New Digital Media, Social Institutions and the Changing Roles of Youth

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NDM, Social Institutions and the Changing Roles of Youth

ABSTRACT

This is the third of three papers in a series. The GoodWork paper "Social Development in the Era of New Digital Media " delves into issues relating to NDM and development as they manifest in an individual's engagement with identity, domestic and peer roles; the GoodWork paper "Developing Minds and Digital Media: Habits of Mind in the YouTube Era" explores youth and development, as they relate to cognitive traits such as memory, literacy, judgment and multitasking . Together, these three papers provide a comprehensive perspective on cognition and social behaviors in relation to new digital media.

In this paper we analyze the developing individual as she assumes the roles of student, consumer, producer and civic participant. Drawing upon existing literature and primary research from the Developing Minds and Digital Media, GoodPlay and Trust and Trustworthiness projects of the GoodWork project at Harvard's Project Zero , we focus on, how new digital media (NDM) may be impacting these roles at different stages of development

* As a student: The typical student's high fluency with technology may be further eroding the teacher's traditional position of authority, particularly as student employ NDM as a research tool and as a social portal in the classroom and while completing homework.

* As a consumer: Young consumers can access a wide variety of online goods and services to enhance their personal status and to explore multiple identities. However, new sites of internet commerce with lax oversight may prove problematic for younger users who lack sophisticated assessment skills, mentoring, and an understanding of financial systems.

* As a producer: NDM offer the potential for informal learning and socializing online through mentor-driven practices based in affinity groups. Online engagement allows youth to bypass traditional content gatekeepers; in exchange they may have to learn how to express themselves effectively and how to deal with different audiences, including hostile or indifferent publics. Their work may be lost in a sea of internet content, or perhaps even downloaded with their consent.

* As a civic actor: NDM allow youth new ways to participate in cultural, societal or political change; the affordances of NDM present a wealth of options that can foster online engagement. Typical youth, however, remain focused on other priorities; they may engage with civic content merely through consumption of entertaining or slanderous politically-themed messages that course through the internet. Without robust assessment skills, youth may grow frustrated at the volume of conflicting partisan information.

INTRODUCTION

New digital media (NDM) are an increasingly inescapable fact of life in most middle-class households in the US and abroad, impacting how we interact with people at home, at work or school, with friends, and in the larger community. The digital world that we engage with has evolved rapidly, from the public release of the Mosaic web browser fifteen years ago to a sophisticated, integrated system of connections, networks and online information. In 1993, approximately 22% of the US population had a personal computer at home, and a little over 50% had internet access through work or school. ("Computer Use and Ownership Data" 1993). Today, computers and cellphones have become essential elements for domestic, social and professional communications (Kennedy et al. 2008; Lenhart et al. 2007; Madden and Jones 2008).

In this paper, we focus on the intersection between NDM, development and social cognition, on which little research has been conducted to date. In particular, we examine the fundamental implications of a potential alignment, on the one hand, or misalignment, on the other, between two entities: the NDM and human development in the social and civic spheres.

With respect to social development, the age at which the individual reaches a level of maturity and stability necessary for productive engagement with institutional structures is difficult to ascertain. According to most developmental stage-based frameworks, by the onset of the late teens/early twenties, an individual has successfully mastered a series of challenges and is able to function productively as a participant in an institutional setting. The law captures this regularity.

Whether or not the individual is in fact able to assume these responsibilities is another matter. Before the advent of NDM, a young person's participation in cultural institutions was monitored by authority figures –- educators, parents, coaches, and religious leaders – and limited to certain types of engagement for certain periods of time. The evidence presented herein suggest that NDM are arguably diminishing the impact of these gatekeepers and, by association, the institutions they represent. The result is an increase in both independence and responsibility for NDM participants; are they prepared?

To be sure, the fundamental desires which drive human interactions today -- love, respect, comfort, entertainment, and enlightenment, to name a few -- have not changed significantly. Nonetheless, the nature of NDM affordances in conjunction with institutional shifts may influence how messages are presented, and individuals behave. Does NDM engagement accelerate the pace of personal development? Or do these rapidly evolving digital-based technologies offer powerful affordances to unprepared users? To what extent do changes at the institutional level impact the demands on individuals, and their ability to meet them?

New Media and Youth

The impact of new digital media (NDM) – digitally-driven hardware and software such computers and cellphones, video games, social networking applications, as well as the internet -- is hotly contested. One camp suggests that intensive engagement with new digital media has an overall net negative impact on us physically, socially, and intellectually. This argument has deep roots in cultural anxieties about mass media relating to status and power, which date back to the advent of

mechanical printing on paper. More recent examples include a December 2008 report by the NIH and CommonSense Media which correlated high levels of media consumption with rises in childhood obesity, tobacco use and sexual behavior, low academic achievement, and drug and alcohol use (Stelter 2008). Multiple studies link video games and consumption of violent media to increases in aggressive behaviors (Anderson et al 2008, APA 2005). Some studies link online interactions to a decline in institutional trust (Nah et al 2003). At the core of these arguments is the belief that technology in general -- and NDM in particular-- threaten to impair, even dehumanize, traditional patterns of social interaction, and hamper individual intellectual capacities and literacies.

The opposing camp suggests that media engagement is, overall, a positive contribution extending social and intellectual life. NDM, the argument suggests, provides tools for individuals access information, share ideas and creations, and assume new roles and responsibilities at younger ages. These media allow individuals to follow their interests free of institutional, cultural or economic restraints; they also make available friend networks consisting of both strong and weak affiliations. Enthusiasts of digital media appear to be less concerned about the declines in traditional literacy skills and more excited about the potential to expand learning opportunities overall. The multi-mediated content of the internet, for instance, is a boon to those who excel at processing information visually, sonically, or in small chunks. A 2006 white paper issued by the MacArthur Foundation praises online "participatory culture" as a tool for independent exploration (Jenkins et al 2006); the 2008 research findings of the Kid's Informal Learning with Digital Media suggest that valuable social and intellectual knowledge can be gained from socializing online or engaging in sophisticated projects (Ito et al. 2008); the 2009 book *Grown up Digital* suggests that the Net Generation is "a remarkable bright community which has developed revolutionary new ways of thinking, interacting, working and socializing" (Tapscott 2009); a recent study by the Pew Internet and American Life research group seeks to reassure Americans that video games have the potential to facilitate social and political engagement (Pew 2008). At the core of these arguments is the belief that NDM can foster new types of social engagements and even improve relationships through enhanced communication.

Research Perspective

While we acknowledge that both camps make compelling arguments, our analysis here focuses on the unique intersection of the following perspectives:

* First, we examine behaviors through the lens of developmental imperatives: the social challenges facing a seven-year-old differ markedly from those of a seventeen year old, a thirty-seven year old, and so on. Throughout this paper, we draw upon rich sources of theory and research to help contextualize NDM engagements as they relate to development-specific challenges.

* Second, we examine behaviors with respect to their social context. A ten year old, for instance, may adhere to strict parental rules limiting media use at home, but play video games at a friend's house, and surreptitiously send text messages while in the classroom.

* Third, we examine behaviors in relation to relevant historical or social precedents, with an eye towards the emergence of practices unique to NDM engagement. Texting to a classmate during class, for example, can be read as a high-tech version of passing notes to one's friends; texting to a

friend who lives in another time zone and conducting a real-time text exchange, however, has no clear precedent in past behaviors.

Some youth are able to perform remarkably sophisticated feats: Jenkins highlights the achievements of a computer programming whiz, a self-made newspaper editor, and political candidates, all under the age of eighteen (Jenkins et al. 2006). These achievements share the common element that they were all facilitated by the internet. Heather Lam, for instance, runs *The Hogwarts Times*, an online zine written and read by fans of the Harry Potter franchise; the election for President of Alphaville, the largest city in the Sims Online virtual reality environment, pit a 21 year old Delta Airlines ticket agent and a 14 year old middle schooler in a hotly contested decision (Jenkins 2004). Accordingly, we are reluctant to posit standard developmental capacities pertaining to any particular age cohort. Given the individual variations in development, the concept of 'adolescence' is less defined by a fixed chronological age and operates more as a textual referent for that stage where abstract thinking emerges, identities are being tested, and peer relationships are of paramount importance.

We find a rich vein of inquiry relating to youth's voluntary engagement with creative and civic communities around more informal, participatory cultures, communities with "relatively low barriers to artistic expression and civic engagement, strong support for creating and sharing one's creations, and some type of informal mentorship" (Jenkins et al. 2006). Similarly, online participation has the capacity to operate as a laboratory for social experiments, with both positive and negative implications. To what extent might NDM extend youth's abilities for enhanced learning experiences? Are the teens cited by Jenkins exceptionally gifted with or without NDM, or are they typical kids able to appropriate the web to serve their own purposes? In the following chapters, we consider how four community roles -- student, consumer, producer, and civic actor -- are impacted by the affordances the NDM offer, and how youth engagement in these online participatory cultures relate to their developing capabilities.

Research Methodology

Our analysis draws on the existing literature and primary research from the Developing Minds and Digital Media (DM2), GoodPlay, and Trust and Trustworthiness projects of the GoodWork project at Harvard's Project Zero. Through these empirical studies, we are exploring questions about how youth are changing today, as a result of broad social and cultural changes, including the advent of new digital media. This body of work focuses primarily, though not exclusively, upon NDM and development as they manifest in an individual's engagement with cultural institutions. When appropriate, we indicate the sources of quotations and examples.

Throughout this paper, we focus primarily, though not exclusively, on young people. We apply the terms "child", "tween", "teen", "adolescent", and "youth" to distinguish among subtle points of development. The term 'child' refers to someone who adheres to concrete, pre-abstract patterns of thought and behavior; children are typically below the age of 12. The terms 'teen' and 'adolescent' refer to someone who is more experienced, capable of abstract thought and wrestling with a host of emotional, social and physical developmental challenges. Such youngsters are typically 15 years of age or older. The term 'tween' refers to someone in the liminal space between childhood and adolescence.

I. THE CHANGING ROLE OF THE STUDENT

INTRODUCTION

This chapter focuses on the social interactions unique to the formal school setting and how the role of the student has been impacted by the introduction of new digital media. While considering other cohorts, our emphasis falls on the socially transformational period known as adolescence.

It bears noting that the student-teacher relationship, at least for the elite schools participating in the DM2 project, has been liberalized over the past decade. Educators cite constructivist and multiple intelligences pedagogy, coupled with newer teachers who have never employed a 'top-down' instruction model in the classroom, impacting both instruction and the relations between student and teacher Educators are increasingly building flexibility into assignments, allowing more work to be driven by student abilities and interests; for example, one DM2 educator asks students to present their findings in any format they like, with the results ranging from PowerPoint presentations, videos, research papers, and 3D models (DM2 unpublished notes 2008).

Similarly, most DM2 educators applaud a new emergent informality between student and teacher. Students can more freely – and frankly – speak with a teacher; the practice of desks in orderly rows facing the teacher at the head of the classroom is giving way to different configurations – circles, tables, etc. The classroom is being redrawn to accommodate both individuals and groups.

However, at the end of the day, the educator has a mission: to educate his students. It has never been an easy task. And while the liberalization of classroom dynamics have generally improved teaching's effectiveness, at what point is too much student freedom? How can the educator capture a student's attention when her friends, or the internet, are just a few keystrokes away online?

a. Schools, Students and Social Development

Despite the relatively limited amount of data available, the typical student interacts with other students, teachers and other non-family authority figures, and the operation of a large institutional setting. The school setting differs dramatically from the domestic sphere, and the successful student learns to negotiate with a wide variety of peers, non-parental authority, and working within a bureaucratic structure.

Students and Social Development

Most social developmental theories devote limited attention to nonparental social development or to the intersection of the individual with school peers and school contexts (Eisenberg et al. 2007: 678). Research findings suggest that the typical classroom environment does not encourage prosocial behaviors (Hertz-lazarowitz 1983); mixed-aged classrooms promote a more cooperative atmosphere than age-segregated rooms (Dollman et al. 2007; Eisenberg et al. 2007: 683), and programs

implemented in schools to promote prosocial behaviors remain insufficiently tested (ibid).

In what follows we survey a young person's typical elementary and secondary schooling experience. We do not examine the social implications of home schooling; while it is a growing and important phenomenon, it remains a minority position: as of 2003, approximately 2% of American children are homeschooled versus those who attend public or private educational institutions ("Homeschooling in the United States 2003" 2006).

The Student-Student Relationship

A young person's engagements with peers prior to school attendance are generally limited to neighbors and the caregiver's extended social circle of family and friends. Depending on the socioeconomic status of the child's family, the child may engage with peers in a daycare setting or participate in "playdates" arranged by the caregivers of the participants. Fears of 'stranger danger' have led caregivers to limit outdoor play; the increased socioeconomic 'balkanization' of neighborhoods (Bishop 2008) suggest that a child who does engage in outdoor play is unlikely to associate with peers from significantly different backgrounds. The same sorting mechanisms in place before schooling starts continue once school is introduced. School may constitute a student's first extended exposure to a broad array of others whose values, beliefs, behaviors, appearances, and tastes may differ dramatically from his own.

School is typically a critical locus of identity for the developing child; she is both defined by the system and utilizes it to define herself. Successful peer relationships are in part determined by a child's social and academic standing in school (Mei, 2006). Does she consider herself an athlete, a musician, a cheerleader, a math whiz? Has she been placed in an accelerated academic program ("I am smart"), has she been punished for breaking school rules ("I am a rebel")? By adolescence the youth strives for increased independence, parental influence recedes and peer relationships become of tantamount importance. The rapid pace of girls' development vs. that of their male peers may manifest in the school setting with a more mature attitude towards schoolwork.

The institution of school itself poses social challenges for the student. In school, the student will be part of a large peer group; the average class size in American elementary schools as of 2003-04 was 15 pupils/class for preschools, 20.4 pupils/class, and 24.7 pupils/class for public secondary schools ("Digest of Educational Statistics, 2007"), with lower numbers for private schools. While students may share similar socioeconomic and taste backgrounds, temperament and personality differences crop up In the school setting, exposure to others is non-elective, and a student is confronted with and forced to address her social affiliations, enmities, and associations on a daily basis.

The Student-Teacher Relationship

School may be the first time that a child has been relegated to the care of adults (teachers) who have somewhat different goals and priorities for the child than her caregivers. However, a child's success in this realm away from home -- characterized by an unfamiliar space and markedly different rules relating to behavior, time, and tasks -- is largely dependent upon her prior experiences in the home.

The rules of this new child-teacher relationship may prove challenging to younger students. Successful adjustments to the school's novel social environment depend less upon the child's temperament than upon guidance received from parents prior to the onset of school (Stright et al. 2008).

The student-teacher relationship significantly impacts the student's social and academic development. A teacher's level of confidence in the classroom, coupled with expectations of students' performance, positively correlate to students' levels of self-esteem and competence levels (Wigfield et al. 2007: 976). Educators who engage students on a sympathetic level, as evidenced by trusting, caring and respectful behaviors, can become stable mentors for students in an often chaotic world (Black 2006; Wigfield et al 2007). A student who does not adapt to school rules risks not only disrupting the often fragile balance of the classroom environment, but alienating her teacher and negatively impacting her overall educational experience.

Teachers strive to balance the maintenance of an orderly classroom environment with age-appropriate consideration of individual and collective student needs. A socially appropriate student affiliates himself to his teachers in a balanced way-- not too clingy, not too detached or indifferent. "Children exhibiting a high level of dependency can be very demanding of school caregivers' time...and interfere with the instruction or supervision of larger groups of children, proving to be frustrating as well as a practical impediment to teachers' professional responsibilities". (Wood et al. 2007: 823). Other behaviors such as not working on classroom activities, demonstrating a lack of self-control, showing up late, exhibiting rude behavior, talking out of turn, disrespecting others or demonstrating poor motivation are categorized by the polite term "off-task" and are condemned as negatively impacting pedagogical efficiency in the classroom. ("A Call to Order", 2008; Pate-Clevenger et al. 2007). The influential psychologist Erik Erikson construes these variant behaviors as indicators that earlier stages have not be adequately mastered; from an early age, a nonconforming child may be labeled a 'troublemaker' and lose a measure of self-esteem and sense of competence.

The student-institution relationship

The child as student, for the first time, must deal with significant change of scale, such as the physical size configuration of the building, and the number of people that occupy it.. Similarly, she is now part of a collectively and hierarchically governed bureaucratic system which can be difficult for students to engage with and slow to react when such engagement does occur.

A school's primary function remains tuition. However, schools nowadays assume a more activist role with respect to a child's social and emotional well-being; this activism is oft0-time compensation for parents who appear to be negligent, abusive, or mentally unfit for the tasks (Ackerman 1997; Reupert and Maybery, 2007). Behavioral issues are often interpreted by educators as the result of inadequate parenting; school-based programs addressing 'character education' or 'bullying interventions' are popular but most have been found to be of limited impact (Merrell 2008).

In the following sections, we examine the changing role of the student enabled by NDM with respect to specific behavioral shifts.

b. NDM, students and social behavior

According to recent data, virtually all high school students and approximately half of junior high school students own a cellphone ("A Generation Unplugged" 2008). While parents often provide their children a cellphone as a way to ensure both casual and emergency communications, teens see their phones as a status symbol, an entertainment vehicle, a camera and music player, and an efficient way to stay in the social loop (Turkle 2007). Different demographics utilize this communications technology in different ways: a preadolescent male, for instance, may be more likely to use the web and game options on his phone more than its communication properties. A sixteen-year-old female may use her phone as a way to monitor changes in her social network, and even sleep with it under her pillow so she won't "miss anything" (Stald 2008).

In addition to cellphones, many students have access to computers at school. A networked laptop can provide students with instant access to further educational materials, or can function as a portal to live chats, emails, games, or entertainment sites. Laptops owned by the school can be confiscated; managing technology can be more problematic when dealing with a student's personal property.

c. NDM, students and social behaviors – implications

A critical element of a successful classroom is maintaining order, which often is interpreted to mean "quiet conformity". New digital media, however, provide students with novel tools with which to contest or bypass school rules in a few basic ways:

- Reconsidering attention:
  Young adolescents, in particular, are often characterized by hypersocial behavior and extreme sensitivity to peer relations and status as they attempt to define who they are; networked devices such as the internet, cellphones with texting and IM capacity allow students to continue interacting with friends regardless of context. The pervasive use of these tools can distract students from tasks at hand, and turn unmonitored assignments into a collaborative effort with classmates.

- Challenging the Educator as a Unitary Authority:
  Conversely, cellphones and networked computers in the classroom afford students a powerful portal to a growing compendium of knowledge relating to classroom curricula as well as NDM themselves. Educators who are less comfortable with these tools may find their authority and knowledge base challenged by web-enabled students.

Reconsidering Attention

The ubiquity of NDM networked devices (such as cellphones, etc.) in the classroom may in some cases augment formal instruction, or facilitate peer to peer socialization. Regardless of the activity, however, cellphones and laptops may distract students from what is happening in the classroom.

* Cellphones

Before students brought cellphones with them to school, social conversations were conducted in hallways between classes, the cafeteria, the locker room -- interstitial spaces devoid of meaningful adult supervision. Conversations in the classroom were forbidden, and they remain so; the use of cellphones in class is generally considered distracting and rude. However, in the past, illicit exchanges were conducted via the passing of written notes, which was fraught with its own set of risks around botched deliveries or interceptions and disclosures.

Despite these material and cultural prohibitions, the cellphone (and related variants such as instant messaging online) has become the preferred tool for conducting a conversation in the classroom-- an unobtrusive method of circumventing rules that define certain spaces as conducive for socialization and others off limits. Its texting capabilities and wireless routing have eliminated some of the perils associated with class whispering and written note exchanges, and allow students to chat with one -- or many -- during class time. The participants may be in the same classroom, in the same school or someplace geographically remote from the texter; a student, for instance, may be casually chatting with a friend from camp she met the previous summer who lives in Amsterdam, or frantically trying to remedy a social error she made earlier in homeroom. The more daring student may go as far as to make a call during class, conspicuously communicating to everyone in the room that engaging with the real-time conversation, respecting the class leader, or abiding by the rules of the school are not priorities for her.

* Laptops

Educators report that laptops are frequently in use during inappropriate parts of the classroom instruction; one teacher of a performing arts class was taken aback when one of his students, in the audience to critique a colleague's performance, opened her laptop during the show. The educator insisted that he could see no relevant reason for referring to the internet under these circumstances (DM2 unpublished notes 2008).

One might argue that teens' predilection for texting or chatting with one another is simply a high-tech variation of note passing. Interestingly, texting practices between peer have also risen even in the unregulated spaces beyond the classroom; students will text each other across a room at study hall, for instance, or in a more informal environment where discussion is not discouraged (DM2). Our own data document an adult perspective; one needs to speak with the texters themselves to understand to what extent this practice is motivated by a desire for freedom from interfering adults, a way to negotiate levels of privacy, a strategy for managing the experience of intimacy with others, or simply an infatuation with using technology.

The question of whether and how access to such devices should be permitted is controversial. Some high schools confiscate students' phones at the beginning of the school day, and return them when classes have been completed. Other schools allow students to keep their phones if they are shut off, while others, mindful of parental desires for uninterrupted contact as well as concerns relating to 1999's Columbine shootings and the attacks of 9/11, allow full cellphone access to students throughout the academic day.

Challenging the Educator as the Unitary Authority

* Technical savvy

While older (and more experienced) educators often wrestle with the fundamental paradigms of the web and cultural culture, their students are likely to be 'digital natives' --at home in a world of digital, networked, portable connectivity, email, steampunk, hacking, and blogging. Even those students who are not digitally inclined are more aware of NDM by virtue of broad cultural exposure. Adults coexist in the same cultural mix, but may have the additional challenge of having to "unlearn" certain assumptions; they may face steep learning curves as technologies grow more complicated.

In nearly all the interviews we conducted as part of our DM2 project, students were described as "technically savvy" -- especially in relation to the educator's own cache of knowledge on the subject. Educators report students assisting faculty with technical problems ranging from the operation of a projector to the development of a comprehensive technology plan for a new student center. Similarly, schools' attempts to manage student access to the internet are easily bypassed by technically knowledgeable students. Alternate mirror sites for blocked websites can be found online and are shared between students; blocked network access by an institution are easily bypassed by the purchase of a individualized web feed device. Administrators at a New Hampshire private school, for instance, shut off internet access for one hour during study hours; they were disturbed to learn that students quickly figured out how to bypass the school's network in order to gain access to the web through external networks.

* Content vetting

Before the advent of wireless internet connectivity, students with a special interest in a particular class or lecture elements of a lecture would need travel to a library, search on local electronic databases for references, and then locate hard copies of magazines, journal articles, and books, or older pieces on microfilm and microfiche. At no point would the student have had immediate access relevant to the teacher's lecture or class discussion. Today, it is not uncommon for a high school student in an internet-enabled classroom to investigate different elements of a lecture while the teacher is speaking, and to challenge the teacher if she locates information to the contrary. In some instances, independent student investigations are subsequently integrated into the curriculum. One high school science educator with whom we spoke incorporated a video sent to him by a student into his lesson on the conductivity of electricity; another teacher we interviewed relies on her web-savvy students to update her on the latest Broadway theatre news.

While students have long shared their informal learning with their teachers is not a new practice, NDM allow students to find material quickly and easily and to share it with others. Students are thus able to take a more proactive role in the education process by using the internet to research wide-ranging topics of interest and connect with like-minded students around the globe, However, students sometimes capitalize on these affordances with less academic aims in mind: to log online and socialize with peers, thereby contesting the authority of the educator.

* Reinventing homework

The same hypersocial practices involving NDM appliances in the classroom collude around homework practices after school. While the standard definitions of "homework" don't mention who

exactly is presumed to be undertaking the work at home, the popular understanding of the term imagines an individual in this role, at a desk, surrounded by material resources (a book, a calculator, and now, a computer). Mentoring from a parent or older sibling is considered acceptable; allowing others to complete the assignments, however, is as in the past considered a form of fraud.

With the ease of networked electronic communications and internet access and the generally unsupervised nature of this enterprise, homework is now a largely collaborative event at the intersection of school, home and peers. A number of our teacher informants have noted that students often confer online about an assignment, distributing responsibilities and trading answers. A young student, for instance, may trade off completing different math problems with friends in his algebra II class, or barter math answers for science answers. While such a practice may constitute an admirable example of collective intelligence in action, it contradicts the original intention of traditional assignments. Nonetheless such collaborative practices have become so common that many teachers have accordingly adjusting their homework assignments, or have dispensed with homework altogether.

Those students who are not collaborating on homework assignments with peers over the answers may be chatting online instead, or simultaneously engaging in homework and chat. Our informants report that it is often clear from incomplete or incoherent assignments that students were likely interrupted mid-task and never returned to complete it. Educators report that talented students can effectively multitask; others, however, struggle with peer expectations that they always be available to chat versus adoption of a more appropriate, unnetworked, highly focused study strategy.

CONCLUSION

NDM shifts the balance of power in educational settings towards the student through challenges to the educator and his mission. A lingering question is the extent to which developing children benefit from circumventing the existing classroom hierarchy. Exceptional students reap the benefits (Jenkins et al, 2006), but one wonders how the typical student fares in a social environment in which the metacognitive ability to multitask is critical for social and academic achievements

Attempts to control NDM use in schools have met with limited success as students find ways to circumvent attempts to block sites such as Facebook and MySpace, and surreptitiously send text messages on their cellphones during class. Once a solitary endeavor, homework is now one element of a social evening online. In both instances, NDM challenges the organizational structures of an educational system based on evaluating the performance of individuals. Rather than trying to eliminate NDM and their attendant behaviors from the classroom, educators and administrators would do well to acknowledge the changes that the NDM engenders, and devise ways to incorporate these new habits into the educational process.

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II. THE CHANGING ROLE OF THE CONSUMER

INTRODUCTION

We focus on the young person's role as a consumer; we have in mind, for instance, a child who can influence his caretakers' purchasing decisions, or a teenager who can make his own purchases.

a. The marketplace, youth and social development

For most of childhood, money remains firmly in the hands of a child's caretakers. The typical child may be provided with an allowance from the caregiver, perhaps in exchange for the completion of domestic tasks. As the child matures, he may take on a job outside the home; and in some cases he or she will become financially independent

In the United States children are introduced to the ways of the market through various social spheres -- at home, through friends, through school and through the media. Children from two to eighteen are lucrative commercial market targets, traditionally reached through television commercials and programs. No child is born with an understanding of basic market concepts; these are generally learned through a combination of informal and formal instruction. An international study (Burris 1983) demonstrated that younger children do not fully understand what constitutes a commodity, how the value of an object is assessed, etc. Younger children (ages 5-7) identify commodities primarily by their physical characteristics divorced from financial value. Children at this stage, have claimed, for instance, that a cow cannot be bought and sold because "it won't fit into the car" and that a diamond ring should be relatively inexpensive because of its diminutive size (ibid).

A child's understanding of what can and cannot be exchanged for money broadens every year; by the age of 10-12, most children acknowledge that other human beings as well as intangibles such as "happiness" and "love" cannot be bought the same way one can buy a toy (Burris 1983: 797).   While Burris' study suggests that the basics of the marketplace may be beyond the grasp of the typical 6 year old, Posnanski et al. counter that young children have the capacity to understand the market and recommend 'financial literacy' classes as early as primary school (Posnanski 2007).

How vulnerable children are to these mediated messages, however, remains unclear. For some observers, the media exploits children's lack of experience and self-control, putting them at the mercy of rapacious advertising assaults. Others maintain that childhood is a cultural construction and that children should be viewed not as s passive victims but active co-agents in interpreting their media experiences (Schor 2008).

Even in a digital era children are primarily reached by advertisers through TV viewing. A 2006 Kaiser Family Foundation study reported 61 percent of infants watch an hour of "screen media," primarily television, a day, while 90 percent of children 4-6 watch an average of about two hours of television. As a child reaches age 7, viewing rates soar (Kaiser 2006). Since children's television was deregulated in 1984, the amount of advertising and programming targeted to children has jumped twentyfold ("Committee on Commercialization of Children's Television" 1988; Reese

1998).

<u>b. NDM, youth and the online marketplace</u>

Commercial interests online

With the internet, youth are exposed to advertising and consumer culture in new ways and are given many more opportunities to be a consumer. The amount of time spent online by youth is increasing, and advertisers are seeking and reaching young consumers on the internet (Calvert 2008, Charles 2006, Nielsen 2008). While commercial television restrictions have been liberalized, rules governing online advertising are virtually nonexistent; internet advertisers pitch to children through an innovative mix of banner advertisements, branded online games, and stealth advertising strategies (Calvert 2008). In short, youth are immersed from an early age in a culture of ubiquitous advertising.

Youth using the internet will likely engage with at least some businesses online that are not only unconcerned with a child's welfare, but actively seek to exploit his lack of experience and immaturity for financial gain. Whether they succeed depends on the circumstances of a child's domestic situation, moral, economic and cultural influences, experiences with advertising pitches, and peer trends.

Younger children and the online marketplace

Early education may provide a positive foundation for future market engagements, but younger children cannot themselves enact any financial transactions , Children ages two to fourteen still impact the marketplace indirectly by influencing parents household purchases totaling approximately $680 billion a year (Schor 2008). Depending on her age and her abilities to navigate online, a child may visit online retail portals but is unlikely to be able to complete a transaction (Rideout, Vandewater, and Wartella 2003).

* Neopets

Many children's games have often incorporated financial elements; e.g., children pretending they work at a restaurant may write up a menu, complete with prices, and write up bills. A parent can purchase her child a toy wallet, a toy cash register, and even a toy safe for keeping the child's toy money safe. The online game "Neopets" offers a more sophisticated framework for financial transactions between a central bank, and multiple competitors. A Neopet user is encouraged to earn "Neopoints" through playing games, investing in the stock market, trading, winning contests and setting up one's own shop. These points are used to lavish one's virtual pets with food, toys and clothing.

Neopets may be the first exposure a child has with financial speculation and a currency-based system of earning and spending. Ito suggests that Neopets participants engage in a sophisticated trafficking of goods and wealth in guise of a social networking game, an interactive online space where children can engage in a financially-driven world separate from that of their parents: "The virtual economies

of Neopets embody meanings and exchange values that are internally consistent and socially consequential but insulated and largely invisible to the regimes of value that adults traffic in..." (Ito 2006). Observers criticize Neopets for situating the play experience in a highly branded and commercial context, and for implicitly encouraging gambling as a way to increase one's earnings. (A more holistic examination of the social attributes of Neopets can be found in the companion GoodWork paper "Social Development in the Era of New Digital Media" by Davis et al.).

Late Childhood, adolescence and the online marketplace

Adolescents are better able to understand the complexities of the marketplace (Suiter & Meszaros 2005). The teen demographic is a formidable market force -- as of 2000, the average American teenager had access to nearly sixty dollars of disposable income a week; his spending power, adjusted for inflation, is six times that of the average teen forty years ago ("Youth, Inc" 2000.). Just under half of high school students own their own credit cards, while a slight majority use a card issued to their parents' account (Simon 2008). Unencumbered by significant expenses such as a mortgage, middle-class youth income is largely discretionary, spent on status-enhancing and identity-defining items such as clothing, electronic devices, and entertainment ("Adult concerns pinch teens spending" 2008; Foley 2007). The age at which a young person is legally able to work and earn his own pocket money coincides with the time when she is beginning to explore who they are and who she'd like to be.

Although teens continue to spend their money in traditional stores, they like to shop online as well. A decline in free time coupled with a newly restrictive environment (Miller 2005) and limited transportation options have discouraged the 12- to 15-year old cohort from engaging in the contemporary adolescent practice of congregating at the local shopping mall. Youth have not stopped hanging out at the mall, suggests boyd (2006); instead, they have migrated to online spaces. Internet 'cybermalls', which blend social networking and online shopping, were an early attempt to fuse retail activity with social networking (Wang 1999).

That awkward marriage of online and offline consumer practices has given way to more sophisticated methods of engaging teen audiences online in commerce-based activities. Often these activities are difficult to identify as promotional in nature, masquerading as advice or gaming portals and specifically appealing, respectively, to female and male teenagers. The retailers Macy's, Crate and Barrel and Pottery Barn, for instance, have each created separate websites targeted towards a younger audience, and feature fashion tips, celebrity news, and other cultural content implicitly tied to product sales (Geisen 2005).

c. NDM, youth and the online marketplace - implications

We investigate NDM, youth and the marketplace as they relate to two major themes:

- Freedom to Explore/Express:
  For youth fortunate enough to have both web access and some disposable income, the web offers more status markers such as apparel, music and gear to purchase, and to help shape

their emergent identities. We examine the phenomenon of the leading online resellers sites eBay and Craigslist, and how these pose unique challenges for less savvy consumers.

- Freedom to Appropriate:
  The internet also provides access a world of digital content, and complications with respect to copyright. Much of the material online, such as images, files, and text, can be downloaded for free, and without crediting its source.

Freedom to Explore/Express

Internet shopping allows youth to exert more decision-making control over purchases; these young people have proven to be generally thoughtful shoppers overall, exploiting the internet's capabilities to research different selections online, test out different possibilities at a local store, and then return to the web to assess prices and finally make a purchase (Washington Post online chat, 2007). Such shopping also enables youth to experiment with identity markers, explore the cultural landscape in depth, and identify online reflections of their own self-conceptions. "Teens [are] going around and trying on these different identities," said CJ Pascoe of Berkeley's Digital Youth Project in the 2008 PBS documentary *Growing Up Digital*. ""I'm a Goth" or "I'm a punk rocker" or "I'm a surfer" or ""I'm this or that." And the Internet has allowed them to display that identity in a very dramatic and very succinct way" (*Growing up Digital* 2008). This documentary profiled youth internet practices, including teen identity experimentations. Jessica Hunter, for instance was a shy teen who was harassed at school because she was seen as being 'different'. Online, Jessica was Autumn Edows, a popular Goth artist/model striking provocative poses (ibid).

Similarly, a student at a private school in rural New Hampshire is a fan of obscure LA hip-hop band; he found an MP3 recording of the group on the internet (DM2 unpublished notes 2008). Both Autumn Edows and the New Hampshire teen needed to augment their identities with material evidence: an MP3, lingerie, makeup, etc. In the online marketplace, teens have been empowered to control their emerging identities to a greater extent than before. A teen with means and resources has the ability to investigate styles, ideas, and creative work that are not part of the mainstream discourse, and then incorporate these ideas into an ongoing identity experiment through clothes, hobbies, leisure pursuits and other identity markers.

In most instances, the age of the consumer is irrelevant to the process of purchasing goods online. The shopper, usually identified only by an ID number or an email address, interacts with a store's online interface from start to finish. Most internet sites do not inquire about a purchaser's age; there is no legitimate system in place to verify online age claims if one were to ask. When sites attempt to limit access according to age, young registrants will often lie (Thierer 2007). When youth inflate their age to gain access to social networking sites, any repercussions will likely be social. Youth, however, can also gain access to sites promoting gambling, pornography, or the purchase of cigarettes, liquor or firearms. While youth under 18 are not allowed into brick and mortar adult-only establishments, it is easy for a young prospective speculator to gain access to their online counterparts. For youth eager to incorporate elements of an adult lifestyle, these sites are appealing, accessible and (at least often) affordable.

* New Marketplaces: Ebay and Craigslist

The savviest shoppers might visit one of the internet's 'flea market' sites such as Craigslist.org, etsy.com or ebay.com; these retailers offer a unique model of online commerce which combines elements of contemporary internet shopping with those of a traditional barter exchange. A Craigslist or eBay seller may be a business, a professional independent reseller, or an amateur reseller.

A 2006 survey by Rapleaf documented that consumers found user ratings valuable in assessing the credibility of a seller; over 70% of buyers reported not doing business with a seller because they didn't get a good sense of trust ("Rapleaf Transactional Trust Survey Results" 2008). eBay's system of vendor recommendations provide the buyer a selective record of the vendor's transaction history as a way to assess his performance; high vendor ratings speak of a level of credibility, low ratings less so (de Laat 2005). Sites which employ a user rating system, however, do not often earn the unqualified trust of site participants; a recent eBay boycott suggests that community ratings systems may help to assuage some, if not all, transactional concerns ("eBay 'boycott' shows lack of trust between buyers and sellers" 2008).

Craigslist is a popular site which has no ratings and a somewhat riskier system of exchange. The site is organized by city, state or region (such as Boston, East Bay, Lansing, or the Czech Republic). While eBay vendors need to register and pay a fee, there are no transactions costs associated with Craigslist postings, and no easy way to track the reputation of a seller. Anyone, regardless of age, can post an ad or respond to one. Sites such as craigslist might be best understood as a "mercantile wiki", where participants collaborate remotely to construct a site for informal business transactions.

What makes Craigslist potentially pernicious for less mature individuals is its frequent practice of face to face, real-life exchanges. Craigslist buyers and sellers interact initially by email, and then meet face to face to either pick up or deliver the item. The most common grievance against the Craigslist business model is that individuals fail to show up; most transactions are completed with minimal problems reported. However, there is a risk that a less than trustworthy individual may be taking advantage of Craigslist's relatively lax system of self-monitoring to contact individuals for some other purpose. The site includes tips for participants which recommend meeting in a public place, having someone join the buyer at the point of sale, and trusting one's instincts; it is debatable whether a younger person would read and adhere to these suggestions, given that the adults on the site rarely do. There were no relevant warnings pertaining to the behavior of a Seattle web developer, for instance, who posted a lewd request to his local site, and subsequently published the names, addresses and images of all the respondents to a public web page (blue 2006).While there are minimal reports of exchanges which Craigslist system for the most part works well, it is primarily designed by and for adults who have more experience dealing with strangers, reading between the lines of a posting, and knowing when to abort a deal.

Freedom to Appropriate

One of the major benefits of the digital economy is the ability to access and copy a variety of materials for personal use. In the past, information was shared in paper-based books, magazines, and newspapers; music notation was fused to cylinders, tubes, vinyl, or tape. The advent of broadcast dematerialized information; NDM reconverts this information into a digital code which can be uploaded to the web and shared with fellow participants in the wired world. The process works in reverse, as well -- most online content can also be downloaded to one's personal computer.

Technologies such as BitTorrent or free peer-to-peer (P2P) applications such as LimeWire or Kazaa allow users to search for specific content and transfer high volumes of digital data across a network. A 2007 survey by the BSA, a copyrights protection advocacy group, found that 30% of children admitted to downloading music inappropriately and 8% downloaded a commercial film for free (BSA via Hefflinger, 2007). Youth also have access to noncopyrighted content on the internet which may be used to augment original work. A student cannot always find a completed research paper online which exactly suits her needs but students can easily assemble a "remixed" paper, constructed of passages from multiple sources. Plaigarism concerns have fueled a cottage industry of programs to check student work for inappropriate content ("Owens Library Guide to Diagnosing Plagiarism"), with the site Turnitin.com has become popular with high schools. Students can also pay an 'online tutor' to assist with assignments, which in some instances amounts to outsourcing one's homework to a third party.

There are a variety of reasons why children download materials from the internet inappropriately. First, the practice is ubiquitous -- all age cohorts engage in some amount of illegal downloading, although teens are particularly egregious offenders (Madden and Lenhart, 2005). Research also suggests that the laws governing copyright are confusing and have not been adequately explained to the general public (Palfrey and Gasser 2008, Williams 2007). Despite a number of online resources on copyright designed for classroom, educators shy away from addressing this complex issue with their students. Parents are similarly confused, and peers may not be the most reliable source for vetted information on copyright, leaving a conscientious child to his own devices. A *Born Digital* informant, for instance, said he learned about illegal downloading in a haphazard manner by reading everything" online (Palfrey and Gasser 2008: 137).

While portals such as iTunes allow users to legally purchase songs for a minimal price, younger teens and tweens have limited access to both funds and credit cards. Older youth increasingly have both the funds and the plastic to make online purchases, but still persist in illegal downloading practices. The overwhelming sentiment of focus group respondents is that downloading material from the web is a victimless crime (Palfrey and Gasser). The victims in this crime, youth suggest, are 'only' corporations and rich celebrities who are already financially well off and don't need that extra dollar (Palfrey and Gasser 2008: 138). This testimony correlates with our own findings: while students today tend to respect rules prohibiting harms against a person, they are relatively indifferent to harms inflicted on an institution. Youth often distinguish between independent musicians who should be supported and commercially successful artists affiliated with major record labels who don't need/deserve their money. Beyond the confusion around copyright law, prevailing social norms regarding downloading play a role in determining teen behaviors.

It is worth noting that over the last few years, rates of the illegal downloading have declined substantially, from 53% in 2004, 32% in 2006 to 30% in 2007. The decline is attributed to fears of downloading a virus, inviting legal action, downloading spyware and getting in trouble with their parents (Hefflinger 2007).

CONCLUSION

One's access to expendable income and credit exchange play a critical role in the new digital marketplace, especially for youth; more privileged adolescents can enjoy the benefits of online shopping that credit card ownership affords, while their less privileged peers are limited to sites that accept bank information, or shopping offline. The consumer would do well to understand the basics of online exchanges, including the potential hazards associated with anonymous contacts, shady web sites, and phishing scams (fraudulent messages claiming to be from an institution such as a bank which request account access details; the information is then used to compromise one's accounts).

The typical youth is not particularly interested in spending money for digital materials offered online that he can secure by other means for free. Ironically, the ease and ubiquity of digital duplications may serve to devalue the content as a sellable product. How do the laws of supply and demand and pricing operate when there is a virtually limitless supply of a digital product? The debate around copyright, ownership and digital distribution promises to continue unresolved for the foreseeable future as well-funded copyright holders fight to continue the practice of extracting profits from the use of cultural properties.

Looking ahead, one can anticipate more websites specifically branded for youth consumers, and especially more product placement in youth-oriented online spaces. Already, the popular social networking site FaceBook inserts subtle paid promotions onto a user's homepage along with more traditional margin ads. For instance, in January 2009 the fast food chain Burger King launched an innovative marketing gambit: remove ten of your Facebook friends and earn a free hamburger (Lee 2009). Burger King then targets those 10 former friends for future Facebook promotions. In this instance, these individuals are converted from friends into currency, and marketing fodder. At this point, it is too early for data on the success of this campaign. Given the ease with which one can add and remove friends on most social networking applications, it promises a new revenue stream for youth-oriented companies, and benefits for those willing to trade associations for material goods.

III.   THE CHANGING ROLE OF THE PRODUCER

INTRODUCTION

In this section, we continue our focus on the web as a new interactive, cultural space. The role of producer is defined here as someone who creates an original object or communicates an idea – the ranks include artists, scientists, writers, craftspeople and the like. We explore different modes of engagement relating to production, distribution, and feedback mechanisms.

a. Production and Social Development

During early childhood, a child learns to manipulate tools such as paints, crayons, and chalk in the service of simple communication and expression. During the preschool years a child's creations become more deliberate, symbolic and culturally situated; enthusiastic scribbles may begin to assume definable shapes and bear identifiers such as "mom" and "dad".

Engagement with freeform play typically diminishes as a child enters school. School assignments play a large role in generating feelings of competency or ineptitude; grades provide a quantifiable measure of a child's abilities. While a child who previously excelled in drawing may learn that she enjoys the sciences or language instruction even more, other child with gifts in the graphic or musical realm may find themselves at a disadvantage in the traditional school system. Depending on the student's circumstances and the rigor of available support systems, a child's skill in visual or musical creative productions may be actively cultivated by nurturing adults, channeled into areas of which hold promise for achievement such as academics or athletics, relegated to hobby status, or abandoned entirely.

As the young person matures, the struggle for praise and competence is superseded by more pressing concerns relating to identity and future adult roles. Creative impulses can be channeled through a variety of formal school- or activity-based groups (such as the Drama Club or the 4H Club), informal associations that are shared with only a few close friends, or the process and results can be for the producer's enjoyment only.

b. NDM and production

NDM are typically not employed by the youngest children. Fewer than 3% of children age 2 and under have any contact at all with a computer; the 2% who do are usually sitting on a parent's lap while she uses the machine. By the age of 6, fewer than one child out of five uses the computer at all, 6% play video games, and 3% are managing to log online (likely facilitated by a caregiver) (Kaiser 2003).

While less is known about the creative output of the 'tweens' ages 7 to 11, a typical tween's

engagement with NDM for creative pursuits at this age is likely unremarkable, honing her skills with games and online explorations. As adolescence looms, experimentation through cultural affiliations, fashions, friends, beliefs, and expressions drive the sometimes rocky development process.

By the age of 12, the majority of American youth exhibit a range of competencies both on the computer, and on the internet. 19% of teens have their own blog, with 25% of 15-17 girls and 15% of older boys blogging (Pew 2005). In terms of politically-themed online production, the most engaged group are those 18-29; 12% of this group post political content online (Pew 2008 election). It is this cohort where creative expression temporarily rises before returning to lower levels after the completion of college and entry into the workforce.

c. NDM and production -- implications

The opportunities available to young producers using NDM resources are reconfiguring existing social practices, particularly as they related to the distribution and feedback of work. These shifts may problematize other relationships and have unintended social and political consequences as the traditional roles of 'amateur', 'professional' and 'mentor' are contested. More specifically:

- Crashing the Gatekeepers:
  Many young producers are bypassing the traditional gatekeepers of older media and publishing their work online. Citizen journalists, for instance, post news commentary via websites such as Flickr, or apps such as Twitter, of events as they happen. Issues of quality and quantity, however, problematize finding good work online.

- Conversations with Friends and others:
  While offline feedback has traditionally been comprised of a group of sympathetic friends and colleagues, providers of online feedback are not constrained by rules of familial exchanges. Accordingly, comments can range from supportive to abusive and angry. It may be particularly challenging for a less mature individual to process and contextualize such feedback.

- Freedom to Appropriate, Part II:
  When a producer uploads material onto the web, it may be appropriated by a number of different interests, including amateurs, professionals, and corporations. Producers are often not aware of the possible implications of hosting their work online.

Crashing the Gatekeepers

In the past, a handful of editors mediated access between producers and audience, and any content deemed not suitable for publication and distribution by the designated decisions makers would likely be labeled as amateur (and rendered peripheral). The web enables producers to dispense with the mediators between themselves and their audience, but the ease of posting problematizes finding and assessing content once it has been found.

There are some fundamental challenges inherent in meaningful engagement with online amateur production. One challenge is that of volume: with billions of web pages, how does one find specific producer content? There are a myriad of systems set up for the web user to organize web content, but the most popular method by far is to use a search engine. Search engines, however, are not neutral assessors of online information; their tightly guarded algorithms for producing search results are often based on both the popularity of a given site, as well as commercial and promotional considerations. Google.com, which dominates the search engine market, sponsors an "AdWords" program, where sponsors select key search terms that will automatically result in a link to their site ("Welcome to AdWords" 2008). Less sophisticated searchers will likely not understand the mixed logic which drives search engines, relying instead on colloquial phrasing such as "tell me about parrots" versus entering well-considered keywords (Eagleton and Guinee 2002) or using the pre-sorted options of a web engine such as Yahoo! (Minkel 2004). Search engines and their results may, in effect, have become the new gatekeepers of web content (Hargittai 2004).

A second challenge to meaningful engagement with web-based production is quality. In a context where anyone can post anything, anything will get posted, and the web hosts content of questionable information and aesthetic value. In the past, works rejected by the mainstream gatekeepers might have participated in 'outsider' discourses, which have their own cultural cachet and practices based on exclusion, rejection of orthodox practices, and lack of profitability. Historically, outsider art thrived away from mainstream attention. Given the web's ability to unite diverse audiences around niche movements, practices formerly branded as 'geeky' or 'weird' find a broader audience online, sometimes breaking into the mainstream. Media fandom, for instance, cites its origins in efforts in the late 1960s to revive the science fiction program Star Trek and was widely seen as the exclusive province of "brainless" consumers and social misfits (Jenkins 1992: 10). Barely a generation later, a mainstream media properties such as reality television programming and popular cult series such as *Lost* not only embrace fan involvement but require it (Costello and Moore 2007; Mittell 2004).

Regardless of the challenges of managing production online, websites that host amateur work proliferate. The DeviantArt and SheezyArt sites feature original art trending towards goth, manga, and fantasy subject matter; the content ranges from promising scribbles to sophisticated computer-generated renderings (DeviantArt.com 2008; SheezyArt.com 2008). Blogger.com is a leading user-friendly site run by Google which allows an aspiring writer to choose from a variety of blog templates and to bypass the need to understand HTML or CSS site code. Similarly, Popular sites for showcasing creative user-generated content such as YouTube (videos), Flickr and Shutterbug (photography and 2d artwork) allows users to upload digital images, organize them into albums, and manage the level of access a viewer is granted. Producers more inclined towards text-based expressions can start a blog, or "web log", a place to post text (and images) ranging from personal diary entries to political commentary or calls to action.

* Citizen journalism

An example of how amateur producers are encroaching upon formerly sancrosant territory can be seen in the practice of citizen journalism. In the past, "Citizen journalists" were unable to share their work through professional media outlets. Today, they can post breaking news commentary and photography online either through a blog, through a Twitter feed, or as part of an aggregate collaborative new site such as WikiNews. Citizen journalists are a good example of what Shirkey (2007) has called a "latent group", or a group of individuals which is unaffiliated and inactive until a need arises or a call to action is issued. Anyone who possesses a cellphone with texting or imaging is

a potential member of a latent group.

While the concept of an army of citizen journalists able to mobilize around an event is appealing, this promising system suffers from growing pains. The November 2008 attacks in Mumbai, for instance, spawned thousands of Twitter messages and frequent updates to the Wikinews page from individuals onsite at the conflict. However, the high volume of Tweets and the conflicting information many of them conveyed undermined the application's usefulness; rather than transmitting timely news updates, the tweets accurately conveyed a sense of panic and confusion.

* Epistemic play

Some architects of cyberspace are seeking to utilize the elements of digital engagement and game play as a way to educate individuals about different professional practices. Shaffer promotes youth engagement with scaffolded, preprofessional play; via such 'epistemic games', players learn how to think in complex terms. In the prototype game *Madison 2200*, high school seniors work closely with graduate students as urban planners, plotting the redesign of a Ma city street in Madison, Wisconsin. Students learn about stakeholder concerns, conduct a site visit, and then utilize professional urban planning software to help model their design plan (Shaffer 2005). "epistemic games" in the planning stages will allow youth to immerse themselves in a variety of professional roles such as architect, journalist, scientist, and engineer.

Conversations with friends and others

A teen can easily post sophisticated contributions to an online site, comport himself as an adult might, and participate in discussions allegedly beyond the grasp of someone his age. Here is an unprecedented opportunity for youth to share creativity and thinking with a dynamic audience which includes strangers as well as family, teachers and friends. The research team headed by Mimi Ito has identified a subset of teens whose online engagements are motivated by specific interests; they are said to be "geeking out". These geeked out teens differ from many of their peers in that a). they are motivated first by their interests, and then by social affiliations, and b), they typically engage less with peers and more with adults whom the geeked-out teen only knows through his online interest groups (Ito et al. 2008).

Whether receiving online feedback is a positive experience for youth depends on both one's capacity for engagement in this context as well as the specific context itself. Exposure and revelation online can be a double-edged sword, particularly for youth who may have limited experience soliciting and receiving feedback' and the vast, anonymous nature of digital communications can problematize exchanges for even the thickest skinned posters.

In the past, feedback on a child's work was a careful process with intimates, delivered through face to face or via a more formal written channels (generally in a school context) with friends, family and known associates. In contrast, most online resources for sharing creative work support viewer feedback through a system of text comments, where a poster can leave a comment anytime for the postee to read at her leisure. A child's healthy development hinges on her internal ability to master external conflicts; how a child is able to engage with a sometimes difficult system of online critique depends both on the child herself and the level of regulation the online community she is

participating in supports and enforces. Anyone, for instance, can view the gallery of children's work on the Lakeline County, Florida's Library Club site or this year's winners of the Wisconsin Bridging Generations Youth Art Exhibit.

With respect to communications, psychologist John Suler outlines a number of factors that often collude to generate a state of negative online 'disinhibition', or variations of bad webg behavior). Anonymous postings an facilitate "unusual acts of kindness and generosity", allow shyer individuals to open up and ease the disclosure of information otherwise too uncomfortable to share. It is easy for a commenter, however, to absolve himself of personal responsibility for the content of his comment by posting anonymously or under a pseudonym. The results of online disinhibition can range from minor snarky comments to major flame wars, virulent hate speech, or bullying (Suler 2004).Recent research suggests that while 11% of girls and 4% of boys were the recipients of unwanted attention online from strangers, they were not unduly distressed, ignored the solicitation and consider it the "cost of doing business online" (Smith 2007). However, the report did not query children younger than twelve, or report the age of the average 'stranger'

Youth in middle childhood might find it difficult to disassociate themselves from any less than charitable comments and instead internalize them as a valid measure of their work and self-worth. "The child's danger at this stage," suggested Erikson, "lies in a sense of inadequacy and inferiority. If he despairs of his tools and skills, or of his status among his tool partners, he may be discouraged from identification with them and with a section of the tool world" (Erikson 1968: 260). Flippant comments that adults can readily dismiss may, conversely, challenge the core of a young child's sense of competency. Site participants of all ages also assume that their online colleagues the same age as they are, and profess shock and outrage when adults participate in sites primarily frequented by youth, and vice versa (Weber 2006).

While older individuals may be better able to handle negative comments, both one's successful online experience and the community's longevity are linked to thoughtful management of the level of discourse between participants. A recent study found that youth found comments online more disorienting than helpful: "[respondents said] that most online commentary is just ill-informed and thus not worth their time...Think.MTV.com and Campus Politico, two sites aimed at young people, with young faces, opinions and issues...both fall flat with these interviewees because they don't seem authoritative. The interviewees question why they should spend time reading opinions of some random young person who might or might not know any more than they do" (Vahlberg et al. 2008).

Finally, as one small entry in vast online network, a youth's contribution may be lost amongst the volume of competing information. With respect to a producer's own blog or site, it is possible that no one may even visit or leave a comment. A review of twelve random blogs on Blogger.com's site, encompassing topics from Colombian soccer to Spanish poetry to canning preserves and manga fandom, suggests that most amateur blogs are commented on exclusively by the blogger's offline network of friends and family. A producer who uploads his work to a larger, more popular site may also receive no direct comments. A child expecting to receive feedback on his online work may feel ignored or overlooked; given the egocentrism of the typical child, this may be just as injurous as negative comments. This can conflict with what Elkind identified as an adolescent's "imaginary audience", where the he assumes that he is a center of attention, watched -- and judged -- by many (Elkind 1967).

Remixing online content can be an inspirational -- and affordable -- creative outlet for an individual, but the practice is curtailed by the threat of litigation from owners of the original material; 2004's "Illegal Art" exhibit showcased a number of works whose uses of corporate logos ran afoul of copyright law (Nelson 2003). Scholars argue that limits on use of copyrighted material unduly inhibits current future creative works (Jenkins et al. 2006; Lessig 2006; Raustiala and Sprigman 2006). While the 'fair use' legal argument states that copyrighted work may be appropriated into a wholly new creative work which is educational or used to analyze or critique the work in question, it does not cover creations such as fan fiction, even if the work itself is never intended to turn a financial profit (Crews 2001).

* Appropriations by amateurs

Similarly, anyone who posts material online needs to acknowledge the possibility that someone, somewhere, may download it and rework it. Producers who post text or images online often do not consider the possibility that just as they might periodically appropriate online content, their own content may also be downloaded by someone else. The Creative Commons license, the online-based copyright contract system, was specifically designed to offer a producer a variety of options for copyright permissions ranging from strict to lax (Creative Commons 2008). However, copyright restrictions are not always understood and are rarely taken into account when one decides what to download.

Many informal producers relish the give and take of online appropriations, and even seek to promote such exchanges. This practice relates to the indifference -- and often resentment -- youth evince towards corporate copyright holders. But the same stance is also implicit in the frequent appropriation of amateur work, credited or otherwise, in the population of for-profit sites.

The online site SCRATCH, for instance, allows an amateur programmer to use a limited number of programming commands to create a wide range of crude if operational animations, ranging from a fishbowl to paper dolls to more sophisticated games where one can shoot basketballs into a hoop for points (Scratch.com 2008). SCRATCH creations can be both saved on the site, and subsequently modified and reloaded by other site users. But when SCRATCH was first launched, users objected to their work being modified without receiving proper credit for the original programming on which it was based. In response to complaints, designer Resnick and his team modified the site architecture to acknowledge all the authors of a collaborative work (Resnick 2008). This experience suggests that youth may have no difficulty building upon the work of a previous author, but may not be naturally inclined to credit them properly. Somewhat surprisingly, this finding also suggests that 7-8 year old youth, the age of the typical SCRATCH programmer, are attuned to issues around receiving fair credit for their work.

* Appropriations by professionals/commercial interests

Individuals are not the only parties interested in appropriating online content. Traditional news organizations, hungry for unique, breaking news content, appear simultaneously to dismiss citizen journalism and exploit their efforts. CNN and the *New York Times,* to name a few, mine Twitter threads, aggregate sites and relevant blogs for interview subjects and information to use as an addition or an adjunct to their own reporting. Most news organizations, losing audience share to

internet news sources, capitalize on the allure of 'citizen journalist' reporting to burnish their new media credentials and capture the interest of younger, savvier readers. The depth of larger news organizations' commitment to citizen journalism varies. For example, CNN's coverage of the November 2008 attacks in Mumbai, India featured frequent blog posts, but only from professional CNN journalists; citizen journalists are relegated to the easily-overlooked "iReport" site (iReport.com 2008). BBC News, on the other hand, integrated eyewitness accounts in a prominent spot along their news coverage ("As it happened: Mumbai attacks 29 Nov" 2008).

A recent incident highlighted the complications around digital content, copyright, and privacy. In 2007, a Texas mother sued Virgin Mobile for using an image of her daughter as part of its advertising campaign (Smith 2007). The daughter, Alison Chang, was snapped making a peace sign while working at a church car wash; the image was subsequently uploaded onto a photo album on the popular image-sharing site Flickr. However, existing laws did not favor Alison's mother: under a Creative Commons license which permitted commercial use, and since Virgin Mobile's headquarters is based in Australia, the family had little recourse.

Alison took matters into her own hands, hosting an extended discussion online pertaining to privacy and copyright law. She also posted the Virgin Mobile ad, and wrote below it, "Hey that's me! No joke. I think I'm being insulted." The photographer, a young producer, is suing Creative Commons for failing to provide clear licensing guidelines (Linksvayer 2007). Creative Commons maintains that they are not to blame if someone does not understand their legal explanations. The story sounds a cautionary note that most online sites which cater to producers have explicit – and often complicated – rules governing participation.

CONCLUSION

In the past, an individual's creative nonprofessional pursuits were relegated to semi-obscurity. Today, a producer can share his work and comment on the work of others on dedicated websites. The online explosion of amateur talent clashes with a number of established practices relating to production in general, and magnifies the possible benefits and risks for adolescent participants. As they engage in online production and discourse, individuals face increased legal and social responsibilities—and youths need to rise to the occasion.

The web allows material rejected by the content gatekeepers of traditional media to cultivate an online audience in a relatively low-cost, low-stakes environment; some of this work may prove its appeal and graduate to broader, more mainstream exposure, other work may appeal to a modest audience and thrive in an online affinity group, or languish unnoticed. In all instances, the web can expose adolescents to a wide range of opportunities that can positively impact one's development. Participation in a vibrant online community, for instance, can help prepare an adolescent for future adult roles by provide mentoring, friendships and engagement around a specific practice, such as journalism or technology. The ability to appropriate online work may motivate creative productions; however, a producer who uploads his own work needs to understand that there is at best uncertain protection against unwanted appropriation.

The absence of gatekeepers on most online sites may enable a broader range of content and voices, directed by organic, community-driven rules of participation. However, no site will prepare or

protect younger participants from hostile encounters ranging from thoughtless comments to explicitly predatory advances. Tweens whose sense of identity is largely shaped by external others, may internalize hurtful exchanges more so than their more mature peers. There is also the ability to participate online in a less than responsible and forthright manner, such as using a false or anonymous identity as a way to criticize others online while avoiding any responsibility for one's actions. In short, while promising opportunities for exploring and engaging online abound, there are a myriad of possible pitfalls; these may discourage younger participants from sustained engagement or, alternately, encourage them to try seemingly risk-free approaches that may be harmful to others.

IV. THE CHANGING ROLE OF THE CIVIC PARTICIPANT

INTRODUCTION

'Civic engagement' occurs when individuals engage with one another in service of a common enterprise (or a "praxis" group). The term 'civic actor' is used to describe someone who is motivated and adept at participating in or organizing social enclaves to promote a specific agenda. The majority of the subsequent discussion focuses on civic participation, and is intended to encompass both large- and small-scale participation, ranging from brief engagements with temporary groups (such as the Facebook group "Just say No to Communism") and circulating civic content (such as JibJab videos), to utilizing the capacity of the web to reach and communicate with many simultaneously to organize and mobilize (such as Meetup.com or MoveOn.org and its 3.2 million members ("About the MoveOn.org Family of Organizations" 2009)).

a. Civic engagement and social development

The motivation to become civicly-engaged depends on a wide variety of factors, including the age of the participant, background and education, temperament, values, and ambient environment. Civic participation does not necessarily correlate with social or moral development. A student can participate in a school-sponsored service learning activity because she is keen to avoid some type of punishment; because her friends are participating in the same activity along with her; because participation will impress college admissions officers, or because she is genuinely interested in addressing the issue at hand. Similarly, an older adult may vote to placate his spouse, or to fulfill what he sees as a conventional civic duty. For the purposes of this analysis, we focus primarily upon adolescent participation in the civic process, the typical developmental patterns for this age, and the ways in which NDM impact this process.

Youth and Civic Engagement

A youth in America can officially participate in the political system once he turns 18 and is legally considered an adult. Before that milestone, he has likely participated in or at least been exposed to elements of the American political process though interactions with family, peers, and school. Although not legally permitted to vote, the typical youth may well participate through voluntary associations, either as an agent of change or as a voter, ranging from selecting a class president to lobbying her school administration. Despite her inability to vote in local, state, or federal elections and probable lack of comprehension of the complexities of the system, even children are likely to be familiar with many elements of the political process.

As the young person matures, she will likely interact with individuals from a variety of communities such as camp, church or synagogue and adopt the appropriate role for each context. The period of middle childhood, as outlined by Erikson, is marked by conformity with external social norms; until the onset of the subsequent struggle for individuation, the child will likely make every attempt to fit

in. Unless a child was raised in an activist-minded environment (once called the 'red diaper' syndrome in the case of families with left wing tendencies), incidents of activism for this age group are exceptional.

By the time a young person reaches high school, he is trying to determine who he is, and who he wants to be. The psychosocial literature on civic engagement suggest that, regrettably, only a small minority of all citizens ever reach a point where they move beyond concerns about the self and conformity to social norms and adopt a broader, 'post-conventional' model of morality.

Patterns of traditional political affiliation and engagement

Adolescence is seen as a time for establishing-or failing to establish-- the foundations for future civic engagement (Duke et al. 2008). However, the social institutions that seek to promote civic engagement often have to fight an uphill battle against cultural mental models and behaviors against participation ingrained at an early age.

Overall, not many young adults elect to participate in traditional social service activities, and those who do, suggest Limber and Kevener (2004), report that their opinions are often not taken seriously by adults. Adults who volunteer often pay a "collateral cost" in terms of time and money, and are less willing to give up a certain amount of intellectual agency to younger, less experienced or mature volunteers. Adult organizers want youth to volunteer in theory, but in practice shut them out of policy discussions and relegate them to stuffing envelopes, manning the phone bank and other custodial tasks (Rhodes and Clary 2004).

Political affiliations and influences

Despite the rhetoric surrounding adolescence as a time of experimentation across all domains, research shows that young adults, in fact, do not tend to stray far from the political beliefs of their parents; beliefs are both passed down by word of mouth, and by virtue of sharing similar worldview and circumstances (Vollenburgh et al. 2001: 1185). A recent online survey at the website Democratic Underground asked "At what age did you know your political orientation?" Nearly half (47%) said "during my childhood," the next highest category was "in college, when I began to vote," followed closely by "when I was in diapers," reinforcing Vollenburgh's study to a point, but also suggesting that many youth pay at most casual attention to politics before they are able to vote themselves (Democratic Underground, 2008).

One's religious community can also impact one's political affiliations. Church elders advocate for particular policy positions; candidates that align with the church's interests and tight social networks formed through church contacts can lead to political mobilization. Sometimes a religious community's efforts to envelop its followers in church-centric activities can have a negative impact on the community at large; through a strong focus on the church, evangelical protestant denominations, in particular, tend to isolate participants from their larger community (Campbell 2004).

Finally, political affiliations may be shaped by one's membership in a particular generation, whose worldview is articulated by significant shared events such as the attack on Pearl Harbor, the assassination of JFK, or the assault on the World Trade center on 9/11 (Bing 2007; Mannheim via Vollenburg et al. 2001: 1186). These shared communal experiences may color a generation's perspective, including attitudes towards civic engagement, fanning or diminishing the proportion of the population that is motivated to become involved.

Formal learning and civic engagement

Most of the elite high schools included in our studies require some type of service learning or community service as a requirement for graduation. Educators report that while many students say that they enjoy their volunteer experiences, a significant number select their activities to build their 'personal resumes' ; most do not extend their involvement beyond the semester. A 2002 study of adolescents and civic engagement suggested that teenage girls are more engaged in their communities than their less social and empathetic male counterparts (Zaff and Michelsen 2002). Young adults who were provided preparatory civic opportunities in secondary school are generally white, and from financially secure backgrounds. These privileged students participated in the February 2008 primary elections in greater numbers than did their less privileged, non-white counterparts (Kahne and Middaugh 2008). It is not clear whether voting habits positively correlated with students' education, or with informal cultural and familial values.

b. NDM, youth and civic engagement

Polat (2005) considers the internet "a self-supporting world in which information and knowledge are distributed and discussed. The Internet can also function as a powerful tool for organizing actions both online and offline, but despite these attractive affordances, the internet's potential to impact civic engagement remains firmly in the hands of its users. The civic process is also impacted by broader social trends towards greater levels of transparency, accessibility, and networked agency, values that the internet indirectly promotes.

The internet's vast stores of information, in particular, allow the individual to find information about governmental initiatives and policy issues. The internet also offers access to questionable information and, as outlined above, often contentious interpersonal exchanges. Evidence is accumulating that the internet is having a profound effect on how information related to civic engagement is identified, distributed, and acted upon. However, the internet in and of itself will not bring about changes in how democracy is conducted; its impact will be limited unless individuals capitalize upon its potentials. It bears mentioning that much of the internet's political content, such as video clips, news stories, and analyses, is either directly appropriated or derived from traditional media sources.

Scaffolding through institutional content

Before they are able to vote legally, youth are exposed to age-appropriate rhetoric about the political process through cultural institutions offline such as one's home, church and school as well as through information found on the web. These websites typically solicit some type of interaction from the user,. The younger viewers of the Disney and Nickelodeon cable television stations, for instance, were directed to a website which offered information about the 2008 election as well as an interactive presidential poll ("Kids pick the president" 2008). The results were widely publicized, and discussed by some adult journalists as a bellwether of the impending November elections. Scholastic.com's "Democracy at Work" page offered users the chance to blog on the election or take an online poll interrogating whether or not the user 'has what it takes' to become the president someday ("Democracy at Work" 2008). More compelling is the potential of young people to contribute content and potentially see their contributions published on a large national website with an established readership.

The recently launched Puget Sound Off, a joint site supported by numerous civic agencies in Seattle, attempts to meld the power of social networks with a more robust civic mission (Puget Sound Off 2008). The site's homepage features user-generated videos and editor-selected blog posts such as "Why there is world hunger: not what you thought" and "reuse our landfills?" (ibid). Political science scholar Joseph Kahne praised the effort yet was mindful of the challenges that the initiative faces, ranging from how to persuade youth to use the site to wondering how to foster meaningful learning and productive dialogue (Kahne 2008). A recent paper found a direct correlation between high levels of adult moderation of websites and low levels of youth investment in participation (Cramer et al 2007). On the other hand, too little moderation on the site led to chaos. The trick, it seems, is to travel a careful path between inhibiting online exchanges and allowing them to run wild (ibid).

Puget Sound Off can be interpreted as a hybrid of social media and the more explicitly adult-scaffolded approach of institutional content sites such as Scholastic.com. Given their aversion to adult-defined social spaces, older teenagers may to avoid the site and other well-meaning adult attempts to reach youth audiences. Most youth, given the choice, will bypass these sites in favor of ones with less of an adult-driven agenda.

Informal learning and civic engagement

Psychological developmental models suggest that adolescence is a particularly sensitive time in terms of developing a political worldview (Kohlberg, 1969, 1976; Selman, 1980) Peers provide the supports for belief systems until the individual matures to a point of autonomy and no longer requires extensive social scaffolding. The need for both peer validation and a desire to differentiate oneself from parental authority are embedded in teen-oriented web sites, where a peer-based culture can flourish away from the supervisory impulses of adults. While offline relationships remain of critical importance to adolescents, the aforementioned decline in informal public spaces for adolescents to gather have also directed many teens to online "public commons".

These public commons can be accessed in a number of ways. More affluent and middle class teens likely have robust access to the internet through computers at home and school; their less affluent

peers may have no access, or limited access. Cellphones, though, have the potential to narrow the access gap. Approximately 80% of teens own their own cellphone; they report that it is integral to their social lives, used to make calls, text friends, and take snapshots, not to mention its function as a coveted status object ("Survey: Teens' Cell Phones Indispensible" 2008). Most basic cellphone models offer internet access. While the monthly fee can be relatively steep for a teen, cellphone access appears to remain more affordable than desktop or laptop computer access once the cost of the hardware is factored in.

c. NDM, youth and civic engagement -- implications

Civic engagement online raises a number of important questions. If the old and new media share content, how might -- or might not -- the NDM influence behaviors? Are new populations beyond the dedicated, pre-internet core of civic participants using the internet for political purposes? And to what extent do these digital tools promote democratic engagement? To help answer these questions and others, we examine NDM and the internet more specifically:

- *The Egalitarian Premise:*
  Is the internet an inherently democratic medium? Or does it discourage certain democratic objectives? Coherent arguments on both sides suggest that no clear answer has emerged.

- *Media, Civics and Trust:*
  The visual presentation and reputation of media sites help to shape viewer's conception of their trustworthiness. Those wishing to find unbiased news outlets online have a challenging task, as the medium has the ability to magnify and sensationalize 'evidence' presented in video or text form. Youth in particular may struggle to identify the markers of a trustworthy site beyond brand ID.

- *Social Affiliations*:
  Most Social networking sites (SNS) online allow youth to easily incorporate elements of their political and civic identities into their profiles, and to employ such markers as public elements of their online identities. One can virtually participate in "Obama's Inauguration" join the group "I hate Commies" or note your support for any number of social or civic causes. A component of social online exchange is the circulation of 'viral media', usually amusing animations or funny emails, often with a political theme. However, the average youth does not vet the veracity of viral claims, making them prime targets for propaganda and misinformation.

- *Methods of engagement – from online to offline*
  NDM used for civic and political purposes can transcend online information and connect with the offline world. Tools such as Twitter or emerging online apps provide the public with a variety of information, such as early hurricane notification, or the 2008 voting experience. There is a schism between traditional activism and these new mediated methods in terms of time and personal investment; "engagement 2.0" (Pettingill 2008).

Of particular interest is how the internet may allow adolescents a greater voice in political discussions. As mentioned earlier, adolescents are politically disenfranchised, and enthusiastic

attempts to participate on a grassroots level in one's community are often dampened by adults, well-meaning or otherwise. Online, however, youth can participate in peer-run sites, teen social networking sites with a political bent, or other online spaces where adult supervision is minimal at best. They can also contribute to online discussions at more general-interest sites such as CNN.com, and bypass persistent cultural restrictions on youth contributions. Online, no one needs to know that you're a teenager.

The Egalitarian Premise

One stream of popular thought contends that the web and related social networking tools are inherently democratic -- open to everyone, transparent in functioning, not privileging certain types of knowledge over others, encouraging constructive engagement with diverse coalitions. A recent study commissioned by the MacArthur Foundation and the Pew Internet and American Life research organization suggested that, like the internet, video games with embedded "civic learning opportunities" such as cooperation or simulated political or ethical activities have potential educational value. Teens whose gaming interest transferred to discussions on related websites or chat boards evinced a higher level of civic and political engagement (Lenhart et al. 2008).

This model of democratic engagement, however, does not mention any roles for oversight and mentoring, and ignores unequal representation online. Our research suggests that examples of responsible mentoring online are far outnumbered by examples of harmful "anti-mentoring". The egalitarian model does not adequately account for the types of tightly knit clusters of friends and associates which comprise the web's participants. Perhaps content is less the driver of the civic web than social affiliations, the core concern of most teenagers.

Media, Civics and Trust

* Managing information

As a young person's capacity for understanding the complexities of the political grows, he may start to seek out information on his own. However, a recent poll by the Harvard Kennedy School of Government found that 62% of survey respondents said they were skeptical of media coverage of the recent election campaigns, citing observed bias in the media (Rosenthal et al. 2008). To be sure the NDM, especially the internet, offer an ever-growing, easily accessible repository of information. Yet its sprawling architecture, informal code of professional conduct, and lack of oversight suggests that internet content is even less reliable than the content of more traditional, more managed media outlets.

Research findings from our project suggest that while the typical high school student today is good at scanning the day's headlines, she is not adept at synthesizing the disparate pieces of information or delving deeply into topics of interest. A 2008 survey by Northwestern's Media Management Center reports that the millennial generation is interested in civic and political information but is overwhelmed by the amount of information available and has trouble digesting text-heavy analysis.

Tweens and adolescents, according to our research, rely on branded web sites for their news. While average young people are not reading many books or national newspapers, they are reading the local paper and better-known, well-established news, sports and celebrity sites online such as CNN.com or ESPN.com. The number of hours spent on newspapers and on magazines has declined over time, while more time is being spent with videogames, home video, television, and mobile electronic devices (U.S. Census Bureau 2007).

The respondents in the Northwestern media study drew clear distinctions between "being informed" and "following the news". "Following the news" was defined as in depth understandings rife with arcane details and policy minutia, while "being informed" was defined as "learning enough to understand something, to decide what you think about it and perhaps to be able to talk about it (or at least understand what others are talking about)" (Vahlberg et al. 2008). Respondents in the study balked against more in-depth, detailed learning in part because they felt their time was already committed. "Following the news" was also reported to be a chore, while "being informed" was fun.

* Accounting for bias

Our research has found that teens assume a cautious position with relation to all media, with a particular distrust in traditional news sources such as radio, TV and national newspapers (Gardner et al. 2008). Subjects cited partisanship or bias as a major reason for their distrust of media sources; some respondents claimed to compensate for this by reading multiple, often conflicting, media sites. But if youth are indeed cross-checking their facts by checking conflicting websites, they are likely not doing so in a strategic or an in-depth manner (DM2 2008; Vahlberg et al. 2008). While this is true for citizens of all ages, younger people likely have not yet established stable cognitive schemas or framewoks with which to contextualize the high volume of content.

For those craving an authentic 'fair and balanced' political perspective, the top political websites online such as HuffingtonPost.com or DrudgeReport.com may not help much in and of themselves. Even non-partisan 'fact checking' sites such as FactCheck.org or MediaMatters.org appear to lean towards a left-wing perspective. While most websites do not cross the line into blatant propaganda, every gesture, look, utterance or verbal slip can be publicized, analyzed, and dissected in an online court of public opinion. For example, during a campaign speech in April 2008 , while talking about Hillary Clinton, candidate Obama was captured on tape making what was interpreted by some as an obscene gesture .The *Los Angeles Times*' "Top of the Ticket" web feature was just one of several sites which offered video evidence of the signal in question, and then asked readers, "What do you think?"

Web documentation and dissemination can influence the outcome of elections. In 2006, Senator Bob Allen (R-VA) had been considered a potential contender for the Republican presidential nomination. During a re-election campaign stop that year, he referred to an Indian-American cameraperson as "macaca," a pejorative insult which loosely means "monkey." A firestorm erupted online, as video of the offending scene was discussed first in blogs such as Althouse (Althouse 2006); a day later, the story of Allen's slip suggesting that the candidate was a racist was picked up by *the New York Times, the Washington Post*, CNN, and other major news outlets. The video proved to be a tipping point for Allen's campaign; less than three months later, Democratic challenger Jim Webb narrowly won Allen's Senate seat.

Regardless of political affiliation, it can be difficult for the typical adult to make sense of the volume

of conflicting -- and sometimes unreliable -- information available on the internet; how does the typical adolescent cope? Chances are, according to our Trust and Trustworthiness project, that individuals rely on different scaffolding devices -- that of institutions, and that of family and friends (Gardner et al. 2008). In the following section, we explore how adolescents, engage with political information through the NDM's powerful interactive and social networking affordances.

Social Affiliations

Most teens use the internet for social purposes (boyd 2008; Ito et al 2008), but political discourse is evident even in spaces dedicated to informal socializing. Social networking through digital portals such as email, live chat (Google Chat, IM, iChat, or text messaging), social networking sites (FaceBook, MySpace) and specialty apps (Twitter) constitute the lifeblood of contemporary society, esp. teen sociality. Issues around identity such as sexuality, popularity, and one's level of achievement in academic, artistic or athletic pursuits tend to dominate online discourse for the typical adolescent, manifested through online flirting, gossiping, performing, and similar behaviors (boyd 2008). Social networkers enjoy a self-selected cohort of peers often numbering in the hundreds with whom to "talk", and some of these conversations can gravitate towards the political (Bondelli 2008).

In providing spaces for public identity performances (boyd and Heer 2006), social media sites such as Facebook, Friendster and MySpace provide allow users a number of ways to demonstrate political leanings. On Facebook alone, one can load any of over one hundred politically-oriented small applications or 'widgets' onto one's profile (Facebook Apps | Politics 2008), join the appropriate Facebook Groups or Pages, or express oneself through status updates. The status update feature, short customizable headlines such as "Jack is currently in class" or "Jill <hearts> Obama!," is arguably the engine of Facebook. A user's 'status' is prominently displayed on her homepage, and a simple click will compile the status updates of all linked friends. A user's profile details are less prominent than one's status, but provide another outlet for declaring one's political allegiances or civic values.

The Facebook invitation "Obama's Inauguration", for instance, provided a window into the power of group affiliations online. A mere three days after winning the presidential election, the Facebook invitation's site had distributed approximately 275,000 notifications. The invitation's RSVP offered these guidelines: "Say "Attending" if you're looking forward to it, say "Not Attending" If you're not looking forward to it, and "Maybe Attending" if you don't care. No matter what you actually RSVP, you aren't obligated to show up anywhere or do anything." (Facebook | Obama's Inauguration 2008). Whether or not a respondent would actually attend the inauguration would be hard to verify, but besides the point: the page existed as a tribute to the election winner, and one's answer to the RSVP would be shared with all associated peers via an automatic 'status update' feed.

* Viral Media and Information Circulation

The digital nature of information on the web allows it to be easily distributed to others -- text or images can be cut and pasted into an email and forwarded to a host of recipients with a minimal expenditure of time or effort on the part of the sender. 'Viral', 'tree' or 'spreadable' media have no direct antecedent in analog media; in the past, few invested the time or effort to retype or scan an article and then share it with friends and family. Such an item spreads exponentially through social

networks and courts predictably different responses (Shirkey 2008).Many websites have incorporated tools which facilitate sharing by forwarding content to a number of email or social networking destinations. Jenkins mused, "I could, for example, construct and send [spreadable media] to my socially conservative brother (as a friendly ribbing from Blue America to Red America) and he might pass it along to his friends at work (expressing outrage against what left-wing organizations are saying about that closet socialist and Muslim). And so the process continues" (Jenkins 2007).

Any online content, from text to images to video, has the potential to 'go viral'. To our knowledge there have been no formal studies on what is circulated and why; it is generally believed that most viral media connect to a preexisting social "meme"located outside of the dominant mainstream discourse such as conspiracy theories, satire, or humor. For instance, the JibJab animation "This Land", which featured the candidates Bush and Kerry humorously dancing and singing about their respective political positions ("This Land" 2004) was crafted by two young men and initially launched in July 2004; three weeks later, thanks to viral dissemination, the video's webpage had already been accessed over a million times. (Dowdell 2004). This past election cycle, the "Obama Girl" video and Paris Hilton's wry rebuttal to John McCain, were two popular viral media pieces. The easily editable nature of digital video allowed partisans to focus on selected outtakes from the presidential debates separated from the context of the debate itself, and then circulate them to friends (Javers 2008). Viral media can be viewed on a host site such as YouTube or Flickr, shared via email, or embedded on a personal web page or social networking site. The second two behaviors resonate with issues of identity and performance, key issues for developing adolescents.

Viral media are seen as operating outside the constraints of mainstream media, giving the renegade content a patina of grassroots legitimacy. This finding aligns with data from our research suggesting that trust once based on authority and objectivity has, at least for young people, been supplanted by trust based primarily on authenticity and transparency. For adolescents in search of an authentic identity, such declarations may function as a genuine declaration of political sentiments; a way to fit in with a certain peer group; or an experiment with assuming the role of a person who holds those positions. Jenkins suggests that "political messages are far more effective if they are delivered by someone you know and so the challenge is to get average citizens excited enough about political media that they will help to circulate it." (Jenkins 2007).

Trying to propel specific content into viral territory, however, is an inexact science, somewhere between advertising and launching a message in a bottle and hoping for the best. Memes, tastes and fashions shift quickly, and there is a great deal of competition for the eyeballs and attention of the web population. The relation between the reception of a message and the type and degree of affiliation between sender and recipient aligns with the data from one of our current research project (Gardner and James 2008). However, it is likely that viral media from a known associate may be enthusiastically or nonchalantly embraced rather than critically assessed, which can result in the dissemination of compromised or erroneous information.

Viral email content, for instance, can range from the naive to the slanderous. When Fox News first claimed that Obama was a Muslim, his campaign aggressively denounced the claim, and it disappeared from the mainstream media. However, the rumor went 'underground', and was circulated via emails; in October 2007 a message falsely claimed that Obama joined the Church of Christ in order to mask his radical Muslim roots. The email circulated through the social networks of conservatives and ended with the ubiquitous tag line of viral media: "Please forward this to everyone

you know!" (Smith and Martin 2007). Similarly, conspiracies circulating online suggested that Sarah Palin's daughter Bristol was in fact the mother of Palin's child born in March 2008. The website Snopes.com features a page of common misconceptions about Barack Obama, most of which circulated via viral emails, including requiring banks to make loans to poor people, endorsements from the Klu Klux Klan, funding from Venezuelan strongman Hugo Chavez, and Obama's alleged refusal to recite the Pledge of Allegiance due to his radical beliefs (snopes. com: Politics (Barack Obama) 2008).

Although viral media are regarded as valuable tools for voices and opinions otherwise shut out of mainstream media discourses, corporations and special interest groups also participate in viral media marketing initiatives, such as the branded games mentioned earlier. An insidious practice is known as "astroturfing": an organization dispenses with direct outreach and instead distributes viral content attributed to a nonexistent individual or non-profit group. One of the better known incidences of astroturfing is the short online film "Al Gore's Penguin Army"; mocking the film *An Inconvenient Truth* , this animation featured the casual production values that are the hallmark of amateur online work (toutsmith 2006). Although 'toutsmith' identified himself as a 29 year old male from Beverly Hills, the *Wall Street Journal* traced back his email and discovered it was based not in California but at a Washington, DC strategic communications firm whose client list included Exxon Mobil Corp (Regalado and Searcey 2006).

Technology has successfully engaged youth in a range of civic-themed activities. But some activists cite the need to transfer that interest into some type of real-world activism; examples of where the transfer is done well are powerful but still relatively rare. Below we outline some NDM-driven strategies activists are currently using.

Methods of engagement -- from online to offline

Certain activists are capitalizing on the affordances of NDM beyond the internet and its facility for data collection, discussions, entertainment and identity play. Cellphones are proving to be the critical link between online and offline initiatives. Today's multifunctional phones can snap an image, send email and text messages, access the internet, and record multimedia as well as make phone calls. Some advanced models even map the phone's location via GPS and GoogleMaps. The cellphone's ubiquity, affordances, and capacity allow the user to transition smoothly between the real world and online information. Mobile media, according to Hersch and Henry (2005), have altered strategies for street protesting by allowing small autonomous groups to coalesce and disperse on command. The group can nimbly adopt alternative strategies in response to roadblocks or a heavy law enforcement presence.

Numerous examples of creative uses of NDM can be found online. Twitter, a web and phone app which allows users to post very brief messages to one another, has blossomed as a way to network with others quickly. During the 2008 hurricane season,Twitter was employed successfully in the Hurricane Information Center, which recorded real-time observations on weather variables; the Twitter VoteReport, tracked or "crowdsourced" voting irregularities during the 2008 presidential election (Carvin 2008). With respect to video, YouTube and PBS solicited voting day video documentation to the "Video your Vote" online channel; the site sorts each video by type (interesting voter, voter irregularities, etc). and by location. The Voter Suppression Wiki educates users about

voter suppression and provides an opportunity to report instances thereof.

While these systems garner praise and attention, it is not clear how well they work. Some caution against relying on Twitter for organizing large groups of people, as popular groups with lots of participant feeds will clutter the information stream becomes until it is nearly unreadable (Kreutz 2008). On the VoteReport site, many users report that their posts did not appear on the Twitter feed. Other posts were off-topic distractions. Finally, this system of independent initiatives begs the question of whom, if anyone, will ultimately integrate these findings into a reliable synthesis.

Writing in the *Christian Science Monitor*, Sally Kohn described internet-based activism as inherently "individualist" and asserted that the internet "allows us to channel our individual power for good, but it stops there. This medium is great for signing a petition to Congress or donating to a cause. But the real challenges in our society – the growing gap between rich and poor, the intransigence of racism and discrimination, the abuses from Iraq to Burma (Myanmar) – won't politely go away with a few clicks of a mouse. Or even a million" (Kohn 2008; also, Bondelli 2008; Wells 2002).

While the proliferation of NDM tools has eliminated the overhead costs of organizing and enabled less profitable groups to flourish (Shirkey 2008), the ease of online participation requires a reexamination of what constitutes participation. Is contributing $5 to a political campaign online civic participation? Former presidential candidate Howard Dean and his internet guru Joe Trippi thought so; they managed to finance Dean's campaign in part through a grassroots movement which encouraged even minimal levels of participation (Wolf 2004). But contributing to a political campaign is a traditional model of political engagement, if expanded through NDM to reach previously neglected potential contributors. Is signing up for the Obama Inauguration or Bush's Last Day in Facebook civic participation, personal expression, or both? Is a new form of civic engagement emergent – engagement 2.0 (Pettingill 2008)? If so, will it diminish or enhance democratic participation?

If there is indeed a growing tendency to relegate activism to limited online engagements, it may not be limited to youth. Within activist communities, there is the persistent belief that substantial societal change cannot be accomplished without a good face to face 'ground game' -- knocking on doors, stuffing envelopes, connecting with one's neighbors. Whether this situation will remain true or not as NDM become even more enmeshed in the fabric of society remains to be seen. The convenience and ease with which online activism happens is attractive, and is likely to increase as new technologies and uses for them emerge. However, a recent report by the Pew Internet and American Life research group suggested that as many as half of Americans are tiring of online engagements (Horrigan 2007); if change happens exclusively online, who, then, will   participate?

CONCLUSION

In the past, a young person may have learned about political issues and events through school or limited media outlets, but his options for participation were limited. If he was younger than 18, he couldn't vote, he didn't have enough discretionary income to contribute to political campaigns, and

his voices, as well as those of his peers were likely shut out of mainstream political debates. If he chose to volunteer, it was likely with a local organization which required some minimum level of commitment, and where his contributions might be downplayed because of his age. The internet allows individuals to learn about a wide range of topics in depth, regardless of the focus of mainstream media; research suggests that individuals tend to gravitate towards age-appropriate sites designed with audience preferences in mind.

The internet also offers a new model of civic participation, one measured by one's level of engagement as opposed to one's time commitment. One can sign online petitions, vote in online elections and contribute $5 to a cause of choice, all from a computer screen. Whether or not most young people will reverse a multi-decade decline in civic participation and capitalize upon this new mode of engagement remains to be seen. The online activities of tweens and adolescents in particular remain firmly focused on identity explorations, social status, and peer play, with political and civic concerns taking a back seat. Multi-mediated entertainment which incorporates political messages remains popular, and circulates among youth. However, these messages are usually consumed and exchanged uncritically, allowing misinformation (deliberate or otherwise) to be treated like any other form of entertainment. For example, youth are particularly vulnerable to comedic appeals by astroturf groups who understand the youth penchant for humorous visuals.

CONCLUSION

In this paper we have examined how an individual's role as a student, consumer, producer and civic actor may be influenced in the digital age by both internal developmental factors and external deployment of NDM. In general, those in earlier developmental stages may struggle in situations where adults with sufficient experience, emotional maturity, and intellectual sophistication will not. For a more detailed examination of how family, peer and other interpersonal relationships, are affected by the NDM please refer to our companion paper,

One can look at youth engagement with various social institutions today and see them as newer versions of earlier, pre-technological practices, and to an extent that is true. In the past, for instance, paper notes were passed during class; today, text messages are sent to classmates via cellphone during class. In the past, kids played board games with financial themes such as Monopoly; today, they can buy and sell a wide range of goods for their charges on Neopets.

However, our research proposes two major behavioral changes as a result of NDM use beyond the technology upgrades of past practices. First, the extent to which individuals are empowered by access to easy information online results in a corresponding decline of the influence of traditional gatekeepers and institutions. An individual can learn, buy, publish, and take action without formal alliance with a group, from any networked location. Second, the extent to which individuals are able to communicate with remote others enables contact with friends and family beyond what was possible in the past. There are no longer spaces or times in which an individual is removed from her social contacts.

The adolescent penchant for socialization can be expressed through NDM in a variety of contexts, and for a variety of purposes. Even so, it is critical that the behaviors associated with NDM technologies not be overexoticized. Despite the prevalence of IMing and social networking sites among teens, more than half (51%) still prefer talking on a landline telephone, and spending face time with friends versus communicating online (Lenhardt et al. 2005, iii). Youth today still engage in many of the same types of sociality and play, though the forms they assume have changed to some extent.

It bears mentioning that the type of ubiquitous internet access assumed herein is not relevant for certain populations, such as the economically disadvantaged, or those who eschews technology by choice. Many individuals do not have a Facebook profile, play games online, download music or engage in similar digital pursuits. Similarly, statistics pertaining to NDM access and use rarely document levels of engagement, such as distinguishing between casual and heavy creators. Finally, NDM tools are still relatively new and continue to evolve: it is anyone's guess what social networking online, for instance, will look like in ten years, or whether the practice will have already run its course.

The NDM hold the very real promise of transformative social change, though incremental and not without risks. The internet is a great space for adolescent experimentation -- one can assume a separate identity, or no identity at all, and try on different voices, with limited risks for the experimenter. However, these experiments hold risks for the other participants who may not realize the extent, or the purposes, of the other's experimentations. An online flirtation may end abruptly; an

active site participant may suddenly disappear; a congenial online discussion may suffer an influx of hostile comments from a persistent, unknown poster.   In these three examples, the protagonist likely leaves confusion, anger, hurt in his wake; the web can operate as a social laboratory -- free of the regulations which limit offline social research designed to inform and protect participants. Offline, there is less anonymity, and more accountability, though accountability is not guaranteed. But in a world where one has to face one's associates, efforts are usually made to avoid protracted misunderstandings. Online, however, one can simply disappear, along with the possibility of consequences.

As the NDM become an increasingly potent presence in our lives, we look forward to additional research which can help to clarify the myriad of outstanding issues relating to institutional engagement. We hope as well to see these findings translated into practical applications for educators and the young people with whom they work. .

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