time shifting, or recorded on an analog video camera. If a person failed to label the tape and name it something useful, finding video content later was something of a nightmare. Even if the date of creation was known, finding specific content on an unlabeled tape, especially where large numbers were unlabeled, was a difficult task.

Add the element of time to the mix. Consider the example of a videotape recorded ten years ago, showing the camera operator's young friend falling off of his bicycle because he wasn't paying attention to what he was doing. That tape sits in a pile of unlabeled tapes in a box in a dusty corner of the camera operator's garage, forgotten and unknown. The video's subject—the bicycle rider—is now a bicycle safety instructor, and he claims as he badgers his students about paying attention to their riding that he has never in his life let his attention wander when he rides. He is particularly hard on one young man who doesn't seem to be getting the message. This young man broods over the instructor's directions, sure that at some point the instructor, too, was not focused on his task. Yet he has no way to know of

the videotape's existence, let alone its location. Even if the person who knew of its existence remembered that it existed, it would be difficult to find. The original tape exists, but it is not persistent as that term is used here, because it is largely forgotten. Even if it had not been forgotten, it would not easily be found.

Digital media in the networked environment changes this. Alter our scenario to make the video recording a digital one, showing the same events. Perhaps the boy—now our instructor—who fell thinks the video is quite funny, and asks his friend to post it to an “embarrassing moments” Web site. It is uploaded, and at the time of upload is categorized, named, and its content described. The friends then tell all their friends about it, and everyone watches it. Google, Yahoo, MSN and other search engines index the site, so that anyone searching for this boy's name will find the video. Eventually, archive sites, dedicated to making sure materials that are available online remain so over time, archive the video and its attendant metadata—that information about the artifact, information that relates to it and describes it—where it remains available over time.

We return to the present, except now the young man who has been the focus of the instructor's attention simply goes home and searches the Web for the instructor's name. If the original site is still operating, the video is easily found using whatever is the main search engine of the day. If the original site is no longer available, then archive sites may provide a means to both identify and locate the video. The digital age has again altered how things were in comparison to the analog age, that is, digital media artifacts now exist more persistently across time, and have an increased potential for long-term effects when compared with analog media artifacts.

It is persistence across time that is the point here. Digital media artifacts, whether made by young people or made by adults, persist across time. They are created, categorized, and stored in a way that makes them easier to find across both time and geographic distance. We will make more of them (quantitatively), and they will be distributed more widely. They will persist, and the implications of their existence will be extended across time and space in a way that is qualitatively different from similarly produced analog media artifacts.

There is an argument that incompatible file formats could prevent later viewing or reading of data originally saved in a file format that is no longer used. The brief history of the Web shows us, however, that where there is a need for a conversion technology to make “old data” or “old files” that have become obsolete through technological change usable today, a conversion utility will be created and made available, often for free. This has occurred in relation to games originally played on the first gaming consoles, which cannot be played in their native format on either current computers or current gaming consoles. A number of Web sites and Web communities exist to make such games available again, including creating and maintaining the application software required to make them function on today's powerful PCs.⁴ So far, our experience has been that if a file is digital to begin with, someone, somewhere, can design a way to make that file readable again today. Because digital files are flexible, or “plastic”—they are, after all, in a binary form, made up of zeros and ones—it seems that this is likely to continue.⁵ Thus, it seems that digital media artifacts are likely to be persistent, that is, their existence and location will likely be known or knowable, and they will likely exist in a usable form.

An Aside and a Retreat

Some of the assertions above may be made too strongly, especially given continued changes in technology. Remember, this chapter does not flow from the perspective of technological

determinism. We will make it such that in the future, with our technology, our futures will not be determined for us by that technology. A critical element of this current issue is that the costs of creation and distribution of digital media have declined, leading to the widespread use of digital technologies to create digital media artifacts. Is it not that other technological costs are likely to decrease, as well, that might mitigate the impact of the “If I can see it, it must be real” perceptive phenomenon? There is no strong reason to argue that they will not. In fact, it is possible that soon anyone working with digital media will be able to alter video and photographic images so easily and so effectively that we will, within society, simply learn to distrust those images as much as we may distrust bare text. Remember, there was a time when the written word, signed under wax seal, was truth. That day is long gone, but the potential for “seeing is believing” to follow in its wake given current changes in technology does not seem impossible or even improbable.

Persistence and Pernicious Effects: Maturity, Responsibility, Autonomy

There is potential harm, and potential long-term unanticipated harm, to children from the creation of and their entanglement with digital media artifacts. Spouses, partners, lovers, and friends are already learning about the pernicious effects of digital media today. We are concerned here with these harms as well, but injuries such as these cannot be viewed or reviewed outside of the society's structures for addressing such harms. Protections against harm cannot do more damage to society than they prevent in terms of individual harm. We thus must balance any response to the largely unforeseen pernicious persistence of digital media artifacts against the problems that may arise in crafting a solution to the persistence problem.

We are concerned with adults whose lives are disrupted by the appearance or reappearance of digital media artifacts made by them as adults and that they reasonably thought were private, or about which they had no knowledge, but we are also constrained in our responses by the institutional and regulatory structures that we perceive as holding society together. Individual autonomy and individual responsibility are two important parts of the theoretical groundwork that justifies both criminal and civil law. The pernicious persistence of digital media artifacts created by or featuring adults may thus place us squarely in the middle of rather intractable debates regarding freedom of expression and individual responsibility. This is not the place, however, to dive into this debate, though diving in will likely be necessary at some point in the future. Law treats adults as individuals and holds them responsible for their actions.

A different case arises, however, when it comes to our children. The law treats children differently from adults across a range of enterprises and experiences. It often does so based on the arbitrary establishment of an age, only upon the attainment of which can the relevant person undertake the relevant action. There is no set age used by law to determine when the shift to a future-oriented perspective occurs for our young people. In the United States, the law uses the ages of eighteen to signify sufficient maturity for purposes of voting and twenty-one for drinking alcohol, while in the U.K. those ages are eighteen for both voting and drinking alcohol. In Germany, young people must be eighteen before they can independently bind themselves contractually without the consent of their guardians. These ages are based as much on perception and ad hoc (adult) experience than on hard scientific fact, but we are generally in agreement that young people need to be mature before they will understand the effects of certain of their actions. The law sometimes seems to go to extremes to prevent young people from suffering long-term harms from their “youthful indiscretions.”⁶

Yet, we do not shield our children in every way and from everything they do that might follow them throughout their lives. The marks a child receives in school may be important to entering college, which may then affect their path in life, and though the “permanent record” may not exist, the effects of early decisions on children’s later choices in life are noticeable. This is especially true with regard to having choices as to which University to attend, a choice that can often be highly determinative of later opportunities in life. Law does not shield children from the long-term effects of these decisions. In fact, in many countries the performance of children in primary school determines their choices of secondary school.⁷

Our focus on the global nature of the distribution network for digital media artifacts has taught us that it is difficult, indeed perhaps impossible, to strictly control the distribution of such artifacts once they are “in the wild” given the current state of the law. We return to this international focus now, seeking a useful description of when the law acts, and does not act, to protect children and young people from the potentially harmful effects of their actions. Our purpose remains to consider whether the law should act specifically in the interests of children to strengthen their control over digital media artifacts in which they are embedded.

At times, minors are prohibited *ex ante* from engaging in certain acts—smoking cigarettes, drinking alcohol, driving automobiles—because minors are viewed by the law as being insufficiently mature to deal with the implications and potential negative effects of their actions in these situations. In some cases, such as smoking cigarettes, it is both the current decision that young people are seen as being insufficiently mature to understand, and the long-term implications of that current decision. At other times, minors are released after the fact from the long-term implications that would be suffered by an adult who has taken the same actions. Thus, minors who sign contracts might be released from their terms, depending on the law of the contracting jurisdiction.⁸ Minors who commit crimes might have their records cleared or expunged *ex post* upon reaching the age of twenty-one.⁹

In both the *ex ante* and *ex post* scenarios, action is taken by the state—through law—to address questions of the perceived inability of minors to make certain decisions. Whether this is actually effective or not is often open to debate,¹⁰ and it should be noted that the law acts in this paternalistic fashion not only in regard to minors, but also in many cases—such as prohibiting suicide or requiring helmets for motorcyclists, for example—to adults as well.¹¹ In addition, the question of maturity and capacity for decision making is often politicized, such as in the area of requirements for parental approval for abortions sought by their children.¹²

The reality is, however, that the law—at least in common law jurisdictions such as the United States and the U.K.—does not have a clear track record of addressing these questions. It is yet another murky patchwork of provisions arising from separate legal doctrines, and lacks a common juridical thread that might be seen as holding it together, though attempts to bring order to the chaos have been made.¹³ Reactionary movements to lower the threshold under which minors are charged as adults help little to settle the law.¹⁴ This might perhaps best be identified as law’s schizophrenic side, an element that makes it difficult to predict how law would intervene in affairs such as these. There is a desire to recognize children as autonomous actors, while at the same time insulating them from the repercussions of some of their actions. This conflict seems to underlie the current movements to remove minor protection where the action taken is perceived as adult, even if the minor could not—from a developmental standpoint—fully understand the implications of their actions.

With all of this, the only generalized conclusion we can reach here is that there are circumstances under which the law will intervene on behalf of young people to prevent

them from doing harm to themselves, to prevent others doing harm to them, or to prevent them from suffering the long-term effects of certain decisions that they might make. In all cases, it is a community choice based on the cultural norms of a particular society.

This is a story of how the law sometimes shields and protects children, and sometimes does not. Here, the kinds of effects that may ultimately result, and the way in which they have come into being, are a fairly straightforward result of the immaturity of the young people involved in making or being featured in the artifacts we are discussing. In addition, the injury is to that young person, not to another person, such as in the case of a murder committed by a fifteen-year-old. Intervention on the part of the law—protection for children—thus seems warranted.

Here, law might take up young people's cause because the pervasiveness and persistence of digital media have the potential to increase the long-term effects of what is an otherwise healthy and necessary part of development. Where a youngster shares his or her experimentation with others, especially using visual media, there is the potential for this digital media artifact to reappear at a later time in life. Because society is not particularly good at accepting embarrassing moments as simply a natural part of life, these videos have the potential to cause significant embarrassment later in life, especially if they appear at inopportune moments or are found by people who would use them against their subjects.

This need to experiment, to try and determine for themselves what is good, right, interesting, and fun, is natural—it is a part of life. Some experimentation is expected, and recording some of this experimentation, this growth, would not likely have any negative effect on the future. In fact, a mother being able to show her daughter that she too once learned to ride a bicycle would likely be positive. It could create shared memories and help solidify the bond between parent and child. But, where there is a potential for negative effects, especially long-term negative effects, the solution most societies have chosen is to insulate children from them in whatever ways are possible.

The question thus remains whether special intervention on the part of children is required here. To answer this question we must investigate whether the law already provides young people with the control they need, control over the digital media artifacts in which they are entangled while living their digital lives. We must therefore ask to whom the law currently gives control of these artifacts, and if we are dissatisfied with the answer, we must consider what the law might do beyond what those provisions it already has in place to address the issues raised by those who become entangled in digital media artifacts.

The Law and Control of Digital Media Content

The initial question for investigation at this point is the law's application and its relevance in determining who has legal control over the digital media artifacts created while growing up—or living—digital. As we shall see, for a variety of reasons, it is initially unlikely that a subject that appears in a digital media artifact will be given control over that artifact by the law. There are circumstances where this does happen, but they are limited and do little to allow us to address the problems that might result where control is not awarded to the individual in question.

Legal control over digital media artifacts flows from a variety of doctrines in a variety of areas. In the United States and the United Kingdom, intellectual property law—specifically, copyright law—is relevant. Privacy would also seem to have some pertinence to our question, though as we shall see, privacy law often has little substance that is related to what we perceive as private outside of the law. Other law is relevant, as well, such as laws against

creating and distributing child pornography. Our task here is not to provide an in-depth, comprehensive review of every legal nuance across a host of national legal structures. Instead, we will endeavor to touch only the surface with an eye toward gaining an understanding of the structure of control. Much of what appears here will of necessity oversimplify what are at times complex issues, but not so much that they will be inaccurate, and hopefully the balance struck will be between complexity and comprehensiveness on one hand, and not losing focus on our ultimate goal of dissecting potential futures in a world in which our existence is entangled within persistently pernicious digital media artifacts on the other.

Copyright law provides “ownership” over creative works that meet its rather low creativity or originality requirement (essentially that the creative works not be directly copied from existing works, and that the required level of effort was put into their creation). Copyright protects expressions of ideas, but not the ideas themselves.¹⁵ When a digital media artifact is created, unless it is a copy of an existing work, it is likely to qualify for protection under copyright law, even if it uses existing works as part of its content (though doing so may itself be a violation of the copyright in those existing works). The important element to note here is that copyright law generally protects the authors of works, giving ownership of the created work to that author¹⁶ (the author being a legal term of art that essentially equates with the legally prescribed “creator” of a work). In some cases, authorship is quite straightforward—a poet who writes a poem has created it, and is therefore its author (and first owner), for example—though there are of course exceptions (such as “works for hire” or works created within the course of employment). Where copyright attaches, the copyright owner has the authority to stop unauthorized distribution, copying, and public display of the work. Copyright law would thus seem to be a strong potential ally in our search for control over digital media files with young people as their objects.

The difficulty in utilizing copyright law for this purpose, however, is that the author of a digital media work is unlikely to also be its subject. For example, under U.S. law, motion picture ownership is most often subsumed under the “work for hire” doctrine (wherein the studio employer becomes the owner of the copyright).¹⁷ In our scenarios above, there was no employer, no work for hire, and so we need to understand copyright’s perception of a film’s author outside of the traditional commercial film studio. In that capacity, the author of a film is uncertain; it may be the camera person, or the producer, or both of them and others jointly (where both exist). It may be the actors, but this appears unlikely, as they may undertake the acting, but play little part in the creation of what is considered the motion picture. In the U.K., the authors of a “film” are the principal director and the producer,¹⁸ the “producer” being defined as the person who made the arrangements necessary for the film to come into being.¹⁹ There is little question that in the U.K., actors are not “authors” of films in which they appear. Similar results are obtained in relation to photographs, where it is the photographer, not the subject photographed, who “earns” the right under intellectual property law to “own” the rights to that photograph under copyright law.

In the scenarios presented near the start of this chapter, only one person—Mark, who made and sent videos of himself to his girlfriend—was both the maker (and thus author) of the digital media artifacts as well as their object. He entangled himself in these digital media artifacts, and as such was likely their legal owner. In all three of the other scenarios, the person with whom we are concerned, the one the digital media’s pernicious persistence may later affect—was object only (willing participant, knowing participant, or unknowing

object aside), and therefore likely has few if any rights under copyright law in the artifact with which their digital selves has become entangled.

We are forced then to turn to other areas of law that may provide help in the kinds of situations we are discussing here. Privacy law is one, but to even begin to delve into the legal conception of privacy is to open a can of worms that could not be returned to their can by the end of this entire series of volumes, let alone the end of this chapter. In the United States, privacy law is seen as ill prepared to deal with the demands of technology and digital media distribution.²⁰ In addition, privacy law is not cohesive; it is an amalgam of different legal doctrines that are oftentimes lashed together, but that lack unifying themes or structures. One of these disparate areas is particularly pertinent here, however, the right of publicity or personality.

Using the United States as our first example, the right of publicity is a right based primarily in state law. That is, each of the fifty states has its own law governing the matter. They generally prohibit commercial use of an image.²¹ New York's law (contained in the N.Y. Civil Rights Law) is illustrative:

§50. Right of privacy. A person, firm or corporation that uses for advertising purposes, or for the purposes of trade, the name, portrait or picture of any living person without having first obtained the written consent of such person, or if a minor of his or her parent or guardian, is guilty of a misdemeanor.

Much of the distribution we have discussed is not commercial in this respect. It is public, but not for "trade." The laws of many U.S. states would not apply to prohibit the kind of digital distribution at the heart of the matter here, taking place through peer-to-peer file-sharing networks and online forums.

In the U.K., there is no specific "right of publicity," but rather a patchwork quilt of other laws that are used to obtain something that looks like a publicity right. In many European countries, however, the right of personality is stronger. In Germany, for example, the right is notably stronger, with each person having the right to determine when and which photographs of them are published. This is a legally enforceable right in Germany, and similar rights exist in France. In Canada, the right to anonymity—ostensibly part of the right to privacy—may also be implicated here, but the application of this right to files that you personally created and initially distributed is far from certain.

Other methods of control not directly focused on digital media artifacts may also be used. Child pornography laws may be brought to bear should the digital media artifact consist of illegal content (even where that content was created by the child involved acting alone). A school may suspend children who inappropriately use digital media to disrupt the learning environment, for example. There is some control provided by law that may be used to obviate some of the harm that might come from the pernicious persistence of digital media artifacts.

Note here that this does not assume that simply through the enactment or potential application of law the results will be guaranteed. The underground culture that the internet has helped facilitate has many technological ways to make "end runs" around the law, and so law should not be seen as having a claim to perfect enforcement or efficiency. National boundaries, the places at which the edge of a country's authority extends, present additional obstacles to the law's assistance here. But this does not mean that we should not at least attempt to have laws in place that are addressed to preventing harm, especially where that harm may be to children. To accept such an argument would be to give up on law altogether, something not many of us would likely be willing to do.

Moving Forward or Forced to Stand Still?

For the problem we have set out here, law is not determinative (in fact, law is not determinative of the outcome of any problem, but that is a discussion for another chapter in another book). Does that mean we are without any means of moving forward, of trying to take some steps that might at a minimum mitigate the potential for negative consequences to flow from our youthful entanglements in digital media artifacts? Of course it does not; just as this chapter is not bound by notions of technological determinism, it is also not determined by a defeatism in the face of technological change and legal challenges. There are a number of things that can be done, and though not likely to be a silver bullet solution on its own, law does play a role. In addition to law, we might make moves in education, technology and cultural and societal awareness. In this, the penultimate section of the chapter, we consider these areas together, thinking again of the law, but looking forward, and considering—briefly and for the first time—steps we might take in these other areas. Alone, none of the potential options is notable; together, they may make some difference to whether and to what degree digital media artifacts created by our children today are perniciously persistent tomorrow.

Starting with law, we have made the case that our children differ in maturity in important ways from adults, and these differences are sufficient to justify differential treatment when it comes to the effects that being embedded in digital media files will have on their lives. To that extent, while national governments often cannot take dispositive steps to enforce their laws outside their borders, and so to the extent media files are distributed globally, children cannot be protected alone by the law itself, adopting laws that give greater control to children over the digital media artifacts in which they are embedded would still be a useful step. Adopting either a German style “control over image publication” right for minors (or in relation to digital media artifacts that contain minors), or even a copyright-style distribution right in favor of children who are the subjects of digital media artifacts, is one possible step. Applying such a step to digital media artifacts featuring adults could run headlong into freedom of expression on the part of those wishing to distribute such artifacts, and would require a greater balancing of interests. For children, the result is possibly easier to achieve.

Add to the mix the potential for education to bring at least a minimal level of understanding of the issues of becoming embedded in digital media artifacts to children, and things look brighter still. Currently, digital media education is focused on a number of tracks, from how to use digital media in all its many forms to media literacy or understanding of how media work and how to understand the different messages media bring to us. There has been little, if any, work done on how to educate children regarding the long-term effects of either creating digital media files that include themselves within them, or allowing themselves to be included in such files created by others. It is important that new works addressing digital media, whether from a literacy standpoint²² or a skills’ standpoint,²³ include discussions of the persistence of digital media across time and the importance of considering this point when creating digital media artifacts.

Education in this sense will do little to overcome situations such as Jack’s and Susan’s, where they were included in digital media artifacts without their explicit consent. Where knowledge or consent is not a part of the digital media artifact’s creation, educating children as to these effects has little chance of contributing significantly to overcoming the long-term perniciousness of these files. That does not mean that education should not take place; it should, while acknowledging that it is likely to attack only half of the potential for the pernicious persistence of digital media artifacts.

Other opportunities are presented by technology. Major media producers have long used content encryption to protect DVD content for many years. Currently, Apple and other online MP3 distributors use similar but more advanced technologies to protect MP3 files. Developing and placing in the hands of young digital media creators affordable, useful technologies of this sort may help to keep files under control that—if released now—would be gone with the cyberwind. As with education, however, this part of the solution helps only so far as the media artifact in question was at one time under the control of the young person embedded within it. To the extent that its creation was practically outside the control of the person featured in it, this solution may actually counter the subjects' attempts to control the file, as they themselves may not be able to see it without the permission of the person who added the technological protection to it. In addition, all such systems are subject to being broken, as has happened with traditional DVD protection, Apple's MP3 protection, and now the protection newly put in place to protect high definition DVDs, even before such DVDs have even been firmly established in the marketplace.

As our last potential piece of the puzzle here, we consider how society itself might adapt to a future that includes perniciously persistent digital media artifacts. What will these artifacts show? They will reveal society's child or adult members in a light that many of us share, doing things not unlike things that many of us have done or had done to us, and as such, could become viewed as vestiges of a normal youth. That they are recorded in digital media files could be viewed not as a perversion or an oddity, but just as something that happens and is likely to continue to happen. Some have argued that this is likely to be true with respect to people, technology, and sex, where society is predicted to adapt to changes in this area.²⁴ Why not to this as well? In addition, and to the extent that such artifacts are created without the consent of their subjects, entangling youngsters against their will or without their consent, they could come to be viewed as evidence of injustice, regardless of the actions shown within them. That is, their viewing and distribution could be viewed by society on the whole not as embarrassing to their subjects, but as embarrassing to those who created them and to those who now continue to distribute them.

This does have the potential to address the "noncontrol" issue that arises in situations like Mark's and Susan's, and could be a possible safety net discouraging even the creation of such artifacts. But this solution, such as it is, is extremely simplistic in its worldview. We know that societal views on issues such as sex and other embarrassing situations change slowly, if at all. If victims of rape are still often considered to "have asked for it," and campaigners have limited success in overcoming the stigma attached to cases of domestic and sexual abuse, there is little realistic cause for optimism regarding society's ability to adapt to and overcome attaching stigma to the types of personal situations likely to be preserved in digital media artifacts. Add to this the tendency of some to do and act exactly opposite to the norms of the society in which they live, undertaking such activities "underground" if necessary, and the problem remains quite deep.

Considering these together, there is reason for hope, but it must be tempered by the reality of digital media as we understand it. We must encourage our children to think about how what they do today with digital media will affect them tomorrow. We would do well to do the same ourselves.

Special Futures, Future Shock or Both?

We have woven here a story of a technological nature that has the very real potential to have unexpected outcomes in relation to the entanglement of young people into the substance

of digital media artifacts. These artifacts result from children who grow up digital, similar to how they grow up a particular race, or to a particular height. In fact, children who are featured in digital media artifacts will leave digital pieces of themselves within those files. Digital media permeates our existence, and as the current trends toward more powerful and more affordable digital media creation and distribution technology continue (as they are likely to do), it is likely to further advance our digital lives and our digital selves.

These are not the digital selves we manufacture while online, the embodiments of our efforts to portray ourselves a certain way, though these may be part of our growing up and living digital. They are instead the digital pieces of digital lives that are created with more and more frequency in current times, and which may spin out of our control, leading to unexpected, unintended, and even surprising outcomes in the long term. These digital pieces are the digital media artifacts that have been the focus of this chapter, whether visual, audio, or even text based. They break off from us—and from our children—as we live our lives, as we live and grow as digital beings as well as analog ones.

Growing up digital will change our children from children who grew up before them. It has the potential to give them a solid grounding in their childhood throughout their adult lives, allowing them to relive memories, and to keep loved ones close in memory after they are gone through digital media files made, stored, and accessible due to digital media technology. They will have aids to memory when it comes to friends, trips, aunts, uncles, fathers, mothers, and life beyond those even imagined by our own parents. In this way the potential persistence of digital media files is a potential boon, bringing about progress for the good for our children. But this is balanced by the potential for perniciousness in these same kinds of digital artifacts.

Within this context, our children are “better” at technology than we are, and will expect things we never expected, accept things we would never have accepted.²⁵ They will have access to and will learn to use digital media technology. They, their friends, and even their enemies will create digital media artifacts, and these will follow them over their lifetimes. The effects they feel from them may be negative, or they may be positive, but most likely they will be a complicated mix of the two. Where popular or mainstream culture learns to accept that kids do stupid things, and to look past the content of these artifacts to the mature adult, the impact may be mitigated somewhat. Where law is adjusted to give rights to the objects of digital media artifacts to control their legal distribution, the impact may again be mitigated. Where technology can be made to effectively and efficiently control access to and distribution of digital media artifacts, at reasonable cost, again, these effects may be mitigated.

But none of these options separately can do the whole job, and this leaves us in largely uncharted territory. We have identified a potential problem in the way our youth interact with digital media, creating artifacts with potentially pernicious permanence, yet we have identified no clear way to prevent it. As Youniss and Ruth have phrased it:

The question we have is, how to begin this process of choosing among the alternatives that will determine the future of youth and the long-term well-being of our society.²⁶

Without some movement on—or at least consideration of—the issues of control addressed in this chapter, some societal recognition of their importance, and changes in law to protect children, we risk a future where the bullied remain bullied throughout their whole lives, where the space that children need to grow is wiped out by the permanence of the digital artifacts that are created when they err, where sharing the intimate steps of life with

strangers—strangers who laugh, or point, or make fun—is an everyday fear. We have a choice to move toward a more tolerant, understanding, compassionate future, or a harder, more strident, darker one.

The time to make this choice is now.

Notes

1. Don Tapscott, *Growing Up Digital: The Rise of the Net Generation* (New York: McGraw Hill, 1998); Donald F. Roberts, *Kids & Media @ the New Millennium: A Comprehensive National Analysis of Children's Media Use* (Kaiser Family Foundation, 1999); Dorothy Singer and Jerome Singer, eds. *Handbook of Children and the Media* (London: Sage Publications); Patricia Valkenburg, *Children's Responses to the Screen: A Media Psychological Approach* (London: Lawrence Erlbaum Associates, 2004).

2. This is not a chapter outlining dangers of pernicious persistence only to women or girls, and as such, the claims and analyses that follow here are consistent with the claims of Cassell and Cramer in this volume. That is, these potential futures will have an effect on boys as well as girls, women as well as men. While the effects themselves are viewed through culture and society, and so the stigmatization that follows them will inevitably differ based on the sex of the digital media object, there is at least a colorable argument that technology equalizes some gender differences, if not putting women in a position better than that that exists in the "real world," see Donna Haraway, *A Cyborg Manifesto: Science, Technology, and Socialist-Feminism in the Late Twentieth Century*, in *Simians, Cyborgs and Women: The Reinvention of Nature* (New York: Routledge, 1991), 149–181.

3. Ian Angell, *The New Barbarian Manifesto: How to Survive in the information Age* (London: Kogan Page Ltd., 2000).

4. See, for example, Abandia: <http://www.abandonia.com/index2.php>; see also, The Abandonware Ring: <http://www.abandonwareing.com/> (accessed June 12, 2007).

5. Yochai Benkler, *The Wealth of Networks: How Social Production Transforms Markets and Freedom* (New Haven, CT: Yale University Press, 2006).

6. This is the terminology that President George W. Bush often employed when asked about his alleged drug and alcohol abuse during his first campaign for election as President of the United States. See, for example, Blue-blooded rivals: Men In The News Al Gore and George W. Bush: Mark Suzman assesses two US presidential hopefuls who are more alike than they would care to admit, *Financial Times*, London (UK), November 7, 1998, p. 9.

7. The Bavarian state in Germany has such a system, with distinctions being made among the "Gymnasium" "Realschule" and "Hauptschule," with the school level providing an indication of the level of instruction and expectations of the students, placement being based explicitly on performance in the lower grades, see Thorsten Schneider, Hauptschule, Realschule oder Gymnasium? Soziale Herkunft als Determinante der Schulwahl, in *Generation und Ungleichheit*, hrsg. Mark Szydlik (Opladen, Germany: Leske und Budrich, 2004), 77–103; Mark Ashwill, ed., *The Educational System in Germany: Case Study Findings* (Washington, DC: US Department of Education, 1999).

8. Martijn Hesselink, Capacity and Capability in European Contract Law, *European Review of Private Law* 4 (2005): 491–507; Anna-Karin Larrson, Robert Perrson, and Sara Cronlund, National Report: Swedish Contract Law, Intensive Programme on Commercial Contracts, Rome (2001).

9. See David Brink, Immaturity, Normative Competence, and Juvenile Transfer: How (Not) to Punish Minors for Major Crime, *82 Tex. L. Rev.* 1555 (2004).

10. Irving Kaufman, Protecting the Rights of Minors: On Juvenile Autonomy and the Limits of Law, *52 N.Y.U. L. Rev.* 1015 (1977).

11. Anthony Kronman, Paternalism and the Law of Contracts, *92 Yale Law Journal* 763 (1983).
12. Stephanie Zavala, Note: Defending Parental Involvement and the Presumption of Immaturity in Minors' Decisions to Abort. *72 Southern California Law Reviews* 1725 (1999).
13. Ngaire Naffine, Who Are Law's Persons? From Cheshire Cats to Responsible Subjects, *Modern Law Review* 66 (2003): 3.
14. Jeremy Shook, Contesting Childhood in the US Justice System, *Childhood* 12, no. 4 (2005): 461–478.
15. Trade Related Aspects of Intellectual Property Law (TRIPS), Annex 1C to the Final Act and Agreement Establishing the World Trade Organization (1994), Article 9, no. 2.
16. (Berne, Article I).
17. 17 U.S.C. §201(b).
18. CDPA 1988 s 9(2)(b)
19. CDPA 1988 s 178.
20. David Holtzman, *Privacy Lost: How Technology Is Endangering Your Privacy* (New York: Jossey-Bass, 2006); Keyon and Richardson, eds., *New Dimensions in Privacy Law: International and Comparative Perspectives* (Cambridge, UK: Cambridge University Press, 2006).
21. Tara B. Mulrooney, Note: A Critical Examination of New York's Right of Publicity Claim, *74 St. John's Law Review* 1139 (2000).
22. Len Unsworth, *E-Literature for Children: Enhancing Digital Literacy Learning* (London: Routledge, 2006); Jackie Marsh, *Popular Culture, New Media and Digital Literacy in Early Childhood* (London: Routledge, 2005).
23. Gigi Carlson, *Digital Media in the Classroom: Increase the Learning Potential of Today's Digital Generation* (San Francisco: CMP Books, 2004).
24. Kate Hellenga, Social Space, the Final Frontier: Adolescents on the internet, in *The Changing Adolescent Experience: Societal Trends and the Transition to Adulthood*, eds. Mortimer and Larson (Cambridge, UK: Cambridge University Press), 208–249.
25. Ronald Anderson, Youth and Information Technology, in *The Changing Adolescent Experience: Societal Trends and the Transition to Adulthood*, eds. Mortimer and Larson (Cambridge, UK: Cambridge University Press, 2002), 175–207.
26. James Youniss and Allison Ruth, Approaching Policy for Adolescent Development in the 21st Century, in *The Changing Adolescent Experience: Societal Trends and the Transition to Adulthood*, eds. Mortimer and Larson (Cambridge, UK: Cambridge University Press, 2002), 250–271.