

GENERATION C: CHILDHOOD, CODE, AND CREATIVITY

Andrea M. Matwyshyn*

Children today have a special relationship to technology, one that the law is unprepared to address. Four conflicting legal paradigms of childhood are visible among the four bodies of law that control digital spaces—those of contract, copyright, free speech, and data privacy/information security—and the tension among these paradigms is becoming increasingly unsustainable. As online business models become progressively more data intensive, the “breathing room” that childhood has been afforded traditionally is eroding. Using the work of Erving Goffman and creativity theorists, this Article argues that particularly in digital commercial contexts, a legal paradigm of childhood is needed that simultaneously focuses on childhood privacy and creating a space for creative tinkering leading to entrepreneurship in adulthood. In this vein, this Article advocates a two-pronged approach to digital childhood: first, that a strong version of the minority capacity doctrine be adopted for contracts in digital spaces, and, second, that a childhood exception be crafted in copyright law.

INTRODUCTION

A video meme of a befuddled toddler trying to interact with a magazine as if it were an iPad recently spread across the Internet.¹ While amusing, this video embodied more than just another cute toddler “user error”; this video was a harbinger of a dramatic cultural shift. We are raising a generation of children for whom technology

© 2012 Andrea M. Matwyshyn. Individuals and nonprofit institutions may reproduce and distribute copies of this Article in any format, at or below cost, for educational purposes, so long as each copy identifies the author, provides a citation to the *Notre Dame Law Review*, and includes this provision in the copyright notice.

* Andrea M. Matwyshyn is an Assistant Professor of Legal Studies at the Wharton School at the University of Pennsylvania. The author wishes to thank Gaia Bernstein, danah boyd, Ian Brown, Ryan Calo, Lilian Edwards, Colin Freund, Jeanne Fromer, Nicole Garnett, Wendy Gordon, Jennifer E. Hill, Nien-hê Hsieh, Sonia Katyal, Greg Lastowka, Miluska Linares, Jennifer Mueller, Frank Pasquale, Joel Reidenberg, Martin Redish, Elizabeth Rowe, Pam Samuelson, Katherine Strandburg, Marcia Tiersky, Kevin Werbach and Jonathan Zittrain. She can be reached at amatwysh@wharton.upenn.edu.

¹ Todd Wasserman, *1-Year-Old Plays With Magazine Like It's an iPad*, MASHABLE (Oct. 13, 2011), <http://mashable.com/2011/10/13/baby-magazine-ipad/>.

and gadgets are the primary point of media reference—the next generation of technology entrepreneurs.

Today's children are different from those of past generations: they view technology as a true extension of the self in ways that previous generations did not, and they interact with technology more fluidly than many of the adults around them. Just as the developmental paths of these children will be fundamentally different from those of previous generations, so too will some of the harms these children will cause.² They are Generation C³—a generation of “digital natives”⁴ that was born into a world already penetrated by the Internet⁵—and the law is not ready for them.

This Article introduces the four conflicting legal paradigms of childhood that dominate virtual spaces: the legal approaches visible in contract, copyright, free speech, and data privacy/information security. The evolution of digital spaces and their blending with physical spaces, particularly school environments, signals a need to reconcile the tensions among these different paradigms of childhood: it is time to assess the law's broader conceptualization of childhood and discuss the implications of this conceptualization for digital childhood.

Relying on the work of Erving Goffman and creativity theorists, this Article argues that a sound approach to digital childhood, first and foremost, recognizes two developmental needs—the need for a private space for identity building without stigma in adulthood and the need for a space for digital “tinkering” and creativity. The first step in building this safe digital space for child development involves a strong extension of the minority capacity doctrine to digital spaces.

2 These technologies may even cause the physical structures of their brains to be coded differently, according to some neuroscientists. See Susan Greenfield, *Modern Technology Is Changing the Way Our Brains Work, Says Neuroscientist*, DAILY MAIL, <http://www.dailymail.co.uk/sciencetech/article-565207/Modern-technology-changing-way-brains-work-says-neuroscientist.html> (last visited May 22, 2012).

3 This term referring to the aggregation of “digital natives” as a cohort has begun to appear in various digital spaces. The “C” in Generation C has been used to stand for various different words. Some possibilities include generation computer, generation connectivity, generation coder, generation cloud, generation creative, generation content creator, generation curator, generation collaborative consumer, generation cracker/hacker, generation collective conscience, generation convergence, and generation cyborg. See, e.g., BOOZ & CO., *THE RISE OF GENERATION C 2* (2010), available at http://www.booz.com/media/uploads/Rise_Of_Generation_C.pdf.

4 For a discussion of digital natives, see, e.g., JOHN PALFREY, URS GASSER, *BORN DIGITAL: UNDERSTANDING THE FIRST GENERATION OF DIGITAL NATIVES* (2009).

5 Dan Pankraz, *Introducing Generation C: The Connected Collective Consumer*, NIELSENWIRE (Oct. 27, 2010), <http://blog.nielsen.com/nielsenwire/consumer/introducing-gen-c-%E2%80%93-the-connected-collective-consumer/>.

This extension paves the way for children's data protection and impression management, including what might be termed a children's "right to forget,"⁶ as well as a default of information accountability for children's data. The second step entails the creation of a childhood exception in copyright. While children may indeed cause copyright harms, in today's highly tracked technology environment, applying the same digital copyright approach to children and adults will detrimentally impact the next generation of technology entrepreneurship in the United States. A more developmentally-sensitive approach in copyright is needed to maintain a space for children's tinkering, creativity, and future entrepreneurship.

I. THE FOUR LEGAL PARADIGMS OF DIGITAL CHILDHOOD

The Four Horsemen of the Infocalypse is a colorful slang term that has long permeated Internet culture. It is generally understood to refer to four types of cybercriminals—terrorists, drug dealers, organized crime/money launderers and Internet child pornographers—and debates over various legal and policy initiatives often reference the looming specter of these malefactors. In particular, technology debates often center on how to best protect children from these cybercriminals, as well as the necessity of various privacy-invasive countermeasures toward this goal.

However, these discussions around online child protection fail to acknowledge a meaningful underlying obstacle. Law and policy around children's behavior in digital spaces are conflicted over a very basic question: does the law need to *protect children from adults' behavior* in digital spaces or does the law need to *protect others from children's behavior* as if it were adult behavior in digital spaces? The two are not always compatible.

Let us begin by stating the obvious: children are not adults. Developmental differences between children and adults abound: children process information differently,⁷ and they have fewer cumulative learning episodes and life experiences than do adults.⁸ Because of these developmental differences, many bodies of law that interact regularly with children contain child-protective elements—a different set of rules for accountability depending on whether the actor is a child or an adult.⁹ Determinations of children's accountability for conduct

6 See VIKTOR MAYER-SCHÖNBERGER, *DELETE 4* (2009).

7 See, e.g., DAVID EAGLEMAN, *INCOGNITO*, Chapter 4 (2011).

8 *Id.*

9 However, this type of childhood protection is not universal: in particular, the two dominant bodies of law in digital spaces, contract and copyright, clash on this

have always been socially and culturally constructed. For example, although Roman law presumed capacity at age of fourteen to enter into agreements,¹⁰ during the Middle Ages, boys' age of majority was raised to twenty-one.¹¹ In the United States, the law around children's accountability has remained relatively constant during the last thirty years. The default age of majority in the absence of express statement to the contrary is eighteen,¹² and children under age eighteen are restricted from many activities: for example, they are not allowed to participate in the democratic process through voting,¹³ cannot drive in some states,¹⁴ cannot purchase alcohol in all states,¹⁵ cannot get married in some states,¹⁶ cannot consent to medical treatment,¹⁷ and cannot join the military.¹⁸ However, with the arrival of the Internet as a fixture in the lives of children, these seemingly well-settled rules around the construction of childhood are being tested.

The Internet presents a single space where four different legal paradigms of childhood converge—contract law, copyright law, free speech caselaw, and data privacy/information security law. Each approaches childhood differently, and their conflict is impacting children's development. Because these approaches now clash in a single space, a harmonized approach to digital childhood is needed.

point of whether child protection is necessary. Contract law says yes; copyright disagrees. Although this conflict is not new, its importance grows as greater portions of children's private lives are played out in digital spaces and subject to both regimes simultaneously.

10 See Note, *Infants' Contractual Disabilities: Do Modern Sociological and Economic Trends Demand a Change in the Law?*, 41 IND. L.J. 140, 143 (1965).

11 See Andrew A. Schwartz, *Old Enough to Fight, Old Enough to Swipe: A Critique of the Infancy Rule in the Federal Credit Card Act*, 2011 UTAH L. REV. 407, 409.

12 *Id.* at 407.

13 See Steven G. Calabresi & Julia T. Rickert, *Originalism and Sex Discrimination*, 90 TEX. L. REV. 1, 98 (2011).

14 See *Ginsberg v. New York*, 390 U.S. 629, 649–50 (1968).

15 The lowest drinking age in any state is the age of 18. Barbara Kritchevsky, *Whose Idea Was It? Why Violations of State Laws Enacted Pursuant to Federal Mandates Should Not Be Negligence Per Se*, 2009 WIS. L. REV. 693.

16 For a comparative discussion of child marriage, see, e.g., Domenico Francavilla, *Interacting Legal Orders and Child Marriages in India*, 19 AM. U. J. GENDER SOC. POL'Y & L. 529 (2011).

17 See B. Jessie Hill, *Whose Body? Whose Soul? Medical Decision-making on Behalf of Children and the Free Exercise Clause Before and After Employment Division v. Smith*, 32 CARDOZO L. REV. 1857 (2011).

18 Parental permission is required. See, e.g., Amy Beth Abbott, *Child Soldiers—The Use of Children as Instruments of War*, 23 SUFFOLK TRANSNAT'L L. REV. 499 (2000).

A. *Childhood and Contracts*

“If a cyber-consumer is a child, then [contractual] acceptance. . . might not be valid. This is a difficult issue. . .”¹⁹

The dominant body of law on the Internet is—and has always been—contract law. Yet, as I have argued elsewhere, courts have been slow to clarify doctrinal tensions that arise due to the novelty of digital spaces.²⁰ One such doctrinal deficiency exists with respect to the contract doctrine of “infancy” or “minority.”

1. Minority in Physical Space Contracts

Contract law has traditionally been a legal space that offers a “childhood exception” which crafts different rules for children as contracting parties. Through the doctrine of minority, contract law allows children greater leniency in disavowing their contractual obligations. In general, the minority doctrine allows “children,” meaning individuals who have not reached the legal age of capacity, to avoid liability under their executed contracts.²¹ Though not without controversy,²² this minority or infancy doctrine has long been employed in the common law.²³ In other words, a policy decision has been made in contract law to exempt childhood: courts and legislatures decided that children are in need of an additional level of protection in their contracting, even if this protection comes at the expense of the other party to the contract. However, contract law in digital spaces has not yet demonstrated an extension of this thread of child protection.

19 Eugene Volokh, *Freedom of Speech and Information Privacy: The Troubling Implications of a Right to Stop People From Speaking About You*, 52 STAN. L. REV. 1049, 1063 (2000).

20 Andrea M. Matwyshyn, *The Law of the Zebra*, BERKELEY TECH. L.J. (forthcoming 2013).

21 See E. ALLAN FARNSWORTH, CONTRACTS § 4.3 (4th ed. 2004); Cheryl B. Preston & Brandon T. Crowther, *Infancy Doctrine Inquiries*, 52 SANTA CLARA L. REV. 47, 47 (2012). See generally Robert G. Edge, *Voidability of Minors' Contracts: A Feudal Doctrine in a Modern Economy*, 1 GA. L. REV. 205 (1967) (discussing the voidability of minors' contracts and the success of the doctrine).

22 Particularly in connection with the extension of the minority defense to technology contracts, critics might argue that children demonstrate superior technology proficiency to that of many adults. However, here the issue is not understanding the technology intermediation of the contract but rather understanding the nature of contractual obligations, regardless of whether they are presented online or offline.

23 See FARNSWORTH, *supra* note 21, § 4.4; Simon Goodfellow, *Who Gets the Better Deal?: A Comparison of the U.S. and English Infancy Doctrines*, 29 HASTINGS INT'L & COMP. L. REV. 135, 137 (2005).

Specifically, a minor can generally disaffirm a contract either before or a reasonable time after reaching majority,²⁴ either expressly by words or implicitly by conduct.²⁵ In the language of one court, the minority doctrine serves to protect minors from “foolishly squandering their wealth through improvident contracts with crafty adults who would take advantage of them in the market place.”²⁶ The primary reasons articulated by courts for this protection include children’s lower sophistication in transactions²⁷ and their lack of fully developed cognitive abilities.²⁸

Although in general minors can ask a court to set aside their contractual agreements, certain exceptions are frequently applied by courts. These exceptions include contracts for “necessaries”²⁹—such as food and lodging³⁰—and contractual relationships where the minor retains a benefit. In these necessities cases, courts ask whether the minor received a benefit that is unreturnable or, in the case of goods, they are returned in substantially worse shape than at time of purchase.³¹ Other types of exceptions to the minority doctrine recog-

24 See FARNSWORTH, *supra* note 21, § 4.4, at 222; Victoria Slade, Note, *The Infancy Defense in the Modern Contract Age: A Useful Vestige*, 34 SEATTLE U. L. REV. 613, 617 (2011).

25 See FARNSWORTH, *supra* note 21, § 4.4, at 222. The minor must disaffirm the entire contract and do so no later than within a reasonable time after reaching the age of majority. *Id.*

26 *Halbman v. Lemke*, 298 N.W.2d 562, 564 (Wis. 1980). In general, minority capacity cases historically fell into three categories—void, when clearly prejudicial to the child; voidable, when possibly in the child’s best interest; and valid, when clearly in the child’s best interests. This approach has been simplified, allowing minors to disavow contracts executed prior to the age of capacity.

27 *Id.*

28 *Id.* at 564–65.

29 The definition of a necessary varies based on a child’s particular life circumstances and the child’s ability to obtain the items from legal guardians. See FARNSWORTH, *supra* note 21, § 4.5, at 225–26.

30 Necessaries are generally defined by courts as those items required by a child for sustenance and not provided by a parent. Whether the subject matter of the contract constitutes a “necessity” is not a bright line. In most cases, this is a question of fact depending on the minor’s station in life. Even in the case where the contract is found to be for necessities, the minor’s liability is generally not based on the express terms of the agreement. Instead, liability is imposed on a quasi-contractual basis making the minor liable only for the reasonable value of the goods or services. *Id.*

31 If possible, most jurisdictions have laws that hold a minor accountable in some fashion for the benefits he received under the contract by way of restitution, but the extent of this accountability varies. Most states take the position that the minor only has to account for the benefits still in his possession. The remaining losses are considered “the result of the very improvidence and indiscretion of infancy which the law

nized by some courts include contracts ratified after majority,³² the depreciation rule,³³ the status quo rule,³⁴ the emancipation doctrine,³⁵ the business rule,³⁶ certain state and subject matter specific types of agreements,³⁷ and some situations where the minor misrepresented age.³⁸

While a majority of the exceptions involve relatively low probability events, this last exception regarding misrepresentation occurs more frequently and presents a particularly complicated set of questions: courts diverge in their analysis. In cases relating to an allegation of misrepresentation of age by a minor during the execution of the contract, some courts find that the adult party relies upon a misrepresentation with respect to the minor's age, and, ergo, the defense of minority should be defeated.³⁹ Of the states that recognize this exception, some require the misrepresentation to be in writing. However, other jurisdictions retain the right of the minor to disavow a contract even in instances where a minor affirmatively misrepresents her age.⁴⁰ These jurisdictions assert this aggressively child-protective posture even if misrepresentation is needed: they argue that a minor's

has always in mind." *Id.* at 225 (quoting *Utterstrom v. Myron D. Kidder, Inc.*, 124 A. 725, 726 (Me. 1924)).

32 Once a minor reaches the age of majority, an express or implied ratification of the contract made while he was a minor cuts off the power to disaffirm. *See id.* § 4.4, at 223. Interestingly, few courts have determined that a delay in seeking to disaffirm as an adult is unreasonable without actual reliance by the other party.

33 *See id.* § 4.5, at 224.

34 *Id.*

35 Emancipated minors would not be able to handle their general affairs as adults without losing the protection of the minority capacity doctrine. Merchants would be hesitant to contract with them otherwise. *See id.* § 4.4.

36 A few states have exceptions for merchant minors engaged in business as adults. The argument in these jurisdictions is that if a minor possesses the requisite level of sophistication to operate a commercial enterprise, the minor does not warrant the protection of contract. *See id.* § 4.5. In some states the general statute of limitations for contract actions further limits minors' ability to disavow agreements. For example, Florida does not toll the statute of the limitations of five years for intra-state claims by minors and retains the timeframe dictated by other states in causes of action arising in another state.

37 *Id.* § 4.5. In addition to the generally-recognized exceptions discussed above, various states have enacted statutes that carve out exceptions limiting children's ability to disaffirm for certain transactions on policy basis, such as educational loans and contracts for insurance. *Id.* § 4.4.

38 *See id.* § 4.5.

39 *Id.* New Jersey is one such state.

40 *Id.*

intentional falsehood is merely yet another indication of immaturity and lack of capacity to comprehend a contract.⁴¹

Other bodies of law, which arise less frequently in digital contexts, similarly follow the developmentally-sensitive approach of contract and also include childhood exceptions. In tort law, children are held to standards commensurate with their age,⁴² intelligence, and experience to determine whether conduct was tortious.⁴³ For example, some jurisdictions have a rebuttable presumption that minors below the age of adolescence are incapable of acting negligently.⁴⁴ In criminal law, child offenders' records are regularly sealed or expunged to allow the child a second chance or fresh start despite criminal errors in judgment.⁴⁵ In labor law, we also deem children worthy of special protection: the Fair Labor Standards Act "generally prohibits the employment of children under eighteen in any occupation detrimental to their well-being or health. In particular, the Act forbids an employer from producing goods for commerce by utilizing oppressive child labor."⁴⁶ In other words, contract's childhood exception is not an aberration; children are presumed by many fields of law to be less mature and rational than adults, and in need of special protection.⁴⁷

41 See Juanda Lowder Daniel, *Virtually Mature: Examining the Policy of Minors' Incapacity to Contract Through the Cyberscope*, 43 GONZ. L. REV. 239, 248-49 (2008).

42 However, in some jurisdictions, a minor who misrepresents his age during contracting may be held liable in tort for misrepresentation. See *id.* at 248.

43 In general, many states view children over the age of seven as responsible for the harm resulting from their conduct and statutorily attribute minors' conduct to their parents. See Randall K. Hanson, *Parental Liability for Torts of Children: Balancing the Rights of Victims and Parents*, 9 MIDWEST L. REV. 77 (1990).

44 The majority of jurisdictions do not have a fixed age below which a child is conclusively presumed incapable of negligence. Instead, it is a question of fact generally reserved for the jury. See generally Lisa Perrochet & Ugo Colella, *What a Difference a Day Makes: Age Presumptions, Child Psychology, and the Standard of Care Required of Children*, 24 PAC. L.J. 1323 (1993) (exploring the rationales behind different standards of care and liability for minors in tort law).

45 See generally Patricia Soung, *Social and Biological Constructions of Youth: Implications for Juvenile Justice and Racial Equity*, 6 NW. J. L. & SOC. POL'Y 428 (2011) (discussing the treatment of children offenders in the legal system).

46 Jessica Krieg, *There's No Business Like Show Business: Child Entertainers and the Law*, 6 U. PA. J. LAB. & EMP. L. 429, 431 (2004) (quoting Erica Siegel, Note, *When Parental Interference Goes Too Far: The Need for Adequate Protection of Child Entertainers & Athletes*, 18 CARDOZO ARTS & ENT. L.J. 427, 442 (2000)).

47 Generally, this presumption must then be overcome by strong competing interests, which would warrant their treatment as adults. However, copyright offers no such presumption of child protection.

2. Minority in Digital Contracts

Despite Congress's express intention that digital contracts and physical space contracts be treated with parity,⁴⁸ the doctrine of minority has not been extended universally to digital spaces. As the introduction to this Article asserts, child protection has been a cause celebre for Internet regulation—both criminal⁴⁹ and commercial. Minors have been participants in the digital economy since its beginning,⁵⁰ and the earliest⁵¹ commercial data protection statute involved protection for children's data.⁵² Yet, Congressional interest in children's digital contracting and its implications stalled thereafter.

To date, Congress has made only limited forays into the space of child protection and online contracting. One attempt was made in the 1990's with the Children's Online Privacy Protection Act, a statute now viewed by most scholars, businesses, and child welfare experts as well-intentioned but misguided in its approach.⁵³ The Children's Online Privacy Protection Act ("COPPA") requires that websites targeting children under the age of thirteen provide notice of privacy practices and obtain verifiable parental consent prior to collecting data from a child.⁵⁴ In this manner, the statute adopted a contract-

48 The E-Sign Act articulated its mission as a step toward creating parity for digital and physical space contracts. For a discussion of E-Sign, see, e.g., Robert A. Cook & Nicole F. Munro, *Giving Consumer Disclosures On-Line: Is E-Sign the Path to the Paperless Loan?*, 57 BUS. LAW. 1187 (2002).

49 See, e.g., Emily Vander Wilt, *Considering COPA: A Look at Congress's Second Attempt to Regulate Indecency on the Internet*, 11 VA. J. SOC. POL'Y & L. 373, 376 (2004).

50 For example, in the early 1990s when email accounts were first issued, college freshmen—some of whom were not yet over 18—received access to the Internet through their universities. And, as more households gained Internet access, children shared in these family Internet connections.

51 Although HIPAA was passed prior to COPPA, COPPA became effective first. See generally Andrea M. Matwyshyn, *Material Vulnerabilities: Data Privacy, Corporate Information Security, and Securities Regulation*, 3 BERKELEY BUS. L.J. 129 (2005) (discussing HIPAA and COPPA).

52 Children's Online Privacy Protection Act, 47 U.S.C. § 231 (2006).

53 For an insightful critique of COPPA and its relationship to children and privacy in the digital economy, see Anita Allen, *Minor Distractions: Children, Privacy and E-Commerce*, 38 HOUS. L. REV. 751 (2001). See also, Andrea M. Matwyshyn, *Technology, Commerce, Development, Identity*, 8 MINN. J.L. SCI. & TECH. 515, 546–48 (2007).

54 The statute also empowers the Federal Trade Commission (FTC) to promulgate additional regulations to require the operator of a website subject to COPPA to establish and maintain reasonable procedures "to protect the confidentiality, security, and integrity of personal information collected from children." Specifically, COPPA stipulates that prior to collection of data from a child under thirteen, a website "operator" must obtain "verifiable parental consent." Children's Online Privacy Protection Act, 15 U.S.C. §§ 1651–6506 (2006).

like approach to children's data protection and accountability—it mandated disclosure of terms of service and data handling and obtaining affirmative consent from an individual with contractual capacity. Unfortunately, however, as I have argued elsewhere,⁵⁵ the statute is fatally flawed both for reasons of technological specificity and the selection of the somewhat arbitrary age of thirteen.⁵⁶ In particular, using the age of thirteen as the ostensible age of consent for contracting in digital spaces is irreconcilable with the broader contract approach of minority doctrine. As such, COPPA set up an unsustainable tension between itself and broader contract law. Further, as later sections of this Article will argue, using the age of 13 as the magic end of child protection online is developmentally illogical when viewed in context of children's self-disclosure and tinkering behaviors. However, regardless of COPPA's efficacy, it can be said that contract law in digital spaces has also started to embody a type of childhood exception, yet it has stopped short of reconciling digital and physical space contract law.

B. *Childhood and Copyright Law*

The second dominant body of law in digital spaces is copyright law. Whereas contract and other bodies of law have expressly recognized the developmental differences between children and adults, copyright has never adopted a childhood-specific approach.⁵⁷ Copyright generally adopts a one-size-fits-all approach, and no childhood exception currently exists in copyright. Why has copyright evolved in such an unforgiving manner toward childhood? Some noted copyright scholars might argue that a childhood exception has historically seemed unnecessary: copyright holders have traditionally viewed pursuing child infringers as a waste of time because children generally lack substantial resources to satisfy judgments.⁵⁸ Another explanation

55 See Matwyshyn, *supra* note 53, at 547.

56 *Id.*

57 Instead, prior to The No Electronic Theft (NET) Act, copyright examined the extent of noncommercial use or whether things of value were acquired by the alleged infringer. However, after the NET Act, the law goes so far as to criminalize copying for purposes of commercial advantage or private financial gain, which includes the receipt of "anything of value." With such a broad definition, it seems possible to construe almost any transaction as being for indirect commercial benefit or private financial gain. See, e.g., Eric Goldman, *A Road to No Warez: The No Electronic Theft Act and Criminal Copyright Infringement*, 82 OR. L. REV. 369, 371, 373 (2003).

58 Interview with Wendy Gordon, Professor of Law, Boston University (May 2011) (on file with the author).

may be that childhood is simply one of the empty spaces in copyright, as Professor Julie Cohen has argued in other contexts.⁵⁹

Regardless of the cause, the Internet appears to have caused a meaningful shift in copyright litigation dynamics, triggering in turn a need for copyright to consider childhood. A caselaw search reveals evidence consistent with this analysis: few cases appear before 1999 that involve children as copyright infringement defendants. However, after 1999, as various Internet filesharing litigation by the Recording Industry Association of America (RIAA) demonstrates, this traditional view of ignoring children as possible copyright defendants has now changed.⁶⁰ Regardless of whether children tend to lack resources, children are now sometimes added as defendants in copyright cases.⁶¹

Meanwhile, in caselaw where digital copyright and contract law conflict, courts have been hesitant to extend the doctrine of minority. For example, in *A.V. ex rel. Vanderhye v. iParadigms, LLC*,⁶² a court in the Eastern District of Virginia applied the benefits exemption⁶³ to minors' disavowal of clickwrap terms and conditions of use⁶⁴ and denied the minors' claims of copyright infringement by iParadigms LLC—a decision subsequently upheld in relevant part by the Fourth Circuit Court of Appeals.⁶⁵ The case involved high school students in

59 See, e.g., Julie E. Cohen, *Creativity and Culture in Copyright Theory*, 40 U.C. DAVIS L. REV. 1151 (2007).

60 The reason for this shift in rights-holder enforcement stems partially from two critical technology driven dynamics—first, the ease and legal ambiguity of datamining to unearth digital infringers as compared to real space infringers, and, second, the commercial reality that most computers and Internet access are purchased by parents who then permit their children to use both.

61 See, e.g., *12-Year-Old Settles Music Swap Lawsuit*, CNN (Feb. 18, 2004), http://articles.cnn.com/2003-09-09/tech/music.swap.settlement_1_riaa-cary-sherman-kazaa?s=PM:TECH; Anders Bylund, *RIAA Sues Santangelo Children*, Ars Technica (Nov. 3, 2006), <http://arstechnica.com/business/news/2006/11/8150.ars>.

62 544 F. Supp. 2d 473 (2008), *aff'd in part, rev'd in part*, 562 F.3d 630 (4th Cir. 2009).

63 *Id.* at 481.

64 The contract read as follows: “You grant iParadigms a non-exclusive, royalty-free, perpetual, world-wide, irrevocable license to reproduce, transmit, display, disclose, archive and otherwise use your Communications on the Site or elsewhere for our business purposes. We are free to use any ideas, concepts, techniques, know-how in your Communications for any purpose, including, but not limited to, the development and use of products and services based on the Communications Your sole remedy for dissatisfaction with the site, site-related services, and/or hyperlinked web sites is to stop using the site and/or those services.” 562 F.3d at 645–46.

65 *Id.* at 486. The Fourth Circuit reversed the lower court on the computer intrusion analysis in the case and found that a basis may exist for a claim against the children under the Computer Fraud and Abuse Act: because the company was unaware that a password posted on the Internet allowed users to register for various accounts.

Fairfax, Virginia, and Arizona who were required to submit school assignments through an antiplagiarism program operated by Turnitin, a subsidiary of iParadigms, which archived minors' submissions for later use.⁶⁶

Undoubtedly, one of the court's concerns in the *iParadigms* case was still a different Internet-caused dynamic: the struggle of the school in maintaining order and honest learning in a digital world which presents new opportunities for student plagiarism. A second concern in the court's mind may have involved assisting (adult) entrepreneurs in building data-intensive business models. Although both of these concerns are valid, they should not override basic contract law and copyright law concerns regarding whether the access to the underlying material was legitimately granted by the creator, even when that creator is a child.

The *iParadigms* case was wrongly decided for multiple reasons of contract law. Three contract law arguments were raised by the children—first, that the agreement was an unenforceable adhesion contract; second, that the contract was voidable by minors on the basis of the doctrine of minority; and third, that the express disclaimers of the contract's archiving provisions, which were written on the children's work, modified the agreement. The first argument pertaining to the broader issues of technology-mediated contracts, consumer consent and adhesion concerns I have discussed elsewhere,⁶⁷ and these issues remain concerning, but not child-specific. With respect to the second argument, the district court opined that the minority doctrine did not offer the children an opportunity for disavowal, asserting that the students retained the benefits offered by the software program and, hence, the minors' disavowal was not appropriate: “[The students] received a grade from their teachers, allowing them the opportunity to maintain good standing in the classes in which they were enrolled. Additionally, Plaintiffs gained the benefit of standing to bring the present suit.”⁶⁸ Particularly when the students are required by law in

In error, the company had allocated resources to determining whether a computer intrusion had occurred.

66 *Id.* at 477–78.

67 See Andrea M. Matwyshyn, *Technoconen(t)sus*, 85 WASH. U. L. REV. 529 (2007).

68 *Id.* The court went on to characterize the use of the information by iParadigms as “transformative” and protected fair use. *Id.* at 483. On appeal to the Fourth Circuit, the court agreed, stating “[t]he district court, in our view, correctly determined that the archiving of plaintiffs’ papers was transformative and favored a finding of ‘fair use.’ iParadigms’ use of these works was completely unrelated to expressive content and was instead aimed at detecting and discouraging plagiarism.” *Id.* at 460.

many instances to attend school⁶⁹ and, ergo, submit homework assignments, the retained benefit argument is tenuous at best. The argument is particularly tenuous with respect to the archiving provisions of the agreement: it is not entirely clear how the company's generating revenue for itself from archiving the children's work benefits these particular children. Requiring that the children grant a perpetual, irrevocable license to use their work against their will seems of dubious benefit to the children. Further, the standing argument made by the court is somewhat inapposite: contractual privity is not a requirement for bringing a copyright infringement claim, which was the primary allegation in the children's suit. Disavowal of the contract including its archiving terms by the minors should have been deemed consistent with existing minority doctrine precedent.

The children's third argument—that their express disclaimers on their homework asserting that they did not agree to the terms of archiving their work—similarly holds merit, at least in situations where the execution of the agreement and the submission happen concurrently. Even assuming no disavowal, the student modifications to the user agreement through a concurrent particularized set of terms on their homework should have been analyzed by the court as a modification to the original user agreement and enforced.⁷⁰ In a case where personalized modified terms are included in a negotiation of a form contract, those personalized terms—particularly if included by a consumer—usually are construed by courts to be included in the final agreement.⁷¹ Since the limitations of iParadigms' digital contract presentation did not allow for modification on the agreement itself, a modification of terms on a concurrent document seems entirely consistent with contract doctrine and the approach of UCC Article 2. Returning now to the copyright arguments raised in this case—if the courts erred in the contract law analysis and the original agreement is indeed either voidable in the discretion of the minor or on the other hand, enforceable and breached by the company, this potentially calls into question the courts' subsequent copyright analysis.⁷² As this case

69 For a discussion of compulsory education, see e.g., Rebecca Aviel, *Compulsory Education and Substantive Due Process: Asserting Student Rights to a Safe and Healthy School Facility*, 10 LEWIS & CLARK L. REV. 201 (2006).

70 Susan M. Chesler, *Drafting Effective Contracts: How to Revise, Edit, and Use Form Agreements*, 19 BUS. L. TODAY 35, 35 (2009).

71 *Id.*

72 The courts' analysis also arguably signals skepticism toward children as creators of equal parity as adults: the courts' analysis is potentially out of line with what might have happened if the children were adults. For example, in the work-for-hire context in the absence of clear transfer of rights in created intellectual property, courts err on

illustrates, use of an Internet application by children has caused the childhood exception from contract law to come into direct conflict with a different conceptualization of childhood—that of copyright, a field without a childhood exception—and this conflict has triggered doctrinal confusion.

C. *Childhood and Speech*

A third dispositive body of law in digital spaces is the law of the First Amendment. While contract law tends to protect childhood and copyright tends to ignore it, the First Amendment caselaw adopts a hybrid approach. The speech of children is generally afforded the full panoply of First Amendment protections, however, in limited contexts, children's speech receives a lower level of protection than does the speech of adults. Until the arrival of digital media, the school environment has traditionally presented the primary setting where children's speech faces restriction: the underlying concern with protecting children's expression and learning sometimes sits in tension with maintaining order for the benefit of the school community as a whole.

1. Children and Speech in Physical Spaces

The traditional First Amendment analysis of children's speech balances freedom of expression with the need for order in physical spaces. In *Tinker v. Des Moines Independent Community School District*,⁷³ the Supreme Court found that a group of students who chose to wear black arm bands to school as an act of protest of the Vietnam War engaged in a permissible exercise of their First Amendment rights. The Court held that students' political expression may not be suppressed by school officials unless they conclude that it will "materially and substantially disrupt the work and discipline of the school."⁷⁴ The Court stated that neither students nor teachers "shed their constitutional rights to freedom of speech or expression at the schoolhouse gate"⁷⁵ but "emphasized the need for affirming the comprehensive authority of the states and of school officials, consistent with fundamental constitutional safeguards, to prescribe and control conduct in the schools."⁷⁶ The Court characterized the students' speech as "a

the side of protecting the (adult) creator's interest rather than the asserted interest of the alleged assignee.

⁷³ 393 U.S. 503 (1969).

⁷⁴ *Id.* at 513.

⁷⁵ *Id.* at 506.

⁷⁶ *Id.* at 507.

silent, passive expression of opinion, unaccompanied to buy any disorder or disturbance”⁷⁷ and the school district’s desire to censor it as the “mere desire to avoid the discomfort and unpleasantness that always accompany an unpopular viewpoint” or a “wish to avoid the controversy which might result from the expression.”⁷⁸

However, the Court has also held that the First Amendment does not prevent schools from encouraging habits and manners of civility through requiring certain modes of expression on school property be avoided as “inappropriate and subject to sanctions.”⁷⁹ Similarly, the Court has deemed schools to hold the right to exercise editorial control over school newspapers and that such discretion does not violate the First Amendment.⁸⁰ Thus, the Court walks a line between preserving students’ self-realization through their speech and schools’ interest in maintaining civility and order. The Internet further complicates this line for the childhood paradigm embodied in free speech caselaw.

2. Children and Speech in Digital Spaces

Since students have received widespread access to the Internet in their homes and on mobile devices, schools have faced several new categories of student conduct challenges, and previous challenges have been exacerbated. Apart from the plagiarism concerns that the court discussed in the *iParadigms* case,⁸¹ for example, schools have found themselves to be grappling with several categories of “problem” speech with physical space consequences—digital materials ridiculing teachers and administrators, cyberbullying of students by other students, and other Internet speech by students in digital spaces that may impact school order.

77 *Id.* at 508.

78 *Id.*

79 *Bethel Sch. Dist. No. 403 v. Fraser*, 478 U.S. 675, 683 (1986); *see also Morse v. Frederick*, 551 U.S. 393 (2007) (holding that a principal’s removal of a banner reading “Bong hits 4 Jesus” at a school sanctioned and supervised event did not constitute a violation of the students First Amendment rights even though the student was across the street from the school and not physically on school property during the time he was holding the banner).

80 However, in connection with a student run publication not sponsored by the school where “all but an insignificant amount of relevant activity was deliberately designed to take place beyond the schoolhouse gate,” the Second Circuit concluded that a suspension for lewd content of the publication violated the students’ First Amendment rights and was not equivalent to, for example, breaking into the principal’s office or a teacher’s desk. *See Thomas v. Bd. of Educ.*, 607 F.2d 1043, 1050 (2d Cir. 1979).

81 *A.V. v. iParadigms*, 562 F.3d 630 (4th Cir. 2009).

In *Layshock ex rel Layshock v. Hermitage School District*⁸² the Third Circuit considered the questions surrounding the suspension of a 17-year-old senior in connection with his creation of a parody profile of his principal on MySpace using a photograph that the minor copied from the school district website.⁸³ The faux profile contained statements about alcohol and drug use, promiscuity, anatomical deficiencies, and sexual orientation.⁸⁴ The minor then shared the profile with other students who passed it on to a wider audience.⁸⁵ At least four other students subsequently posted similarly unflattering profiles of the principal on MySpace.⁸⁶ The minor also accessed the MySpace profile he created of the principal using a school computer in a classroom, at which point a teacher caught a glimpse of the profile.⁸⁷

On appeal⁸⁸ the Third Circuit stated that “it would be an unseemly and dangerous precedent to allow the state in the guise of school authorities to reach into a child’s home and control his/her actions there to the same extent that they can control the child when he/she participates in school sponsored activities [W]e therefore conclude that the District Court correctly ruled that the district’s response to [the minor’s] expressive conduct violated the First Amendment guarantee of free expression.”⁸⁹ On the school district arguments that the minor’s speech was not protected because it was

82 650 F.3d 205 (3d Cir. 2011).

83 *Id.* at 208.

84 *Id.* at 209.

85 *Id.*

86 *Id.*

87 *Id.* School administrators lacked the technology skills to block students revisiting the MySpace page on school property because the Technology Coordinator was on vacation at the time. Instead administrators limited students’ access to supervised machines. *Id.*

88 At a hearing the minor was found guilty of all charges with respect to the disciplinary code violations and given a ten day out of school suspension as well as being placed in an alternative education program for the remainder of the year, being banned from all extracurricular activities, and not being allowed to participate in his graduation ceremony. *Id.* at 210. The minor’s parents were advised that the school district was also considering expulsion, at which point they filed suit alleging that the district’s punishment of the minor violated his rights under the First Amendment, that the district policies and rules were unconstitutionally vague and/or overbroad both on their face and as applied to the minor, and that the district’s punishments of the minor interfered with the parents’ rights of determining how to best raise and educate their child. *Id.* On a motion for summary judgment the court ruled in favor of the minor and his parents on the First Amendment claim, but ruled against them on the 14th Amendment due process claims. *Id.* at 211. Both parties appealed. *Id.* at 215.

89 *Id.* at 216.

vulgar, lewd, offensive, and ended up inside the school community, the court highlighted the fact that the unflattering profiles caused no foreseeable and substantial behavioral disruption of the students in the school and again deemed the student's punishment an inappropriate exercise of school discretion that infringed on students' First Amendment rights.⁹⁰ The court also ruled that the District Court did not err in dismissing of the parents' claim of a violation the 14th Amendment right to raise their child.⁹¹ Although both lower courts and legal commentators hoped that the Supreme Court might review this case and grant certiorari, the Court did not accept the case onto its docket.⁹²

"Problem" speech is not limited to principal parody sites. For example, some schools are worried about gang and other violent activity seeping into the school. Because of this concern, teachers, and administrators have sometimes begun to monitor students' social network posts⁹³ and YouTube videos, and sometimes have discovered bragging about school violence. Even videos of violence in school hallways now appear on social media sites.⁹⁴ In particular, questions

90 *Id.* at 222.

91 *Id.*

92 David Kravets, *Supreme Court Rejects Student Social-Media Cases*, WIRED.COM (Jan. 17, 2012), <http://www.wired.com/threatlevel/2012/01/scotus-student-social-media/>. As this case demonstrates, schools struggle to understand where the line exists between discipline inside and outside the schoolhouse gates for purposes of maintaining behavioral control over students and their Internet speech. Schools have responded through novel methods of attempting to maintain behavioral control, but these methods have sometimes gone awry. Further, as legislatures worry about teachers taking advantage of students with the help of the Internet, sometimes overzealous legislation in this space additionally complicates the dynamic.

93 For example, in Georgia, two teens were arrested in connection with threats posted on MySpace.com that stated that they wanted to shoot people at the school. See *School Threats, School Violence Rumors, School Text Message Rumors, & Threat Assessment*, NAT'L SCH. SAFETY AND SEC. SERVS., <http://www.schoolsecurity.org/trends/threats.html> (last visited May 22, 2012).

94 See, e.g., Vernon Odom, *Girl Gang Violence at Phila. School Caught on Tape*, ABC (Jan. 6, 2011), <http://abclocal.go.com/wpvi/story?section=News/local&id=7882169>. It is this ambiguous line in student-teacher relations in digital spaces that has moved some legislatures to act. Recently the state of Missouri experimented with a new law that prohibited teachers from privately chatting with students over social network sites such as Facebook. Although the law, the Amy Hestir Student Protection Act, initially passed, an outcry from teachers resulted in the legislature voting to repeal the contentious portion. SCS/SB 54 Amy Hestir Student Protection Act, Jul. 14, 2011, available at http://www.senate.mo.gov/11info/BTS_Web/Bill.aspx?BillID=4066479&SessionType=R. The law was Missouri's attempt to address the various scandals and complaints involving teachers who misuse social media to become inappropriately close to their students. Kevin Murphy, *Missouri Teachers Sue to Block Social*

of cyberbullying have galvanized both legislators and school administrators to address forms of bullying that occur through children's speech in digital spaces but seep into physical space school environments. A number of student suicides have occurred allegedly as a result of online bullying by classmates, and a significant number of states have either passed cyberbullying legislation or amended prior legislation to include digital harassment.⁹⁵ Some state statutes go so far as to require that coordinators be appointed inside schools to ensure that all cyberbullying complaints are addressed.⁹⁶ However, the line where well-intentioned involvement by teachers and administrators turns into privacy violation of students' lives is also unclear.⁹⁷

Media Law, REUTERS (Aug. 20, 2011, 1:48 PM), <http://www.reuters.com/article/2011/08/20/us-schools-missouri-suit-idUSTRE77J1QW20110820>. However, some teachers believe that social media can be a useful educational tool and provides a novel way to connect to their students; these teachers believe their use of social media assists students in learning using a comfortable technological space. *See id.*; Jennifer Preston, *Rules to Stop Pupil and Teacher From Getting Too Social Online*, N.Y. TIMES (Dec. 17, 2011), http://www.nytimes.com/2011/12/18/business/media/rules-to-limit-how-teachers-and-students-interact-online.html?_r=1. The Missouri State Teachers Association sued the state over the law and, two days before the law was to become effective, a Cole County Circuit Court issued an injunction against the bill, noting the chilling effects on free speech of both teachers and students. *Id.* The revised version of the law requires each school district to draft its own social media policy by March 1, 2012. *Id.* Numerous school boards across the country are facing similar questions in the context of student teacher digital communications. School boards in California, Florida, Georgia, Illinois, Maryland, Michigan, New Jersey, New York, Ohio, Pennsylvania, Texas, and Virginia have either recently altered or rewritten their policies to address digital media questions. *Id.*

95 One of the most famous cases involved a 13-year-old named Megan Meier who was bullied online by former classmates and an adult. *See, e.g.*, MEGAN MEIER FOUNDATION, <http://www.meganmeierfoundation.org/>. Posing as a teenage boy who feigned interest in her, these individuals verbally abused Megan Meier, who eventually took her own life. *Id.* Subsequently the adult who participated in the bullying was put on trial for computer intrusion and was convicted by a jury, though the verdict was ultimately set aside by the judge. *United States v. Drew*, 259 F.R.D. 449 (C.D. Cal. 2009). Megan Meier's death provided the catalyst for Missouri to pass cyberbullying legislation. *See, e.g.*, MEGAN MEIER FOUNDATION, <http://www.meganmeierfoundation.org/>.

96 *See* Linda Conner Lambeck, *New Cyberbullying Law Forces Schools to Intervene*, CONN. POST (October 8, 2011), <http://www.ctpost.com/local/article/New-cyberbullying-law-forces-schools-to-intervene-2209625.php>.

97 In fact, some cases of student monitoring are extreme. It is now becoming more common in some school districts to issue laptops to students to assist in their learning; however, schools have sometimes used the theft retrieval systems on these machines to monitor the behavior of students while at home. In one recent set of cases, a school district in suburban Philadelphia monitored students' conduct remotely by activating the webcams on school issued laptops. Parents had executed a consent document on behalf of their students that was presented in connection with

In these ways, the lines between public and private space for students and teachers become further blurred. When the schoolhouse gates remain open and extended through the use of social media, the boundaries of protection for children's speech that have been articulated in previous case law are called into question. These technology challenges faced by schools today hinge not only on the pace of technological change but also, in particular, on the doctrinal confusion that exists in law around data privacy and information security—the legal space where contract, copyright/IP, and speech converge.

D. *Childhood and Privacy/Information Security Law*

As the previous sections have explained, while traditional contract doctrine protects children from others through the “childhood exception” of the minority doctrine, digital contract law has not expressly expanded the reach of the minority doctrine to virtual spaces. Meanwhile, copyright has always treated children essentially as adults. These two dynamics intersect in the context of children's free speech, where schools may limit speech in order to maintain order and protect children from each other within the schoolhouse walls.

Privacy and information security law concerns now take these legal constructions of childhood and complicate them still further: privacy and information security queries blend contract, intellectual property, and speech questions with additional novel child protection concerns. In other words, the legal uncertainty of consequences for

the issuing of the laptop. Although parents consented to the students' use of the laptop, parents became enraged to find out that this consent ostensibly gave the school district permission to monitor their children in private spaces, such as their bedrooms. In the course of several cases filed surrounding this incident of remote webcam school monitoring of students in their homes, thousands of pictures of high school students were unearthed in discovery, many of which included pictures of students in “private” behaviors—various states of undress, sleeping, studying while believing themselves to be unobserved. The school district in question in Lower Merion Township admitted that it captured thousands of WebCam photographs and screenshots from student laptops allegedly as part of a misguided attempt to locate lost machines. In one filed case in particular, *Robins v. Lower Merion Township School District*, the plaintiff alleged that the school used tracking technology to spy on him inside his home. During discovery evidence came to light that he was photographed over 400 times during a two-week period, sometimes as he slept. According to the pleadings, the student became aware of the photographs being taken of him remotely when a vice principal referenced a photo that included what the administrator alleged was the student engaging in drug use. See, e.g., Mark S. Haltzman et al., *Blake J. Robbins v. Lower Merion School District*, HEARTLAND INST. (Feb. 11, 2010), http://heartland.org/policybot/results/27289/Blake_J_Robbins_v_Lower_Merion_School_District.html. The school district in question settled with the various plaintiffs in connection with these tracking programs on school issued laptops. *Id.*

children's behaviors in digital spaces becomes magnified in privacy and information security contexts: because privacy and information security law essentially incorporate by reference contract and intellectual property law and the subject matter at issue involves speech, the paradigm conflict presented by those three regimes is also incorporated by reference.

However, privacy and information security queries with respect to children also present two novel sets of concerns. First, in contexts involving privacy and information security concerns, children are exposed due to their immaturity in presentation of self. Children voluntarily disclose large amounts of personal information without understanding consequences, and corporate datamining encourages these disclosure behaviors. Second, children are legally exposed due to their increased comfort with code experimentation, while not necessarily being able to foresee the possible legal consequences of that experimentation. Because technology skills do not map onto chronological age, children may be doubly exposed in privacy and information security law situations, perhaps without having any adult supervisor skilled enough to guide them.

1. Identity Experimentation: The Problem of Overdisclosure

In what is perhaps best described as an unfortunate deficit of judgment, a teen recently posted a publicly viewable invitation to a party at her house on Facebook.⁹⁸ To her surprise, approximately 400 people attended, causing significant damage to the house.⁹⁹ Why did she not foresee this possible consequence?

Children can frequently feel a false sense of safety in digital environments, particularly when accessing the Internet from the security of their own bedrooms. This false sense of security, in turn, commonly leads them to overdisclose information in digital spaces. When coupled with data aggregators' progressively more aggressive mining techniques, the extent of information that becomes available about a particular child quickly becomes substantial.

As I have explained in other work,¹⁰⁰ questions of privacy are inexorably bound up with questions of contract and intellectual property.¹⁰¹ Cases such as the *iParadigms* case are a harbinger of children's

98 See Nick Douglas, *400 Teens Destroy \$8.7 Million Home After Facebook Party Invite*, GAWKER (May 30, 2008), <http://gawker.com/394312/400-teens-destroy-87-million-home-after-facebook-party-invite>.

99 *Id.*

100 See Andrea M. Matwyshyn, *Privacy, The Hacker Way* (draft on file with author)

101 *Id.*

cases to come. Particularly in cases where minors will seek to disavow their agreements with social networking websites, cloud services providers and search engines over privacy concerns, the childhood paradigms of physical space and physical space will clash. Database owners will assert what I have termed elsewhere an “information ownership paradox”—that they possess a copyright interest in their databases of compiled children’s information but simultaneously that the individual children have no residual intellectual property interest.¹⁰²

In particular, it is older teens who are most likely to be vulnerable with respect to the information they overdisclose in online contexts: when we consider phenomena such as the teen “sexting” epidemic,¹⁰³ we realize that it is teens who are perhaps most likely to post content that will prove stigmatizing later. Although many children do not realize it at the time, the digital record of information that they have shared will follow them for the remainder of their lives. Because a great number of employers now use social network profile information for purposes of screening, the students may be denied employment opportunities in later life because of imprudent postings¹⁰⁴ they make as teens, and colleges frequently use social network information

102 For a discussion of these copyright arguments see, e.g., Andrea M. Matwyshyn & Jennifer Mueller, *Code and Creativity* (draft on file with author). The owner of a copyright enjoys “a bundle of exclusive rights” under section 106 of the Copyright Act, *Harper & Row, Publishers, Inc. v. Nation Enters.*, 471 U.S. 539, 546 (1985), including the right to copy, the right to publish, and the right to distribute an author’s work, *see id.* at 547; *see also* 17 U.S.C. § 106 (2006) (also including among fundamental rights in copyrighted works rights to display, to perform, and to prepare derivative works). These rights “vest in the author of an original work from the time of its creation.” *Harper & Row*, 471 U.S. at 547. “‘Anyone who violates any of the exclusive rights of the copyright owner,’ that is, anyone who trespasses into his exclusive domain by using or authorizing the use of the copyrighted work . . . ‘is an infringer of the copyright.’” *Sony Corp. of Am. v. Univ. City Studios, Inc.*, 464 U.S. 417, 433 (1984) (quoting 17 U.S.C. § 501(a)). Databases—if protectable by copyright law—are generally analyzed as compilations. Under the Copyright Act, a compilation is defined as a “collection and assembling of preexisting materials or of data that are selected in such a way that the resulting work as a whole constitutes an original work of authorship.” However, the copyright in the compilation itself does not extend to the underlying materials, and the underlying materials or data may be either protected by copyright, or they may be unprotectable facts or ideas.

103 *See* Amanda Lehnhart, *Teens and Sexting*, PEW INTERNET AND AMERICAN LIFE PROJECT (Dec. 15, 2009), <http://pewresearch.org/assets/pdf/teens-and-sexting.pdf>.

104 *See* Jenna Wortham, *More Employers Use Social Networks to Check Out Applicants*, NY TIMES (Aug. 20, 2009), <http://bits.blogs.nytimes.com/2009/08/20/more-employers-use-social-networks-to-check-out-applicants>.

as the basis for screening for admission as well.¹⁰⁵ Yet, as Part III will argue, these forays in identity building in virtual spaces, while perhaps unfamiliar to older generations, are, nevertheless, today's markers of childhood and need a cushion of privacy.

2. Code Experimentation: Channeling Children's Curiosity and Creativity

The second set of privacy/information security issues relate to children's tinkering with code. Children's development is now inexorably bound up with code and technology,¹⁰⁶ and today's children no longer remember a world without the Internet. Learning to build and break code becomes an increasingly important skillset for their future employment. Learning C++ is perhaps the technology equivalent of learning Spanish. Just as diagramming sentences was deemed important to children's education by many educators in the last century, so too it can be argued that understanding the building and breaking of code will be essential to children's education in this century.

Children have always been part of the code writing and breaking community,¹⁰⁷ and their role is fast becoming officially acknowledged. For example, at a key information security event, DEF CON¹⁰⁸—an event that has existed for twenty years—last year marked the first time that a special section devoted to children was officially included as part of the program. DEF CON Kids, a program intended for “beginning hackers age 8-16,”¹⁰⁹ offered classroom and workshop instruc-

105 See Ryan Lytle, *College Admissions Officials Turn to Facebook to Research Students*, US NEWS (Oct. 10, 2011), <http://www.usnews.com/education/best-colleges/articles/2011/10/10/college-admissions-officials-turn-to-facebook-to-research-students>.

106 This insight comes from work of such theorists as Vygotsky, Bandura and Bronfenbrenner.

107 For example, Bill Gates started his experimentation with code as a teenager. See, e.g., Sue Shellenbarger, *Brat or Budding Genius? Lessons From Bill Gates' Childhood*, WALL ST. J. (Apr. 28, 2009), <http://blogs.wsj.com/juggle/2009/04/28/brat-or-budding-genius-lessons-from-bill-gates-childhood/>.

108 Self-described as “one of the oldest continuous running hacker conventions around, and also one of the largest,” *Official DEF CON FAQ v. 0.95*, DEF CON, <https://www.defcon.org/html/links/dc-faq/dc-faq.html> (last visited Mar. 20, 2012), DEF CON brings together a motley crew of code breaking enthusiasts, information security professionals, criminals, technology policy advocates, academics, and federal agents. From the DEF CON FAQ: “Do criminals go to DEF CON? Yes. They also go to high school, college, work in your workplace, and the government. There are also lawyers, law enforcement agents, civil libertarians, cryptographers, and hackers in attendance.” *Id.*

109 *About*, DEF CON KIDS, http://www.defconkids.org/?page_id=4 (last visited Mar. 20, 2012).

tion on topics such as “Hardware Hacking” and “Google Hacking.” It also included sessions where the attendees could “Meet the Feds” from agencies such as DHS and NSA.¹¹⁰ Although minors have been visible at prior DEF CONs, the launch of a DEF CON Kids¹¹¹ program highlights an important shift in our culture around children and their relationship to breaking and building code. DEF CON Kids and another conference called HacKid¹¹² are a call to those of us working in technology policy and legal circles to recognize that something basic has changed for children.

Guiding children in productive rather than destructive paths with their code breaking and building experimentation needs to be a proactive educational enterprise; but, this is a daunting enterprise when many parents lack sophisticated technology skills.¹¹³ Also, equally importantly, the freedom to experiment that digital spaces offer stimulates creativity and entrepreneurship in children, spurring them to become the next generation of digital entrepreneurs.

It is these two concerns—privacy for identity building and space for creativity—that need to be the hallmark of any future digital childhood paradigm. The next sections begin to build a paradigm of childhood in digital spaces that addresses these two privacy problems children face in digital contexts—maintaining data control and finding a safe space for creative experimentation. In particular, the role of schools should be considered in facilitating future digital childhood paradigms. Because schools sit at the interface of the family and the society, their unique position provides an opportunity for technology education, particularly when individual parents lack the technology proficiency to guide their children’s technology learning.

110 *Classroom*, DEF CON KIDS, http://www.defconkids.org/?page_id=10#sat15 (last visited Mar. 20, 2012).

111 DEF CON KIDS, <http://www.defconkids.org/> (last visited Mar. 20, 2012).

112 “[A] new kind of conference . . . for the entire family—kids aged 5–17 & their parents—in order to raise awareness, excitement and understanding of technology . . . security and engineering and their impact on society and culture,” *FAQ*, HACKID, <http://www.hackid.org/Drupal/faq> (last visited Mar. 20, 2012).

113 Further, the presence of DHS, NSA, and other government agencies at conferences such as DEF CON Kids reminds us that training the next generation of digital defenders is essential to national security. At least two recent major hacks may indicate that other countries already possess sophisticated divisions of military focused on Internet espionage and, potentially, cyberwarfare. Identifying and training an elite corps of soldiers and technology experts for purposes of national defense is growing in importance. See Robert McMillan, *Leaked U.S. Document Links China to Google Attack*, *COMPUTERWORLD*, (Nov. 28, 2010), http://www.computerworld.com/s/article/9198198/Leaked_U.S._document_links_China_to_Google_attack.

II. DEVELOPMENT AND GENERATION C

In their book *Born Digital*, Professors Palfrey and Gasser argue that children are growing up today with technology as an integral part of their existence—as “digital natives.” As such, they are experiencing a fundamentally different childhood than that of their parents.¹¹⁴ “They study, work, write, and interact with each other in ways that are very different from the ways that [their parents] did growing up Major aspects of their lives—social interactions, friendships, civic activities—are mediated by digital technologies. And they’ve never known any other way of life.”¹¹⁵

Palfrey and Gasser point to these Digital Natives being constantly connected to others through technology and meeting and changing friends in more fleeting ways. Similarly they assert that these children view privacy and information sharing differently from their parents and grandparents.

In the process of spending so much time in this digitally connected environment, Digital Natives are leaving more traces of themselves in public places online. At their best, they show off who they aspire to be and put their most creative selves before the world. At their worst, they put information online that may put them in danger, or that could humiliate them in years to come.¹¹⁶

I would argue potentially one step further: a legitimate question exists as to whether many of today’s children are perhaps beginning to perceive their digital reality to be their dominant reality—a reality of their own construction with fewer rules and minimal adult supervision, occasionally reminiscent of *Lord of the Flies*.¹¹⁷ When we think about cases of teen suicide as a result of exchanges on social network sites,¹¹⁸ we start to realize the emotional potency of these digital spaces for children. A legal paradigm for childhood in digital spaces

114 It is worth noting that despite the vast majority of children today growing up as digital natives in the United States, a “digital divide” still limits opportunities for many children in lower income homes and in countries outside the United States.

115 JOHN PALFREY & URS GASSER, *BORN DIGITAL* (2009).

116 *Id.*

117 For example, one social norm on the rise that is troubling to some parents is children’s terminating of romantic relationships through status message changes on Facebook. According to at least one study, approximately ten percent of children have ended a relationship through a status change on Facebook. See Brenna Ehrlich, *Boy Meets Girl: How Facebook Functions in Modern Romance*, MASHABLE (Nov. 19, 2010), <http://mashable.com/2010/11/19/seventeen-facebook-study/>.

118 See, e.g., Jennifer Steinhauer, *Verdict in MySpace Suicide Case*, N.Y. TIMES (Nov. 26, 2008), <http://www.nytimes.com/2008/11/27/us/27myspace.html>.

should be conscious of this context from the child's perspective as well as an adult's.

As the previous section explained, current legal approaches are somewhat deficient in providing a safe space for digital childhood, particularly in the context of privacy and information security challenges. Here, I argue that the correct path to crafting a paradigm for childhood in digital spaces should be a positively framed one that focuses on child development, rather than a harm-based one: children's developmental needs should be at the core of an approach to childhood in digital spaces, rather than punishing them as adults for all the potential harms their experimentation may cause. By structuring the child's developmental health as the centerpoint for building a paradigm, we may avoid some of the tensions of prior approaches to childhood; we instead craft a "breathing space" for the child's growth. Children—particularly today's technologically-fluent children—need a safe space for learning "impression management" and for identity creation, and, meanwhile, our society needs to facilitate digital creativity in these children as the next generation of inventors and entrepreneurs.¹¹⁹

A. *Goffman and the "Digital Native"*

Child development does not happen in a vacuum. As I have argued elsewhere,¹²⁰ the correct paradigm for conceptualizing human development is an ecological and contextualist one in line with the theory of Vygotsky, Bandura, and Bronfenbrenner: children develop in a particular context, and they are influenced by the tools their environment offers.¹²¹ Essentially, development is a historically, culturally, and technologically specific construct—a dialectic conversation between the person and the environment.¹²²

For example, applying a contextualist approach to development, we know that a child with access to a computer and broadband from

119 Although a harm-based framing around defending others from children's conduct in virtual spaces may be warranted in some circumstances, these cases should be viewed as the exceptions, not the dominant focus of an approach to digital childhood. By crafting a safe space for digital childhood, a portion of the harms—such as cyberbullying—may self-mitigate. Thus, the starting point for crafting a paradigm of childhood in virtual spaces must be one that reserves space for children's identity formation and creativity. The next sections explain why and how we might start building a more privacy protective approach in this manner, borrowing lessons from sociology and psychology.

120 See, e.g., Matwyshyn, *supra* note 53.

121 *Id.*

122 *Id.*

age two in the United States will develop in a fundamentally different manner than a child in Zambia whose first Internet access comes through a phone at age sixteen. These children's development is nonlinear¹²³—the first child may demonstrate superior technology skills at age eight to those of the second child at age eighteen. The first child's skills may also significantly outstrip the skills of her parents, and parental supervision of children with superior technology skills presents a significant challenge for even the most diligent parent.

Having established this mechanism of development and the complexity that technology brings, we next turn to the difficult legal questions surrounding childhood identity building, experimentation, and accountability. Two competing dynamics impact children's identity expression in digital spaces with respect to privacy questions—one internal to the child and one external. The first is an internally motivated need for identity building and expression in a community, and the second is the risk that the digital trail of this experimentation will limit future opportunities for the child through generating stigma. It is this set of developmental concerns relating to identity, privacy, and creativity that this section considers using the theory of Erving Goffman.

1. Impression Management: The Bureaucratization of Spirit

The role of identity experimentation and its connection to human development is perhaps most associated with the seminal work of notable sociologist Erving Goffman.¹²⁴ Goffman introduced the concept of “impression management”—where individuals, like actors, attempt to influence a situation by conveying an impression that it is

123 *Id.*

124 Although few applications of Goffman to digital contexts exist in the legal literature, Professor Neil Richards notably applied Goffman to the adult privacy context. Richards argues that

Goffman's insights suggest that intellectual privacy can contribute to self-governance in two related ways. First, psychologically we may have a deep need to relax and relieve the tensions that are a necessary part of public performance. . . . Second, if we are to participate in our public roles as self-governing citizens, we must ensure that the state cannot scrutinize our intellectual dabbings in the controversial or deviant.

See Neil Richards, *Intellectual Privacy*, 87 TEX. L. REV. 387, 406 (2008). For a discussion of Goffman and symbolic interactionism, see, e.g., ALICE MARAWICK & DANAH BOYD, I TWEET HONESTLY, I TWEET PASSIONATELY, available at http://www.tiara.org/blog/wp-content/uploads/2010/07/marwick_boyd_twitter_nms.pdf.

in their interest to convey.¹²⁵ In other words, individuals experiment with crafting and performing personas for themselves while monitoring the reactions of others¹²⁶ to these personas or characters.¹²⁷ In Goffman's words, "[t]he expressiveness of the individual appears to involve two radically different kinds of sign activity: the expression that he gives, and the expression that he gives off."¹²⁸

Goffman uses the metaphor of a play being staged in the theater to convey the dynamics of identity crafting. A person, like an actor, has the ability to choose his stage and props, as well as the costume for a specific audience.¹²⁹ The goal for the actor is to maintain coherence and to adjust to the different stagings and interaction with other

125 "Regardless of the particular objective which the individual has in mind and of his motive for having this objective, it will be in his interests to control the conduct of others, especially their responsive treatment of him. This control is achieved largely by influencing the definition of the situation which others come to formulate, and he can influence this definition by expressing himself in such a way as to give them the kind of impression that will lead them to act voluntarily in accordance with his own plan. Thus, when an individual appears in the presence of others, there will usually be some reason for him to mobilize his activity so that it will convey an impression to others which it is in his interests to convey.

ERVING GOFFMAN, *PRESENTATION OF SELF IN EVERYDAY LIFE*, 3–4 (1959).

126 "When we allow that the individual projects a definition of the situation when he appears before others, we must also see that the others, however passive their role may seem to be, will themselves effectively projects a definition of the situation by virtue of their response to the individual and by virtue of the lines of action they initiate to him." *Id.* at 9.

127 In our society the character one performs and one's self are somewhat equated, and this self-as-character is usually seen as something housed within the body of its possessor, especially the upper parts thereof, being a nodule, somehow, in the in the psychobiology of personality. . . . In this report the performed self was seen as some kind of image ["front"], usually creditable, which the individual on stage and in character effectively attempts to induce others to hold in regard to him. While this image is entertained concerning the individual, so that a self is imputed to him, this self itself does not derive from its possessor, but from the whole scene of his action, being generated by that attribute of local events which renders them interpretable by witnesses. A correctly staged and performed scene leads the audience to impute a self to a performed character, but this imputation—this self—is a product of a scene that comes off, and is not a cause of it. The self, then, as a performed character, is not an organic thing that has a specific location, whose fundamental fates is to be born, to mature, and to die; it is a dramatic effect arising diffusely from a scene that is presented, and the characteristic issue, the crucial concern, is whether it will be credited or discredited.

Id. at 252–53.

128 *Id.* at 2.

129 *Id.*

actors.¹³⁰ In other words, for Goffman, it can be said that certain structural constraints both enable and limit agency and vice versa. It is precisely negotiating this tension between creating expression and creating an impression that children, particularly teens, are still in the process of learning to manage. Meanwhile, these child performances now simultaneously play out on two stages at once—one performance in physical space for a physical audience and a second in digital spaces for a (sometimes overlapping) virtual audience. For Goffman, it is of fundamental importance to have an agreed upon definition of the situation. Without a clear set of parameters and shared definition guiding the structure of a given interaction, the interaction lacks coherency and the actors' ability to manage impressions falters.¹³¹

Perhaps the most important insight that Goffman's work offers us in terms of understanding the challenges of children's interactions in digital spaces relates to this notion of coherence. A coherence problem currently permeates children's interactions in digital spaces. Apart from the legal coherence problem of the four conflicting paradigms of childhood discussed in the prior section, children—as well as adults—struggle to impression manage successfully in digital spaces. In digital spaces such as social media, the audiences for the performance are sometimes unexpectedly bundled together across various contexts, and future audiences are not always foreseen or even foreseeable. In particular, the ability to maintain what Goffman calls a "front" becomes jeopardized. A front is "that part of individual's performance which regularly functions in a general and fixed fashion to define the situation for those who observe the performance. Front, then, is the expressive equipment of a standard kind intentionally or unwittingly employed by the individual during his performance."¹³² Particularly in a digital world with multiple information sources and multiple audiences are converging in social networks, impression management becomes a struggle.

For example, when a young teen (or one of her friends) posts a picture of her with a red plastic cup at a party or in a state of quasi-nudity, she is more likely to be considering the immediate audiences—her friends in school, her virtual friends and perhaps her parents—rather than prospective future audiences—college admissions officers, possible employers, and future acquaintances. It is unlikely

130 *Id.*

131 Further, when the accepted definition of the situation has been discredited, some or all of the actors may nevertheless pretend that nothing has changed, if they find this strategy profitable—a type of willed credulity.

132 *Id.* at 22.

that she is considering that five years in the future a prospective employer may wrongly analyze the red plastic cup to contain illegal alcohol, deem her bikini pictures to bespeak poor judgment and a signal to him to hire someone more responsible-seeming. Today's teenage pictures and rants may be tomorrow's stigma.¹³³ In Goffman's words, "a certain bureaucratization of the spirit is expected so that we can be relied upon to give a perfectly homogenous performance at every appointed time."¹³⁴

The usability of the technology itself further complicates this set of risks: privacy settings frequently provide a false sense of security to children, emboldening them to overshare information in the rapture of a moment, forgetting that the data then leaves their control in unanticipated ways. Further, the standard child protection avenues of parental supervision that exist in physical space often fail in digital spaces. Children frequently refuse to "friend" their parents in social networks, for example, or when they agree to "friend" them, it is frequently with such restricted access that meaningful supervision cannot happen short of sneaky parental conduct.¹³⁵ Anecdotal tales of parents cracking into their children's Facebook accounts to monitor their children's conduct abound.¹³⁶ Apart from the practical infeasibility of expecting every parent to be a technology expert and a "hacker," the familial dynamics fostered by this kind of supervision expectation are obviously not positive. It is precisely because we acknowledge that parents cannot successfully supervise their children every minute of the day that we exempt childhood in various bodies of law in physical space.¹³⁷ In the case of technology-mediated communication, these

133 By virtue of [the ability to read cues], the audience may misunderstand the meaning that a cue was designed to convey, or may read an embarrassing meaning into gestures or events that were accidental. . . . In response to these communication contingencies, performers commonly attempt to exert a kind of synecdochic responsibility, making sure that as many as possible of the minor events in the performance, however instrumentally inconsequential these events may be, will occur in such a way as to convey either no impression or an impression that is compatible and consistent with the overall definition of the situation that is being fostered.

Id. at 51.

134 *Id.* at 56.

135 See e.g., *My Kids Refuse to Accept My Friendship on Facebook*, CIRCLE OF MOMS, (Dec. 3, 2008), <http://www.circleofmoms.com/moms-of-college-kids/my-kids-refuse-to-accept-my-friendship-on-facebook-121163>.

136 See Chris Matyszczyk, *Police Chief: Hack Your Kids' Facebook Passwords*, CNET (Feb. 16, 2011), http://news.cnet.com/8301-17852_3-20032150-71.html.

137 In many legal contexts we acknowledge children's inability to foresee and process in the ways adults can; but, we adopt a long-term perspective on their development, and we forgive their missteps. When a child walks into a Ferrari dealership and

concerns are exacerbated—even reasonable adults frequently wrongly analyze information flows and the risks associated therewith.¹³⁸ The risks to which a particular website or application exposes a user are not transparent to even the most sophisticated users: vulnerabilities may exist in the underlying code, which are hidden from the user.¹³⁹ How can we expect a child to successfully conduct this calculus when even adult software engineers occasionally commit errors in their use?¹⁴⁰ All these factors may contribute to children’s higher likelihood of mismanaging their information in ways that may prove damaging to them in the future.

2. Stigma

Goffman writes that a

correctly staged and performed scene leads the audience to impute a self to a performed character, but this imputation—this self—is a product of a scene that comes off, and is not a cause of it. The self, then, as a performed character, is not an organic thing that has a specific location, whose fundamental fates is to be born, to mature, and to die; it is a dramatic effect arising diffusely from a scene that is presented, and the characteristic issue, the crucial concern, is whether it will be credited or discredited.¹⁴¹

Using Goffman’s framework, the danger of information flows rests in a risk of what he calls “stigma”—the result of a discredited character, sometimes due to information mismanagement.

is sold a car during the time he is supposed to be in gym class, we forgive this misstep and allow him to disavow the agreement. But when a child stupidly posts his name, address, telephone number, and social security number to Facebook, we are legally unsure of the consequences at present of disavowing that user agreement. It is precisely negotiating this tension between creating expression and creating an impression that children, particularly teens, are still in the process of learning to manage. Meanwhile, these child performances now simultaneously play out on two stages at once—one performance in physical space for a physical audience and a second in digital spaces for a (sometimes overlapping) virtual audience.

138 For a discussion of risks of information loss and mismanagement, see, e.g., Andrea M. Matwyshyn, *Hidden Engines of Destruction: The Reasonable Expectation of Code Safety and the Duty to Warn in Digital Products*, 62 FLA. L. REV. 109 (2010).

139 *Id.*

140 See Ed Bott, *Google Engineer Calls Google+ a “Pathetic Afterthought” and “Knee-jerk Reaction”*, ZDNET (Oct. 12, 2011), <http://www.zdnet.com/blog/bott/google-engineer-calls-google-a-pathetic-afterthought-and-knee-jerk-reaction/4082>.

141 See ERVING GOFFMAN, *STIGMA* 252–53 (1986).

Goffman describes stigma¹⁴² as an “undesired differentness” from what society deems to be “normal” or expected. According to Goffman, “we exercise varieties of discrimination [against the stigmatized], through which we effectively, if often unthinkingly, reduce his life chances.”¹⁴³ Stated another way, stigma for Goffman is a special kind of gap between what Goffman terms “virtual social identity” and “actual social identity”:

Society establishes the means of categorizing persons and the complement of attributes felt to be ordinary and natural for members of each of these categories. . . . We lean on these anticipations that we have, transforming them into normative expectations, into righteously presented demands. . . . [These assumed demands and the character we impute to the individual will be called] *virtual social identity*. The category and attributes he could in fact be proved to possess will be called his *actual social identity*.¹⁴⁴

Although Goffman’s use of the word virtual came long before the arrival of the Internet, the idea the concept of virtual social identity embodies is directly applicable. Goffman repeatedly articulates the social embeddedness of identity in physical space and the ongoing process of maintaining fronts:

When an individual presents himself to others, his performance will tend to incorporate and exemplify the officially accredited values of the society, more so in fact, than does his behavior as a whole Commonly we find that upward mobility involves the presentation of proper performances and that efforts to move upward and efforts to keep from moving downward are expressed in terms of sacrifices made for the maintenance of front.¹⁴⁵

Failure to maintain a front correctly frequently results in a form of social discrediting.

Digital spaces—like physical spaces—are socially embedded, and, because of this social embeddedness, social discrediting is a constant danger for children. A universe of constant real-time status updates and tweets generates a digital social expectation at odds with the traditional (physical space) social expectation of filtering and homogeneity. For example, a Facebook friend’s mean Facebook comment can cause hurt feelings, looking “uncool,” and can even give rise to law-

142 Goffman posits a distinction between those who embrace stigmatized identity (stigmaphiles) and those who, although themselves stigmatized, seek to escape stigma (stigmaphobes). *Id.*

143 *Id.*

144 *Id.*

145 *Id.* at 35–36.

suits in some cases.¹⁴⁶ Further, a *Lord of the Flies* effect leads to tension between social embeddedness in physical space and virtual space: because of the deficit of parental supervision in digital spaces, children sometimes turn on each other in more vicious ways that they would in physical space.

It can be argued that previous generations escaped the full panoply of stigma for past childhood conduct due to the limitations of physical space and information transfer: someone had to know someone who knew of the allegedly questionable conduct (and rarely had tangible proof), allowing for discounting of the information, second chances and plausible deniability. Certainly greater compartmentalization of family, friends, and work life was the norm. However, as the Internet increasingly becomes a permanent archive of all digital speech and conduct, today's children will be viewed and assessed in adulthood as the totality of their conduct in digital spaces. The imprudent comments of sixteen can harm the college application at eighteen. Increasingly the Facebook posts of childhood threaten to damage the job prospects of tomorrow.¹⁴⁷ In a world where jobs are found through the "strength of weak ties",¹⁴⁸ meaning through people who are casual social or professional connections without deep personal knowledge of job candidates, one negatively perceived Facebook post from childhood may be enough to lose a professional opportunity. A world characterized by blended digital audiences, digital and physical space audience convergence and expanding digital archiving is conducive to stigma: children today are likely have a higher probability of being associated with some form of possibly stigmatizing content in adulthood than do the children of yesterday.

As the next section argues, however, the value of children's identity experimentation goes beyond simply the micro level concerns of child development. These questions of childhood expression touch social questions of creativity, fostering entrepreneurship and innovation. As history has shown us time and time again, the quirky children and off-beat adults sometimes offer our society spectacular innovation. Preserving this space for childhood creativity in a safe environment is integral to helping innovation and entrepreneurship blossom.

146 See, e.g., *Lawyer Sues Facebook Claiming Other Users Defamed Him*, TECHDIRT (Oct. 29, 2010), <http://www.techdirt.com/articles/20101022/18065511555/lawyer-sues-facebook-claiming-other-users-defamed-him.shtml>.

147 See Jenna Wortham, *More Employers Use Social Networks to Check Out Applicants*, N.Y. TIMES (Aug. 20, 2009), <http://bits.blogs.nytimes.com/2009/08/20/more-employers-use-social-networks-to-check-out-applicants/>.

148 See MARK GRANOVETTER, STRENGTH OF WEAK TIES (1973).

B. *Digital Creativity and Entrepreneurship*

In addition to the arguments in favor of crafting a safe space for digital childhood for the benefit of individual children and their development, a strong argument exists that child protection for conduct in digital spaces is a social investment in creativity.¹⁴⁹ Fostering childhood creativity plays a critical role in developing adults capable of creative thought and the next generation of digital entrepreneurship and invention. As our economy increasingly becomes a “knowledge economy,” digital creativity and entrepreneurship should be considered when crafting legal paradigms of childhood.

Turning to the empirical literature on creativity, the importance of facilitating childhood experimentation and creativity in digital spaces becomes clear. Professor Teresa Amabile has explored the drivers and dynamics of both adult and child creativity.¹⁵⁰ In her pathbreaking work, *Growing Up Creative*, she defines creativity as a process that draws upon talents, education, skills, thinking, working styles, and inherent intelligence. She pinpoints motivation as the single most important ingredient in fostering creativity.¹⁵¹ In particular, she finds that the strongest forms of motivation in both children and adults is intrinsic motivation—people are motivated to create for creativity’s own sake.¹⁵² Extrinsic motivation such as money can actually dampen creativity in some circumstances.¹⁵³ Further, collaborative

149 Creativity was named the single most important attribute for success in leading a large corporation in the future in a recent survey of 1500 CEOs by IBM’s Institute for Business Value, and certainly the next generation of technology entrepreneurship, depends entirely on the dreams, vision, and skills of our next generation of children. *IBM 2010 Global CEO Study: Creativity Selected as Most Crucial Factor for Future Success*, IBM (May 20, 2010), <http://www.ibm.com/news/ca/en/2010/05/20/v384864m81427w34.html>.

150 See TERESA AMABILE, *GROWING UP CREATIVE* (1989).

151 *Id.*

152 *Id.*

153 The experimental research that has been done on creativity suggests that money is not a dominant motivator. In organizational settings, financial connection to creativity can be problematic when people believe their creativity or absence thereof will affect their compensation. Consequently, in these situations, according to Amabile, people tend to get risk averse. Amabile’s

research shows that people put far more value on a work environment where creativity is supported, valued, and recognized [than on financial rewards for creativity]. . . . People are most creative when they care about their work and they’re stretching their skills. If the challenge is far beyond their skill level, they tend to get frustrated; if it’s far below their skill level, they tend to get bored.

Bill Breend, *The 6 Myths Of Creativity*, FASTCOMPANY, (Dec. 1, 2004), <http://www.fastcompany.com/magazine/89/creativity.html?page=0%2C0>.

environments foster creativity better than working in isolation or competition.¹⁵⁴

Psychologists who study childhood creativity tend to believe that most children have a natural talent for a particular activity. By letting a child experiment and explore budding talents, these talents are more likely to emerge. Finding these hidden talents, mastering the skills they require and collaborating well with others are prerequisites for creativity in adult life.¹⁵⁵ In Amabile's words,

The kernel of creativity is there in the infant: the desire and drive to explore, to find out about things, to try things out, to experiment with different ways of handling things and looking at things. As they grow older, children begin to create entire universes of reality in their play.¹⁵⁶

Digital spaces lend themselves to precisely these kinds of shared explorations for children. They offer collaborative environments that foster creativity and learning new skills in novel ways.¹⁵⁷ The inher-

154 According to Amabile,

There's a widespread belief, particularly in the finance and high-tech industries, that internal competition fosters innovation. In our surveys, we found that creativity takes a hit when people in a work group compete instead of collaborate. The most creative teams are those that have the confidence to share and debate ideas. But when people compete for recognition, they stop sharing information. And that's destructive because nobody in an organization has all of the information required to put all the pieces of the puzzle together.

AMABILE, *supra* note 149.

155 See D. Goleman, P. Kaufman, *The Art of Creativity*, PSYCH. TODAY (Mar. 1, 1992), <http://www.psychologytoday.com/articles/199203/the-art-creativity>.

156 Amabile's research has identified the main creativity killers: Surveillance, Evaluation, Competition, Overcontrol, Pressure. See AMABILE, *supra* note 149.

157 By way of example, let's consider a teen, Kurt, who writes a melodramatic set of song lyrics about being scorned by his old love interest and posts them to Facebook. Instantaneously, his 1200 Facebook friends see the lyrics. Some of them may think the lyrics are odd, and they wish to dissociate themselves from him. They may unfriend him. However, some of them will like his angst-ridden verbal stylings or feel empathy for him; they will offer positive emotional reinforcement through hitting the "like" button on Facebook or by commenting. Emboldened by this positive experience, he continues to write creatively as an outlet and to share his work with his friends on Facebook. His creative expression is both developmentally desirable for him as an emotional outlet, and for society as a whole. Perhaps Kurt will grow up to become the next Kurt Cobain. Or perhaps he will grow up to build song-writing software that will be used by millions of users. However, should the social network to which he posted the lyrics allege a copyright in his cumulative body of lyrics and try to sell them, pursuant to an alleged term in fine print in the social network's user agreement, we would find this act to be particularly unfair to Kurt. On the one hand, he isn't even old enough to agree to the contract that provided the basis for the content

ently collaborative structures of social networks, for example, can stimulate childhood creativity. Fostering creativity in children may lead to more creative employees in adulthood and, perhaps, ultimately more adult tolerance for creativity inside organizations.¹⁵⁸ In the interim, our economy increasingly depends on novel entrepreneurial efforts in technology spaces, and a social commitment is needed to encouraging children's technology creativity as part of their development.

The next Part argues in favor of a broad legal conceptualization of children's development and posits that the most protective approach—an extension of minority doctrine and the addition of an affirmative defense of childhood in copyright—should be the starting point for constructing a paradigm of childhood in digital spaces.

III. THE FUTURE OF GENERATION C: IDENTITY AND TINKERING

Two recent changes in technology spaces have sent ripples of concern over privacy through consumers. The first change,

license and, on the other hand, perhaps he didn't want his melodramatic childhood love angst put to music and broadcast to anyone outside his Facebook friend group. Further, at the time he expressing himself through writing his lyrics in the vernacular and themes of a fifteen-year-old child, he is not likely to be considering the ramifications this melancholy bemoaning of childhood love gone awry may have in the eyes of his prospective employers six years in the future.

158 Turning to an even more recent and novel branch of creativity research, concern has been raised that our organizational structures hinder rather than foster the emergence of creative thought. The work of Professor Mueller and others indicates that in corporate settings—despite express commitment and statements regarding valuing and seeking creativity and original thought—the opposite may in fact be true. See Jennifer M. Mueller et al., *The Bias Against Creativity: Why People Desire Yet Reject Creative Ideas*, PSYCH. SCI. (forthcoming). Although creativity is often mentioned by corporate leadership, in reality quirky and creative solutions appear to lose out to less innovative options inside enterprises, and novelty of thought can be stigmatizing instead of a positive quality for adults in the workplace. *A Bias Against 'Quirky'? Why Creative People Can Lose Out on Leadership Positions*, KNOWLEDGE@WHARTON (Feb. 16, 2011), <http://knowledge.wharton.upenn.edu/article.cfm?articleid=2713>. This path-breaking creativity research may highlight the social importance of child protection in digital spaces: the most creative adults sometimes face the most stigma for the creativity of their ideas. Yet, almost universal agreement exists that the future of our progressively more digital economy is contingent on the creativity of future entrepreneurs. See, e.g., ERIK STAM & ELIZABETH GARNSE, ENTREPRENEURSHIP IN THE KNOWLEDGE ECONOMY, http://www.dur.ac.uk/resources/dbs//faculty/centre_entrepreneurship/publications/ResearchPaper018.pdf. This “bias against creativity” may explain why arguably a greater number of novel business models tend to come from startups rather than large established players. Large organizations frequently prefer to adopt a strategy of purchasing startups rather than pulling ideas from inside their organizations, even when the identical concept exists in both places.

Facebook's shift to a "timeline" model that is positioned as a cradle-to-grave archive of user's lives, was perceived as yet another step toward pushing a vision of "radical transparency"¹⁵⁹ in Internet conduct.¹⁶⁰ Second, Google's harmonization of over sixty privacy policies across all its products struck a chord with consumers as an attempt to share data in a manner that consumers had not intended or anticipated.¹⁶¹

As the prior sections have argued, child protection in digital spaces is desirable both for reasons of child development and fostering creativity in our society. Although at least one statutory attempt has previously been made by Congress to create a child protection regime in digital contexts,¹⁶² a different approach is needed. The approach set forth in the following section argues in favor of the minority defense to capacity extending strongly into digital spaces, particularly with respect to commercial privacy contracting situations. Through crafting child protection in this manner, we begin to rebalance the impression management dynamic in favor of the child—an important first step toward a broader structure of children's data accountability.

Above, I have argued that the work of Erving Goffman and creativity theorists offers us insights into the developmental and social importance of crafting a safe space for childhood in digital spaces. Now, turning to insights from social psychology theory with respect to identity salience, roles, and boundaries, I will argue that the first piece of a successful paradigm of digital childhood must begin with giving children back the ability to engage in "keying" of identity through an extension of the contract doctrine of minority into digital spaces. It is the first step toward allowing children the ability to both manage digital identity and experiment with creative code expression. Second, introducing the distinction between process-focused and outcome-focused analysis of creativity, I will argue in favor of crafting a childhood exception in copyright to protect children's constructive creativ-

159 See, e.g., danah boyd, *Facebook and "Radical Transparency"*, ZEPHORIA (May 14, 2010), <http://www.zephorias.org/thoughts/archives/2010/05/14/facebook-and-radical-transparency-a-rant.html>.

160 See, e.g., Ron Waugh, *You WILL Reveal Your Past! Facebook's Timeline Feature Becomes Mandatory for All Users—With Just 7 Days to 'Clean Up'*, DAILY MAIL (Jan. 26, 2012), <http://www.dailymail.co.uk/sciencetech/article-2091735/Facebook-Timeline-mandatory-users—just-7-days-clean-up.html>.

161 See, e.g., *EPIC Watchdog Group Sues FTC To Stop Google Privacy Policy Changes*, HUFFINGTON POST (Feb. 8, 2012), http://www.huffingtonpost.com/2012/02/08/epic-ftc-google-privacy_n_1263844.html.

162 Children's Online Privacy Protection Act, 47 U.S.C. § 231 (2006).

ity and limiting destructive creativity to injunction, restitution, and disgorgement remedies.

A. *The Crafted Self: Freedom to Develop*

In a commercial world where databases of aggregated information craft what Professor Dan Solove has termed “digital dossiers”¹⁶³ on each of us, the ability of adults to avoid being impacted by imprudent content from their childhood seems highly unlikely without a change in law. Goffman would analyze this dynamic as a problem of interpretative framing and “keying”—namely, “a systematic transformation . . . across materials already meaningful in accordance with a schema of interpretation,” which “utterly changes what it is a participant would say was going on.” Keying thus involves a “rewriting” of held information that fundamentally affects how observers organize their experience of those materials.¹⁶⁴ In other words, keying turns on “the individual’s capacity to acquire, reveal and conceal information.” More specifically, “[j]ust as it can be assumed that it is in the interests of the observer to acquire information from a subject, so it is in the interests of the subject to appreciate that this is occurring and to control and manage the information the observer obtains.”¹⁶⁵ It is precisely this ability that children today are losing.

1. Keying: Restoring Control over Children’s Role Salience

As explained above, loss of information control over presentation of self can be analyzed as a problem of Goffman’s concept of “keying.” Operationalizing this concept into the language of psychology, some social psychology identity theorists¹⁶⁶ have argued that the self is composed of a group of role identities, each of which is connected to the self when embedded in a particular “role”.¹⁶⁷ Roles can relate to work, family, or other interpersonal relationships which come with

163 See DANIEL J. SOLOVE, *THE DIGITAL PERSON* (2006).

164 See ERVING GOFFMAN, *STRATEGIC INTERACTION* 10 (1969).

165 *Id.*

166 Two schools of thought exist in social psychology that are sometimes confused—on the one hand, identity theory, which emphasizes role behavior and on the other social identity theory, which emphasizes group process and intergroup relations. Identity theory focuses on the self as comprised of the various roles as the source of identity, and social identity theory focuses on the groups to which people belong as a source of identity. M. Hogg et al., *A Tale of Two Theories: A Critical Comparison of Identity Theory with Social Identity Theory*, 58 *SOC. PSYCH. Q.* 255, 255–69 (1995).

167 See Sheldon Stryker & Peter Burke, *The Past Present and Future of an Identity Theory* (2000), available at <http://www.scribd.com/doc/16210252/Stryker-Identity-Theory>.

and create a set of associated meanings and expectations for the person, and may influence behavior.¹⁶⁸ Role identities can be organized hierarchically into a “salience hierarchy” of roles, with the most salient roles being most likely to be called upon in situations that involve different aspects of the self.¹⁶⁹ In other words, the position of a particular role identity in this hierarchy—its salience¹⁷⁰—explains the degree of prominence we attach to our various role identities and, potentially, the degree of effort we put into each role.¹⁷¹ However, because role identities have permeable boundaries and are interdependent, they sometimes conflict with each other.¹⁷² This may particularly be true of children and teens whose conception of self and roles is evolving.

In those cases when role identities conflict, the self must either integrate or segment these role identities. Integration involves blending two roles identities, while, role segmentation is associated with large discrepancies in role identities.¹⁷³ Stated another way, a person is forced to negotiate the fit of their preferences, the salience of their various role identities, and the boundaries allowed by their social context—to decide whether to integrate or segment their various role identities.¹⁷⁴

168 See P.J. Burke & D.C. Reitzes, *The Link Between Identity and Role Performance*, 44 SOC. PSYCH. Q. 83, 83–92 (1981).

169 See Hogg, *supra* note 166.

170 Identities can be defined as the answer to the question “Who am I?” Many of the “answers” are connected with the roles or jobs we perform. Sheldon Stryker & S. Serpe, *Commitment, Identity Salience, and Role Behavior: Theory and Research Example in PERSONALITY, ROLES, AND SOCIAL BEHAVIOR* 206 (William Ickes & E.S. Knowles, eds. 1982).

171 See Burke & Reitzes, *supra* note 167.

172 See R.M. KANTER, *WORK AND FAMILY IN THE UNITED STATES* 417–27 (1977); J.H. Pleck, *The Work-Family Role System*, SOCIAL PROBLEMS 24 (1977).

173 The questions examined in both the research on role identity salience and in boundary theory focus on how individuals value, negotiate, and cross the lines of demarcation of their various role identities. See S.C. Clark, *Work/Family Border Theory: A New Theory of Work/Family Balance*, HUMAN RELATIONS, 53(6), 747–70 (2000). Boundary theory, an offspring of identity theory, considers the blurring of these role identity lines and the outcomes that result, such as changes in meaning that people assign to roles and the ease of transition among them. See C. NIPPERT-ENG, *HOME AND WORK* (1996); B.E. Ashforth et al., *All in a Day’s Work: Boundaries and Micro Role Transitions*, 25 ACAD. MGMT. REV. 472, 472–91 (2000). Boundary theory is a general cognitive theory of social classification. See E. Zerubavel, *Lumping and Splitting: Notes on Social Classification*, 11 SOC. F. 421, 421–23 (1996).

174 Role integration and segmentation is a continuum, and a person may select differently in different situations. For example, a person may hold a job as a high school teacher, and in this position he acts with decorum, setting a positive model for his students. But, on weekends our high school teacher may perform in a rock band

Internet intermediation of identity disrupts role salience and a child's control of his role hierarchy. When identity is intermediated, this process of controlling the extent of role integration and segmentation is taken away from the child and instead placed in the hands of the intermediary. The child's desired salient role identity may become overshadowed by the identity that the intermediary instead chooses to project for that child. As presidential candidate Rick Santorum learned, Google does not ask you what search results should be associated with your name.¹⁷⁵ In essence, segmented role identity becomes almost impossible in a highly intermediated world of information.¹⁷⁶ Intermediaries, particularly social network services, essentially force all users into a highly integrated identity hierarchy regardless of the user's actual salience hierarchy.

that performs songs with adult themes. He enjoys both his roles as high school teacher and rocker but has chosen to firmly compartmentalize the two role identities and maintain a sharp division between them. The two role identities are strongly segmented: he functions effectively in each situation independently without reliance of the other role identity. He would not invoke his rock band persona in the middle of teaching an algebra class. In general, the research tends to indicate that maintaining firm boundaries on role identities makes it easier to manage borders of different roles. Conversely, integrating role identities facilitates transitions across roles because of increased flexibility and permeability. See Clark, *supra* note 172; NIPPERT-ENG, *supra* note 172. Flexibility refers to the malleability of the boundary between two or more role/domains to accommodate the demands of one domain or another. See Ashforth et al., *supra* note 172. Permeability involves the extent to which a boundary allows psychological or behavioral aspects of one role or domain to enter another. *Id.* However, more integrated roles increase the chance of role blurring—a potentially undesirable result. See S. Desrochers, *Measuring Work-Family Boundary Ambiguity: A Proposed Scale*, Bronfenbrenner Life Course Ctr. Working Paper #02-04 (2002). Role blurring may trigger confusion and anxiety about which role should be more salient in a particular situation. When an individual chooses to maintain a highly segmented set of role identities, the benefit is that each role is associated with a particular time and place, allowing an individual to immerse completely in each role. The individual controls the context: the high school classroom triggers a different set of behaviors from the teacher-rocker than being on stage at a show. The downside is that the contrast between roles makes it more difficult to transition between the two roles. See Ashforth, et al., *supra* note 172.

175 See Dan Mitchell, *Santorum's 'Google Problem' Isn't Google's Problem*, CNN (Feb. 10, 2012), <http://tech.fortune.cnn.com/2012/02/10/google-santorum/>.

176 For example, the intermediary will likely blur the high school teacher-rocker role identities into one identity, despite the fact that the individual in question had gone to lengths to maintain role separation. Despite the high school teacher's utmost professionalism in the classroom, perhaps because someone else tags him in a picture posted to a social network during a weekend performance, a future employer may reject him from consideration—based on an integrated identity constructed by an intermediary and not by the person himself.

Consequently, even some adult users feel they have lost control of their salience hierarchies to digital intermediaries.¹⁷⁷ This dynamic comes as no surprise, however, where intermediary conduct norms are governed solely by unnegotiable form contracts user “consent.”¹⁷⁸ A continuing spiral of progressively more aggressive intermediary conduct is likely, which will, in turn, likely result in increased loss of children’s control over their identity management.

Turning to the example of cyberbullying, we see the importance of regaining role salience control. For a child who is being bullied, perhaps the most traumatic harm is the bullies’ usurping of identity creation. The tormentors of the bullied child pollute both virtual space and physical space with negative content about their victim. However, as the next section describes, expressly extending the contract doctrine of minority changes the equation when a child has lost control of his salience hierarchy in digital spaces.

2. Extending the Contract Doctrine of Minority to Digital Spaces

In his book *Delete*, Professor Viktor Mayer-Schonberger argues that “forgetting has become the exception, and remembering the default.”¹⁷⁹ In other words, deletion of information requires conscious steps by individuals and, most likely, legal intervention. Protecting children online starts with the simple extension of a strong version of the minority doctrine to digital spaces. State contract law, either statutorily or doctrinally, can *expressly extend the child protections already present in contract law relating to physical spaces into digital spaces*, allowing minors to set aside digital as well as physical space contracts and force the deletion of their data by the holder.¹⁸⁰

177 See Mary Madden & Aaron Smith, *Reputation Management and Social Media*, PEW INTERNET & AM. LIFE PROJECT (May 2010), http://www.pewinternet.org/~media/Files/Reports/2010/PIP_Reputation_Management_with_topleft.pdf.

178 However, intermediaries would assert that even these users have given contractual consent, and no problem exists. Meaningful contractual consent becomes an increasingly tenuous construct in this circumstance where end user license agreements have become progressively more complex, unnegotiable, and unilaterally amendable in the discretion of the intermediary. See Andrea M. Matwyszyn, *Mutually Assured Protection: Toward Development of Relational Internet Data Security and Privacy Contracting Norms*, in *SECURING PRIVACY IN THE INTERNET AGE* 78–79 (Anupam Chander et al. eds., 2008).

179 Viktor Mayer-Schonberger, *DELETE* (2009).

180 In many cases minors lack the judgment to be guarded with their information. Instead, they frequently overdisclose, potentially leading to damaging commodification of their data streams. For example, minors may be less likely to realize that their online behaviors and their pictures may be viewable by a large circle of advertisers and even future employers. Particularly in the context of digital exchanges, children

Why should we start here? Why would the doctrine of minority improve the current confusion across conflicting childhood paradigms? The reason for this simple extension as the logical starting point rests in its nondisruptiveness from the standpoint of existing law—the doctrine of minority has existed for centuries in U.S. law in physical spaces, as the first section explained—and its simultaneous efficacy in terms of restoring control to children over their roles’ salience. The rationale for the existence of the minority doctrine pertains to children’s lack of capability to understand the consequences of their actions and the likelihood that adults with superior knowledge will take advantage. Certainly this rationale holds true with respect to minors’ interactions in digital spaces; in a world of convoluted legalistic user agreements, even reasonable adults frequently have trouble understanding the implications of their digital conduct because of the opacity of the technology they are using and its accompanying user agreements.

Because of the opacity of the underlying technology and contract terms, and especially where the unilateral right to modify terms is retained for their drafter, it is unjust to bind minors to unnegotiated digital contracts of adhesion. Further, as the discussion of Erving Goffman’s work argued, the resulting social stigma has negative consequences.¹⁸¹ As I have also argued elsewhere,¹⁸² when a user participates in a digital service, the exchange that transpires involves the exchange of a license to access the user’s information—a legally sufficient form of consideration—for access to the service.¹⁸³ There is no such thing as a “free” service; a child’s information is a valuable commodity transferred in exchange for inducing access to the service. The license to the service reciprocally conventionally induces the

may feel artificially at ease, both because of their technological proficiency and because of the artificial sense of safety due to their physical safety at the time. This sense of physical safety encourages them in their experimentation in digital spaces and engaging in conduct that might seem threatening in real space. Yet, as previous sections have argued, this experimentation is both developmentally healthy and good for creativity. As such, a clear legal space for digital childhood is needed. Although this approach may seem to implicate the First Amendment interests of the data aggregator on first blush, in fact, it does not. It would be likely to survive even a First Amendment challenge. Legal scholars have opined that contract-based approaches to privacy do not pose the First Amendment problems of other approaches. See, e.g. Eugene Volokh, *Freedom of Speech and Information Privacy: The Troubling Implications of a Right to Stop People from Speaking About You*, 52 STAN. L. REV. 1049 (2000).

181 See GOFFMAN, *supra* note 141.

182 See Matwyshyn, *supra* note 100.

183 *Id.*

license to the child's information and vice versa.¹⁸⁴ Nevertheless, the current business norm is that when the minor discontinues using the service, a service currently continues to use the minor's data and to derive derivative revenue, despite providing no continued services to the minor.

If these contracts existed in physical space, the minor's right to set aside the agreement would be appropriate and, in most states, not barred by any of the usual exceptions. Congress has expressly stated a desire for digital contracts to exist in parity with physical space agreements. Ergo, a strong form of the minority doctrine should also offer the same remedy in digital spaces as in physical spaces.

At the point a minor requests to set aside a digital agreement, the operator of the site would be bound to discontinue extracting consideration of any sort from the minor for use of the services, including discontinuing the use of the minor's previously shared information. Specifically, this means that in instances where the minor's consideration is a stream of data about the minor, at the point of disavowal of the contract by the minor, the contract ends, as should the flow of consideration.¹⁸⁵ In this case, because a license for the information no longer exists, all data collected from the minor should be deleted from the aggregator's possession and the databases of its information partners. This includes any material tagged in a manner connected to the minor's account. With respect to questions that arise due to the minor's misrepresentation of age, statutes of limitations, and other procedural questions, the contract law defaults of the state of residence of the minor would control.

No magic age will be developmentally optimal for all children with respect to child protection, but, as I have also argued elsewhere,¹⁸⁶ COPPA's arbitrary selection of age thirteen as the pivotal age¹⁸⁷ appears illogical and arbitrary in the social context of U.S. law.¹⁸⁸ States vary with respect to the formulation and extent of child protection they offer their citizens. Both contract law and the most successful statutes relating to commercial privacy to date—state data breach notification statutes—have similarly been operationalized through state-specific approaches. As such, the first round of additional commercial digital child protection statutes may logically be best suited for passage on the state level. Some states have experi-

184 *Id.*

185 *Id.*

186 *See, e.g.,* Matwyshyn, *supra* note 53.

187 *Id.*

188 *Id.*

mented with statutory expansions of the contract-like framework offered by COPPA, and some of these state laws unfortunately mirrored the illogical use of the age of thirteen as a pivot for children's data protection. But, others have expanded the covered age group to eighteen.¹⁸⁹

Through giving a child—especially a bullied child—the ability to disavow his agreements in connection with his online activities and require the deletion of the data collected about him, we enable him to regain control over a portion of his identity. We also assist him in crafting a new digital identity through strengthening his ability to segment the undesirable portions of his life more effectively—a critical opportunity to assist him in development and possibly overcoming the pain of his current circumstances. Without offering this child the ability to terminate his digital relationships and his contracts online, even though he may move on to a different school or a different stage in his life where the bullies do not follow in physical space, the bullies will always be a vivid memory in virtual space. Without the ability to purge this information, a damaged digital history, such as a history of cyber bullying will follow the child and disrupt future educational and work contexts.

Similarly, a strong right of minority allows a child who tinkers with applications but runs afoul of their user agreements the ability to avoid a major life disruption. As long as a circuit split exists on the question of whether a mere breach of contract provides the basis for a charge of civil and criminal computer intrusion under the Computer Fraud and Abuse Act (“CFAA”), a subject I have discussed extensively elsewhere,¹⁹⁰ all children's tinkering which may breach a user agreement places their futures at risk. Granting this right to disavow agreements offers children a space for creativity and entrepreneurship without risk of subjecting the child to uncertain and frequently draconian adult copyright and criminal law regimes. In the next section, for similar reasons, we turn to concerns over crafting a space for child-

189 A number of states proposed laws that go beyond to better protect children under thirteen years old online. *See, e.g.*, 2010 IL H.B. 1312 (requiring social networking sites to get written parental permission before a minor can create a profile page, and would require parents to be provided with ongoing access to their children's pages); S.B. 59, Gen. Assem., 2007–2008 (Ga. 2007) (prohibiting social networking sites from allowing minors to create profiles without parental consent and access to the minor's profile); A.B. 108, Gen. Assem., 213th Leg. Sess. (N.J. 2008) (requiring websites that collect information from children between thirteen and seventeen to obtain verifiable parental consent); S.B. 132, 2007 Gen. Assem., Reg. Sess. § 8 (N.C. 2007) (requiring social networking sites to obtain parental consent before a minor could use their sites).

190 *See* Matwyshyn, *supra* note 20.

hood creativity and the value of creating a childhood exception in copyright.

B. The Creative Self: Freedom to Tinker

In the context of adults, the legal literature demonstrates an increasingly robust discussion of creativity and intellectual property.¹⁹¹ However, little legal scholarship has expressly addressed the question of childhood creativity, and the connection of childhood creativity with copyright law is virtually unexamined. Copyright scholarship almost always presumes the creator to be an adult or that childhood is not a relevant consideration for copyright.¹⁹² Just as creators are presumed to be adults, as Part I.B explained, so too are infringers and subject to a single infringement paradigm, regardless of age. For example, Professor Herbert Simon argues that “when we are children, our creative abilities may not yet fully be formed.”¹⁹³

I argue the contrary – in childhood our ability to create may be at its most spirited or, using the language of creativity theory, its most “deviant.”¹⁹⁴ As children’s participation in both creation and use of technology content increases, copyright law must now worry about children and its impact on their development. It is imperative to the future of our knowledge economy to craft a safe space for children’s development using technology. The possibility of crippling legal sanctions in copyright against children threatens both their potential for creativity as adults and the future of entrepreneurship in the United States.

By way of example, let us examine the childhoods of two entrepreneurs one might consider “creative”—Bill Gates and Steve Jobs.

191 See, e.g., Olufunmilayo B. Arewa, *Creativity, Improvisation, and Risk: Copyright and Musical Innovation*, 86 NOTRE DAME L. REV. 1829 (2011); Jeanne C. Fromer, *The Role of Creativity in Trademark Law*, 86 NOTRE DAME L. REV. 1885 (2011); Gregory N. Mandel, *To Promote the Creative Process: Intellectual Property Law and the Psychology of Creativity*, 86 NOTRE DAME L. REV. 1999 (2011); Mark P. McKenna, *Introduction: Creativity and the Law*, 86 NOTRE DAME L. REV. 1819 (2011).

192 For example, Professor Hughes considers childhood and creativity and argues, “an intellectual work is a personal reflection of the individual—a reflection of their infancy, their childhood, their recent experiences, or what they had for lunch today.” See Justin Hughes, *The Personality Interests of Artists and Inventors in Intellectual Property*, 16 CDZAJLJ 81, 108 (1998). However, implicit in this statement can be found the idea of the creator having completed each of these items, i.e., that the creator is an adult.

193 See Herbert Simon, *Culture, Creativity, & Copyright*, 29 CDZAJLJ 279, 296 (2011).

194 See, e.g., Mark Runco, *Creativity Has No Dark Side*, in *THE DARK SIDE OF CREATIVITY* (David H. Cropley et al. eds., 2010).

Bill Gates began “hacking” computers as a young teen,¹⁹⁵ and wrote his first program, a tic-tac-toe game, at thirteen.¹⁹⁶ He demonstrated a tendency toward independent behaviors focused on technology—a set of behaviors that was difficult for his parents to control;¹⁹⁷ they coped by granting him additional independence to experiment with computers.¹⁹⁸ He met Steve Allen, the co-founder of Microsoft Corporation at age thirteen. Similarly, Steve Jobs frequented after-school lectures at the Hewlett-Packard Company in Palo Alto, California, while in high school and was hired there, working with Steve Wozniak, the future co-founder of Apple, Inc.¹⁹⁹ Steve Jobs explained the importance of his childhood tinkering with machines in this way:

Things became much more clear that they were the results of human creation not these magical things that just appeared in one’s environment that one had no knowledge of their interiors. It gave a tremendous level of self-confidence, that through exploration and learning one could understand seemingly very complex things in one’s environment.²⁰⁰

Jobs own early tinkering allegedly involved phone “freaking”—an early form of telephone network intrusion or “hacking.”²⁰¹

In the course of the types of “tinkering” that Jobs described—taking things apart and putting them together again or building your own version—it is likely that a child will run eventually afoul of a contract or copyright restriction. The previous section has addressed the contract question by arguing for a strong extension of the minority doctrine. Here, using a discussion a paradigm of creativity of a process—as distinct from its constructive and destructive creation—borrowed from creativity theory, I argue for a copyright modification: an exception for childhood.

195 Portland St. Univ., *People Who Have Changed the World*, <http://www.wc.pdx.edu/billgates/billy.html> (last visited Mar. 3, 2011).

196 *Id.*

197 See Sue Shellenbarger, *Brat or Budding Genius? Lessons From Bill Gates’ Childhood*, WALL ST. J. (Apr. 28, 2009), <http://blogs.wsj.com/juggle/2009/04/28/brat-or-budding-genius-lessons-from-bill-gates-childhood/>.

198 *Id.*

199 See STEPHEN WOZNIAK, *iWoz* (2006).

200 Video: *Steve Jobs One-on-One, the ‘95 Interview*, COMPUTERWORLD (Oct. 27, 2011), http://www.computerworld.com/s/article/9221185/Video_Steve_Jobs_one_on_one_the_95_interview.

201 See STEVE JOBS, *ONE LAST THING* (2011).

1. Creativity as a Developmental Process and Childhood

As Part I.B argued, technology has altered the traditional enforcement dynamics of copyright law, and children are now viewed as potentially attractive defendants in litigation even when their parents are excluded. Because of these changing dynamics, childhood creativity and the “tinkering” that Steve Jobs described are threatened in digital spaces. In the next section I will advocate crafting an affirmative defense of childhood in copyright law. Here, using creativity theory, I argue in favor of protecting the creative process for children and adults.

Several notable copyright scholars have argued in favor of reframing copyright law to focus more on the processes of creation, rather than simply on the end product of creation.²⁰² As Professor Rebecca Tushnet has eloquently articulated, “[m]aking a creative work, especially a creative work that comments on an artifact that other people will know and have opinions about, gives people their own answers to [the] question [of ‘who do you think you are?’], and empowers them to keep talking.”²⁰³ Further, as Professors Eduardo Penalver and Sonia Katyal have argued, the law should be careful not to overdeter violations of property rights at the expense of other important social purposes.²⁰⁴ This approach is also consonant with the approach adopted by creativity theorists. Creativity theory differentiates between creative process and the product or consequences of that process.²⁰⁵ It is only as a second cut—a moral one—where creativity theory differentiates between positive and negative outcomes,²⁰⁶ what might be termed “constructive and destructive creations.” Stated another way, a particular set of behaviors can accurately be described as creative *regardless of the desirability of the end product*. For example,

202 See e.g., Julie Cohen, *The Place of the User in Copyright Law*, 74 *FORDHAM L. REV.* 370, 371 (2006) (arguing that a person “appropriates preexisting cultural goods as an inevitable part of the process of self-development” and “engages in creative play, with which ‘copying’ . . . is inextricably linked”); Wendy Gordon, *A Property Right in Self-Expression: Equality and Individualism in the Natural Law of Intellectual Property*, 102 *YALE L.J.* 1533 (1993) (arguing that self-expression is a fundamental component of creativity); Rebecca Tushnet, *Copy This Essay: How Fair Use Doctrine Harms Free Speech and How Copying Serves It*, 114 *YALE L.J.* 535, 568–74 (2004) (arguing that “[c]opyrighted works often serve as the self-expression of someone other than the author”). See generally LAWRENCE LESSIG, *REMIX* (2009).

203 See Rebecca Tushnet, *Hybrid Vigor: Mashups, Cyborgs, and Other Necessary Mothers*, 6 *I/S: J.L. & POL’Y FOR INFO. SOC’Y* 1, 11–12 (2010).

204 See Eduardo Moisés Peñalver & Sonia K. Katyal, *Property Outlaws*, 155 *U. PA. L. REV.* 1095 (2007).

205 See, e.g., Runco, *supra* note 193.

206 *Id.* at 21.

Professor Mark Runco argues that creativity should be defined as “a process that can and should be kept separate from the product, just as the causes of any behavior can and should be kept separate from possible effects of that same behavior.”²⁰⁷ He argues that, in particular, this definition allows for a more reasoned discussion of the negative consequences of creativity; it segments the negative consequences away from the underlying urge to create. Creativity itself, he argues, is free of values, but it can result in either positive or negative consequences. As he explains, the lack of direction of creativity “is what allows unpredictable insights,” which may either lead to positive or negative applications.²⁰⁸ He also reminds us that the assessment of whether the consequences of creativity are positive or negative is inherently bound up with moral judgments on the products or consequences.²⁰⁹ Protecting the possibility of this process of creation is arguably even more important than protecting its outcome. Current copyright law threatens this process for children in digital spaces.

Questions regarding childhood creativity highlight the importance of the distinction between creative process and desirable outcomes. *I argue that it is even more important to protect the creative process in children from legal sanction than that of adults, even if we do attach a punitive consequence to any destructive creations that arise from this childhood creativity.* As Professor Runco further points out, according to some developmental studies of children by Kohlberg and others, children are not always capable of understanding rules and conforming their behavior in the same ways that adults can.²¹⁰ He cautions that “the trick is to recognize that creativity is a form of deviance and then determine how and why it is sometimes used in a benevolent way and sometimes in a malevolent way.”²¹¹ He cites to work that argues that unconventional or “deviant behavior tends to peak from late childhood to mid adolescence, and then begins to decrease in late adolescence to early adulthood.”²¹² Professor McLaren, meanwhile, argues that there is a general distorted stereotype about creativity that causes us to ignore the creativity of efforts that result in negative ends.²¹³ It is precisely for this reason—a heightened sense of creativity in childhood without the development of a

207 *Id.*

208 *Id.*

209 *Id.*

210 *Id.* at 22.

211 *Id.* at 29.

212 *Id.* at 23.

213 See, e.g., R. McLaren, *The Dark Side of Creativity*, 6 CREATIVITY RESEARCH J. 137 (1993).

full understanding of rules—that leaves children more vulnerable to running afoul of existing copyright law in their conduct.

The second reason for children’s increased vulnerability to becoming copyright defendants in digital contexts rests in the ease of tracking their “tinkering” in digital spaces, while parental supervision in those spaces becomes more difficult. For example, imagine that a ten-year-old child becomes curious as to how the family coffeemaker works. He proceeds to disassemble it, screw together parts in various different combinations and then tries to make coffee. A parent may walk in to the kitchen during the disassembly and halt the process before total destruction of the machine’s functionality. This process, while inherently creative as a matter of his development, nevertheless is likely to result in a destructive creation—a broken coffeemaker, a mess in the kitchen, and disgruntlement over lack of coffee the next day. Of course, the coffeemaker manufacturer is usually unaware of both the creative process and the destructive creation.

Now imagine that the same ten-year-old child²¹⁴ is playing a social game called “Coffeemaker,” which his parents purchased for him for \$1.99 in an online store. In between the child’s brewing virtual cups of coffee for his “coffee friends,” he notices that if he clicks in a certain order on a portion of the user interface, he can cause a dialog box to appear. If he types in “more points,” he succeeds in changing his score. His parents are unlikely to be aware this act has occurred, but the game operator is likely to figure it out eventually. While many people would construe the child’s conduct as merely finding a vulnerability in the game that the game manufacturer should rectify, the manufacturer may allege that the child has circumvented a copy protection mechanism, leaving him vulnerable to an allegation of prohibited circumvention under the Digital Millennium Copyright Act (“DMCA”) or a charge of computer intrusion under the CFAA on the basis of a user agreement breach.

Thus, the “tethered” nature of digital spaces—where an intellectual property owner can monitor the usage of its products even after purchase—and the difficulty of parental supervision in digital spaces under the current copyright regime will inevitably ensnare increasing

214 At the 2011 DEFCON Kids, a ten year old going by the handle Cyfi found a vulnerability in a game. Much like the hypothetical child in this section, she was able to manipulate her scoring in ways that the creators of the game had not anticipated; this, consequently, triggered a vulnerability disclosure exchange with the gaming company. Sara Yin, *10-Year-Old Presents App Exploit at DefCon*, PC MAG (Aug. 8, 2011), <http://www.pcmag.com/article2/0,2817,2390671,00.asp>. Also like the ten-year-old in the hypothetical, Cyfi likes coffee. *Cyfi bio*, DEFCON KIDS, http://www.defconkids.org/?page_id=10#sat17 (last visited Mar. 3, 2012).

numbers of children during their digital tinkering. While the outcomes of these creative processes, like the broken coffeemaker, may not always be desirable, the fact that these processes are creative *in terms of the development of the child* is not disputable; building a society of inherently creative children is a social good. In this vein, copyright should evolve to include an affirmative defense of childhood, granting children the freedom to tinker in digital spaces. As Steve Jobs pointed out, it was his unfettered tinkering which he believed to have provided the critical foundation for his later entrepreneurship.

2. An Affirmative Defense and Exemption for Childhood in Copyright

As the previous sections articulated, an inherent benefit exists for children's development by allowing them digital breathing room to engage in tinkering and creative process. While the created products of this tinkering may not always be positive, these outcomes should not destroy the ability of the child to continue her process of creative exploration and tinkering. As such this section proposes a childhood exception in copyright. This new childhood exception is driven by a simple principle: *copyright law should sanction children only for actual economic loss—negative outcomes—but not punish them for their process of tinkering*. This childhood exception would be operationalized with two prongs—first, an affirmative defense of childhood under the Copyright Act and, second, a childhood exemption under the anticircumvention provisions of the Digital Millennium Copyright Act.

If the childhood exception is successfully invoked in copyright, the consequences for any alleged act of infringement should not include any prison time, nor should they include any statutory damages. Damages should be limited only to actual economic loss and requiring the child's destruction of the infringing works. In particular, a childhood exemption under the DMCA's anticircumvention provisions,²¹⁵ should absolve children from liability under that section. These two limitations on copyright law included within the proposed childhood exception would strike a balance between protecting the child in her creative process from overzealous intellectual property owners while protecting intellectual property owners from any real losses incurred as a consequence of the child's creative experimentation.

The operationalization of this childhood exception and affirmative defense is somewhat straightforward. For purposes of the DMCA,

215 17 U.S.C. § 1201(a)(1)(A) (2006).

the copyright office should include a childhood exemption as part of its regular rulemaking promulgations, exempting children from the anti-circumvention provisions of the DMCA. With respect to the remainder of copyright law, Congressional action may be required. The argument crafted here has direct practical implications for at least three contexts—children’s codebreaking, children’s filesharing, and children’s “parody” websites, such as the one at issue in *Layshock*.

a. Codebreaking

Children’s participation in the codebreaking and (re)building cycle will likely increase in the future, and this increased participation of children makes them more likely to run afoul of copyright statutes such as the Digital Millennium Copyright Act²¹⁶ and its anticircumvention provisions.²¹⁷ As I have explained elsewhere,²¹⁸ the statutory regimes that govern deconstruction and “breaking” of computer code are rife with uncertainty, and circuit splits exist with respect to both civil causes of action and criminal prosecution. Particularly when we consider a future where children will be continuously experimenting with code, developmentally-appropriate childhood tinkering may result in children’s lives being unnecessarily harmed through suits arising from innocent mistakes or even socially beneficial tinkering. The actions of a creative child who wants to assess how a piece of code works may potentially result in a contract dispute, an intellectual property infringement action or even a criminal charge.

Children “tinkering” with codebreaking can carry with it positive social consequences. Apart from the reasons of creativity and entrepreneurship explained in the last section, instances of children’s tinkering have already resulted in better information security for large numbers of users. For example, a child found two vulnerabilities in two different browsers by the age of twelve.²¹⁹ Although his browser vulnerability disclosure processes appears to have gone smoothly, vulnerability disclosure frequently does not.²²⁰ The norms and law

216 17 U.S.C. § 512 (2006).

217 A corollary challenge exists in connection with the interpretation of the Computer Fraud and Abuse Act, 18 U.S.C. § 1030 (2006). A statute passed originally in 1986, the CFAA has been the subject of much uncertainty and critique in both legal and technology circles.

218 See Matwyshyn, *supra* note 20.

219 See *12 Year Old Finds Critical Firefox Flaw Earns \$3000 bounty*, ZDNET (Oct. 22, 2010), <http://www.zdnet.com/blog/security/12-year-old-finds-critical-firefox-flaw-earns-3000-bounty/7524>.

220 Though the term “responsible vulnerability disclosure” sounds cohesive in theory, in practice, the term means very different things to different people. Depending

around vulnerability disclosure processes are evolving, and some companies may become even quicker to threaten a child than they would an adult vulnerability researcher—either alleging infringement or a violation of anti-circumvention under the DMCA.²²¹ At least until such time as the vulnerability discourse process becomes clarified, children need the protection of a childhood exception in copyright.

b. Children's Filesharing

Children's filesharing presents one of the most contentious contexts of childhood copyright infringement. A childhood exception would shift the current trend away from naming children as defendants in copyright litigation over filesharing: by limiting a recovery of plaintiffs to destruction of the copyrighted content and actual damages, the incentive structure to sue children becomes meaningfully altered. Without the hammer of statutory remedies, children and their parents are better able to compensate plaintiffs for any real economic loss suffered by the plaintiff as a result of the child's infringing conduct. Most importantly, the infringement suit becomes a learning opportunity for the child, rather than a windfall for the intellectual property owner.

c. Children's "Parody" Sites

The children's speech cases that involve creating websites critiquing school officials or fake profiles on social network websites frequently also involve the misuse of images protected by copyright. For example, taking the facts of the *Layschock* case, even assuming the First Amendment analysis is correct and the minor's speech is protected, the minor nevertheless arguably engaged in an act of copyright

on the specifics of a particular vulnerability and the personalities of the people involved on both sides of the disclosure conversation, "responsible disclosure" dynamics currently play out in varied ways and with mixed success. For example, one person's "responsible disclosure" is sometimes perceived by others as a competitor's employee seeking to gain commercial advantage. Recent vulnerability disclosure conversations between a Google employee and Microsoft have demonstrated this tension. See Graham Cluley, *Tavis Ormandy—Are You Pleased with Yourself? Website Exploits Microsoft Zero-day*, SOPHOS NAKED SEC. (June 15, 2010), <http://nakedsecurity.sophos.com/2010/06/15/tavis-ormandy-pleased-website-exploits-microsoft-zero-day/>.

²²¹ Creating clearer standards for best practices in vulnerability disclosure and its legal consequences will offer an important piece of guidance that will help children to use their code breaking skills constructively and share their findings appropriately. For a discussion of security vulnerability disclosure processes and the challenges they face under current First Amendment doctrine, see Andrea M. Matwyshyn, *Hacking Speech*, Nw. L. REV. (forthcoming 2013).

infringement by taking a copy of the principal's picture and reusing it in his fake profile. Thus, while his speech may have been protected, his use of the image may not have been. Although the child may be subject to a defamation claim because of the destructive product of his creativity, the borrowing of the principal's image itself should fall within an affirmative defense of childhood set forth in this section.

CONCLUSION

In this Article I have argued that four conflicting paradigms of childhood exist in digital spaces—contract, copyright, speech and privacy/information security. Because of reasons of development and fostering creativity, the contract law approach—the approach of a childhood exception—must win. Two changes in particular are warranted. The first is creating freedom to develop—extending a strong-version of each state's minority capacity doctrine to digital spaces, particularly with respect to questions of information flows and commercial privacy. The second involves creating a children's freedom to tinker. The crafting of an affirmative defense and exemption for childhood in copyright would build a notion of child protection and development into copyright law.