

Cool Hunting the Kids' Digital Playground: Datamining and the Privacy Debates in Children's Online Entertainment Sites

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Abstract

This paper takes up the social and theoretical implications surrounding the information management practices found within children's online entertainment sites. Although the increasing integration of information and data gathering systems is oriented towards enhancing organizational efficiency and consumer service provisions, explicating the administration of online gaming community information infrastructures reveals the threats of "digital redlining" or "weblining." Empirical data from ongoing case studies of popular children's game sites are presented to reflect on discourses of privacy, data protection and the ethical dimensions of data mining. These issues are seen as especially relevant in view of the recent implementation of national privacy legislation which apply to children's online culture. Child users are not only highly targeted by data mining and market research practices but also disadvantaged by a limited awareness of the legal and ethical implications of their online interactions with commercial spaces.

1. Introduction

As children and youth continue to expand their access and presence on the World Wide Web (WWW) [10, 17, 22], they increasingly adopt participatory roles in the creation of online content—contributing in meaningful ways to online environments, games and communities. The fact remains, however, that the most popular among these sites are often commercially owned and operated, responding primarily to industry interests [13, 22, 31]. This has resulted in what Montgomery [22] terms a “children’s digital media culture,” which creates new levels of intimacy between marketers and children by dissolving the traditional barriers between “content and commerce.” Nowhere

is this relationship more clearly illustrated than within popular branded children’s websites and online games, such as Neopets.com, HabboHotel.com or EverythingGirl.com. These online communities/gamespaces provide tools and play environments that enable young users to interact, adopt virtual pets, play sponsored “advergames,” and serve as a stable data mining resource for marketers and toy companies. This phenomenon, and the corporate mechanisms that drive it, is reflective of a larger trend in online gaming conventions—one that increasingly incorporates marketing research strategies into the design and operation of online entertainment sites and virtual communities.

Over the course of the last century, social conceptualizations and understandings about children and childhood have undergone a series of fundamental shifts. From the child labour reform movements of the late Industrial era, to the widespread ratification of the UN Convention on the Rights of the Child, to the emergence of child protection policies, children have gradually earned a highly privileged and specialized place in Western society. Within the context of the media and cultural industries, this transformation in children’s roles and functions has translated to the development of an equally specialized (and increasingly profitable) niche audience and consumer market. With the emergence of every new media technology, children’s culture becomes increasingly inundated by the mass media and the sweeping marketing efforts of toy companies and other child consumer goods industries [11, 14, 22].

2. Children' Digital Culture

As early adopters of domesticated media technologies [22]—including VCRs, personal computers, and videogame consoles—gaining access to the once highly private and elusive children’s market is no longer as difficult as it once was. A Kaiser Family Foundation report released in

1999 revealed that children spent an average of 5 hours 29 minutes a day, seven days a week, using media for recreation [7]. In addition, much of this media usage was reportedly spent alone and unsupervised: 53% of children surveyed had a television in their bedrooms, 70% had a radio in their bedrooms, 64% had a tape player and 16% had a computer [7]. A recent study conducted by Nielsen/Netratings [25] reveals that children and teens account for one out of every five (21%) Internet users in the US, totaling more than 27 million (12 million between the ages of 2 and 11 years, and 14.9 million aged 12-17). Meanwhile, in Canada, single-family households with children under the age of 18 had the highest rate of home Internet use, approximately 73% of the estimated 6.7 million Canadian households with home Internet access in 2003 [35]. Since families with children remain among the fastest growing demographics of Internet users [22], the number of children online continues to multiply. Children are also using digital media technologies at an increasingly younger age. As Rideout et al. [28] describe, “Nearly half (48%) of all children six and under have used a computer, and more than one in four (30%) have played video games” (p.4). Concurrently, children’s spending power has also increased significantly. Sutherland and Thompson [36] propose that children’s spending has “doubled during each decade of the 1960s, 1970s and 1980s and has tripled in the 1990s.” Recent U.S. estimates place children’s market value at around \$115 billion (\$1.8 billion for the Canadian “tween” market—children between the ages of 9 and 12—alone), including both the money children spend themselves and the influence they exert over family purchases [36]. Accordingly, advertisements for adult products, such as food, electronics, furniture and hotel chains, are increasingly targeted toward children [11].

The image of the “affluent child” is accompanied by the notion of the “media-savvy child” and the techno-savvy “cyberkid” [10]. All three of these representations support the notion that children have a high level of competency and skill when it comes to understanding cultural discourses and manipulating technologies. The myth of the “cyberkid” has become especially prevalent in recent years, due in part to children’s early adoption of information communication technologies (ICTs) and the large amount of time they spend with them. Perceptions of children’s adeptness with ICTs are inflated when contrasted with the challenges and difficulties many parents face in adopting these same technologies. Kapur [11] writes: *“The ‘knowledge gap’ between adults and children is closed...because of the rapid disappearance of the*

world adults knew and learned about as children. [...] New technologies, such as computers, which are familiar to children but new to adults, place the child ahead of the adult in achieving a working knowledge of the world.” Children and youth are thus increasingly involved in the dissemination and creation of the digital cultural environment. While children’s media is traditionally created and produced by adults, new forms of interactive media and the widespread accessibility of online tools and software—for the production of digital film, animation, games, webpages and weblogs—have allowed children to adopt an increasingly participatory role in the creation and sharing of cultural artifacts. As more young people gain access to the necessary tools and skills to participate meaningfully in cultural production, they will continue to expand their presence within the new media landscape.

As barriers to accessibility and participation dissolve, other distinctions between private and public space conventionally used to define and delineate childhood have also degraded [5]. The postmodern perspective of children’s media culture argues that new media and other digital technologies—together with the forces of global capitalism—have made childhood not only “inseparable from media use” but also intimately tied to emerging forms of media and audience surveillance [5]. The prominence of media surveillance in children’s online culture is illustrated by the substantive role played by marketing research techniques in the development and management of children’s media products. This process has “intensified with the newer, more elaborate tracking techniques and organization of data made available through computers” [11]. New technologies and tools, such as data mining, are changing the very nature of consumer research through the application of increasingly unobtrusive, yet highly intrusive, ethnographic research methods and the collection of enormous amounts of data on consumer habits, preferences and daily activities.

3. Methodology

The methodology consisted of a multi-disciplinary review of scholarly databases to locate and identify current literature on data mining practices and knowledge discovery in databases, as well as current market research trends and activities pertaining to minors. Among the databases consulted, ABI/inform, EBSCO, Web of Science, Sociological Abstracts, and the Humanities and Social Sciences Index yielded the majority of relevant works included in the review. In addition, a

comparative overview of data protection principles found within the broader frameworks of the *Children's Online Privacy Protection Act* (COPPA) (US), the *Personal Information Protection and Electronic Documents Act* (PIPEDA) (Canada).

The literature review was supplemented by findings drawn from an ongoing comparative case study of online children's game sites, including the online game communities Neopets.com and Everythinggirl.com. One of the most popular children's websites today, Neopets.com, claims over 22 million young members worldwide, 39% under the age of twelve and 40% between 13 and 17 [24]. The Barbie/Mattel webportal Everythinggirl.com, which includes separate areas or mini-sites for each of Mattel's girls' toy brands, recently ranked first (*Diva Starz* mini-site), third (*Polly Pocket* mini-site) and fourth (*Barbie* mini-site) among the top five online destinations most visited by children aged 2-11 [25]. Using Yin's [42] model for multi-case, embedded case study design, this methodology combines both qualitative and quantitative content analysis, with an historical overview of the corporate activities, holdings, reports and partnerships of the games' owners and operators.

4. Data Mining and Privacy

Youth marketing researchers have been especially creative in finding new ways to study and understand their audience, sending teams of anthropologists to children's homes to study their interactions with digital technologies [29], and hiring "trend-setting" teens to spy and report on their peers [9]. These practices are part of a growing trend in consumer research that Russakoff [29] has labeled "cool hunting," a practice in which marketers "get kids talking about their taste-worlds" [27]. This phenomenon has manifested itself in various forms, including the FreeZone Network's "branded chats" with young consumers (which hosts online chats with celebrities, athletes, and game developers) and the innumerable game sites that reward players with "points" or virtual currency for filling out marketing surveys. Popular gaming site Neopets.com asks users to complete surveys on a wide variety of topics and product preferences, and attracts up to 6,000 to 8,000 young respondents a day by offering them extra points upon completion. Neopets.com provides children with a variety of online tools and activities, such as games, creative outlets (such as drawing competitions), and opportunities for communication with other members (such as forums, chat, etc.), along with a vast amount of embedded advertising messages and

interactive product placement. Although many of the more overt marketing research methods have fallen under the mounting scrutiny of consumer watchdogs and child advocacy groups—as well as the US government's COPPA act, implemented in 2000—more subtle approaches to data mining remain for the majority unregulated and unrestricted. Much of the literature and policies on children's privacy in relation to marketers has been limited to the restriction of any direct solicitation of personally identifiable information from children under the age of 13 unless parental consent is granted. More and more, however, youth marketing relies on what Rushkoff calls "under-the-radar" marketing, which can include hiring kids to "log into chat rooms and pose as just another fan of one of their clients" [9], or studying kid-generated weblogs and forums for details about their private lives and consumer profiles. When applied to the Internet, youth market research often translates to the "ongoing collection of personal information and tracking of on-line behaviour" [22].

Encompassed in the notion of "dataveillance", which involves the "automated monitoring through computer-readable data rather than through physical observation" [4], data mining uses a range of virtual tools- neural networks, decision trees, rule induction and data visualization- it draws upon raw material from any number of online or offline activities or transactions using data algorithms to sift through large quantities of information [6]. Originally applied to research on artificial intelligence, the use of automated mining technologies allows for the efficient discovery of otherwise non-obvious, previously unknown information, facts and/or relationships. The practice of data mining is enhanced through the process of extracting and transforming 'operational' into 'informational' data and loading it into a central data store or data warehouse. Data mining techniques are used to establish correlations or patterns in data using specific algorithms which allow decisions about future courses of action to be executed.

This practice has important ethical repercussions in terms of the child user's right to privacy and freedom of expression. It can also be seen as infringing upon children's potential intellectual property rights and other authorship rights over the ideas, creativeness, and cultural artifacts they continue to produce and distribute online. A similar line of reasoning has cropped up within the popular area of online gaming and game-based communities, which is quickly becoming the site of massive public attention and mounting legal dispute over the legal status of the games' content and players' participation therein [2, 38]. The

conflict between adult players and game-owners/creators over the issues of intellectual property, ownership and authorship are contributing to a shift in contemporary notions about the nature and limits of copyright, as well as the growing relationship between virtual leisure activities and real-world economics. From the players' perspective, the time, efforts and creativity dedicated to the construction of game characters and storylines justifies a claim to partial authorship and co-ownership over these characters and other player-generated "creations." On the other hand, the industry argues that ownership and authorship of the game code design (not to mention the original narrative framing, the visual and audio environments of the game, and the rules of play) legitimately extends to the players' actions within the game environment.

At the center of the industry's claim to intellectual property ownership is the controversial institutionalization of End-User License Agreements (EULAs) (also called Terms of Service (TOS) and Terms of Use (TOU)). EULAs are virtual contracts that players must agree to before entering a game environment, by clicking an affirmation that they have read and accepted the terms and conditions outlined in the EULA. By clicking, the user agrees to waive a number of significant rights, such as the "rights to own the fruits of labor, rights to assemble, rights to free speech" [2]. The legal and ethical status of these contracts becomes all the more problematic when the user group in question consists predominantly of minors—children who are largely ignorant of the labour relations and legal implications of the activities they are engaging in—as is the case with the numerous child and youth-oriented online communities and gaming environments that have emerged in recent years. In order to participate in sites like Neopets.com or Everythinggirl.com, users must first sign up for a free membership, by disclosing a limited amount of personal information and creating a unique online identity. This condition of play is in accordance with the classic virtual community requirement articulated by Kollock [15], namely that trust be built or facilitated among users via persistent member identities. It also allows the sites to track users' behaviours and preferences as they move through the sites.

Participation in these sites also requires that young users (and/or their parents—though little is in place to ensure that parental authorization is legitimate) first agree to sweeping terms of use that void them of any rights over their contributions or communications. For instance, the following "Terms and Conditions" appear on the Neopets site:

"By submitting material in any manner to Neopets, you (and your parents) are automatically granting us permission to use those materials for free in any manner we can think of forever throughout the universe" [39].

The "Terms and Conditions" found on the EverythingGirl.com portal and mini-sites, on the other hand, provide a more detailed outline of the various ways a child's contributions may be used once copyrighted:

"You grant Mattel a non-exclusive, royalty-free, perpetual, irrevocable, and sublicensable right and license to reproduce, distribute, publish, transmit, modify, adapt, translate, display, distribute [sic], sell, license, publicly perform, prepare derivative works based upon, and otherwise use or exploit Your Submissions throughout the world in any and all media" [40].

The EULAs thus ensure that the valuable user information mined from user responses, submissions, and online interactions and behaviours becomes the exclusive and unlimited property of the website owners. This condition of use has proven quite lucrative for companies like Neopets, Inc., whose revenue is in part derived from aggregate demographic data sold to marketers and members of the children's industries in the form of youth market research reports. With an executive team drawn from the online marketing research industry, including alumni from OpinionSurveys.com and Netmagic, Neopets Inc.'s annual "Youth Pulse" research reports have become a staple resource for Fortune 1000 companies targeting children and youth, as well as industry news sources such as Advertising Age magazine [32]. The company boasts a large portfolio of high-profile clients, including Mattel, Lego, General Mills, McDonald's, Disney, as well as a number of international advertising agencies [24]. In this respect, children's sites like Neopets.com represent a new sustainable revenue model for online communities—that of transforming community members into a stable resource for market research initiatives—in addition to profiting from more established revenue models (namely ad-hoc purchase based and advertisement-based models) as described by Ginsburg and Weisband [8].

5. Ethical Dimensions to Privacy

The increasing use of data mining techniques renders prominent a new sequence of ethical dilemmas for the privacy debate. As far back as the 1980s, advances in data matching and information sharing across public and private sector organization facilitated the intersection of commercial and administrative domains. The fallout has been that a growing number of interlocking institutions and agencies have come to possess the ability to assemble data images which do not simply follow but are actually capable of preceding embodied persons [34]. The formation of and increasing reliance on data images to execute digitally based discriminations presents a serious threat to those from whom data is originally derived, as well as for those to whom the images and abstraction are applied. Although calls for the protection of personal data continue to be heard, the implications for practices of surveillance made possible through networked information and communication technologies simultaneously problematizes and necessitates a continued discourse of definitions of privacy which take affirmations to embodied personhood as their primary object of identification. The use of individual data in aggregate form can be seen in the end products of many “cool hunting” initiatives, including Neopets.com’s popular “Youth Pulse” reports.

At the heart of the privacy debate, there persists the presumption that a direct connection between embodied individuals and their data can be discerned, implicating by corollary the importance of consent in the formulation of privacy policy or norms [41]. So the argument goes, a person should have the right to consent to how data abstracted from digital traces pertaining to their activities are used, suggesting that the manipulation of such information in the absence of consent constitutes an infringement of privacy norms. The problem with this argument is that many data mining operations foreclose on the social act of granting consent as it pertains to the use of personal data. Among the many examples where these practices are applied, such as Everythinggirl.com, in which consent is implied and incentives are offered in exchange for the personal information and product preferences of its young users. In the case of Neopets.com, the information collected from users includes a valid e-mail address, an e-mail address for a parent, the child’s birth date, gender and country. For users 13 years and older, the personal information requested includes “first and last name, valid e-mail address, birth date, gender, and postal code” (Neopets.com). Other data collected from site users are “type of

computer operating system (e.g., Windows 95 or Mac OS), the web browser (e.g., Netscape, Internet Explorer) being used, and information regarding the Internet service provider” (Neopets.com). Although the site refers to much of this information as “non-personally identifiable,” when data mining software is utilized it can abstract individuated information into aggregate forms, but the software operates on the basis of open-ended queries. Open-ended queries are used because data mining functions on the basis of ‘discovery’, where pattern matching and other algorithms seek out relationships in data that were not necessarily anticipated prior to data manipulation [37]. In consequence, data mining is to be distinguished from more traditional patterns of information retrieval in that it is based on implicit rather than explicit searching techniques which use non-predictive queries, serving to construct new and uncertain aggregated images from data warehouses.

It follows that there is an important distinction to be respected between the domains of public and personal information. Whereas personal information is commonly understood as corresponding to the intimate sphere—one’s personal data including birth date, gender, postal code, for example—public information is not associated with any such degree of intimacy. This leads to a further distinction between personal or intimate privacy and information privacy. Personal privacy pertains to one’s ability to protect against violation or exploitation of information sought in advance of intervention. Information privacy, however, is based on data gained from pattern-matching algorithms which function to develop data images in the first place. In the business practices of Neopets.com, the company collects and processes the personal data of its users in aggregate form. As well, the company sells its services and popularity to third party clients, who can “buy” a game, community feature, contest or survey, which is then seamlessly incorporated into the Neopets environment and heavily promoted within the website’s narrative discourse. Therefore, in the case of Neopets, the personal information of website users is not only processed in aggregate form, but is also released to outside agents and at times managed externally.

6. Tradeoffs to Site Access

The delineation between types of information and the various forms of privacy is one that is critical to whether data has the potential to become information that carries wider social implications such as the social sorting of individuals. Although not all data mining practices violate normative privacy rights, certain aspects of the practice need to

be further analyzed. While it would not be fruitful to reverse this position and declare that all data mining activities violate rights to normative privacy, Moor [21] has sought a solution by differentiating the mining of information from the context in which it is mined. When, for example, companies mine data to produce profiles on its users to facilitate and expedite the online experience, the context by most standards would be evaluated positively. Yet when those same data are mined for purposes of consumerism and marketability, perhaps by an Internet page that releases or sells the personal information of a user to an external market research company, the context or situation changes in a practical and an ethical sense. The point is that what counts in the formation of normative privacy guidelines is the situation or context, not the specific information being mined. Going back to the case of Neopets for instance, rewards are given to users in the form of points, the Neopian currency, “for signing up friends, filling out marketing surveys and linking to sponsors' sites.” In one NeoPets offer, users are asked to fill out their name, address and birth date so companies can send them “cool product samples” [33]. What results in this collection and use of personal data by marketers, is the clustering of populations according to geodemographic type. This is where the social sorting occurs, where “using such clusters in conjunction with postal [zip] codes, marketers sift and sort populations according to their spending patterns, then treat different clusters accordingly” [18]. The differential treatment of service is known as “digital redlining” or “weblining.” In these instances, “customers are classified according to their relative worth” [18].

Considering the increasing trends of data migration, these insights prove instructive in understanding the changing nature of the privacy debate. As is often the case, individuals may grant consent for their data to be mined for one purpose and in one context, but when those data find their way into other mining operations, the context changes. That much of the activity surrounding advocacy for privacy protection still congregates along the axis of personal data protection, it is infinitely problematic that many of data mining applications which function to render visible new categories of individuals cannot be anticipated by any one individual. The expansion of searchable databases and the sophisticated development of networked infrastructures, in other words, change the context in which such solutions were sought. The fall out is that affirmations to privacy norms and personal data protection are not capable of ensuring the very principles to which they aspire.

Data mining practices, therefore, present a paradoxical situation. While the abstraction of personal data into aggregate profiles tends to mitigate claims to the protection of personal data, those profiles may be applied against the persons from whom the data was originally abstracted. In one context, the identifying categorical characteristics found in user profiles (e.g. one's birth date and postal code) may serve to facilitate an efficient and accurate online surfing experience, but in another context identifying characteristics carry the potential to influence what Lyon [18] refers to as the “social sorting” of individuals. In this instance, “the resulting classifications are designed to influence and to manage populations and persons thus directly and indirectly affecting the choices and chances of data subjects. The gates and barriers that contain, channel, and sort populations and persons have become virtual” [18]. These processes and patterns are not unique to electronic information exchange, but data warehousing and mining techniques have greatly enhanced the scope to which such procedures apply.

Considering that data images and private sector profiling do have material consequences for embodied individuals, a reconfigured conceptual approach to privacy is required that can simultaneously account for context and personhood. That is, seeking to accommodate for the categorical nature of contemporary surveillance, it cannot be forgotten that data images derive from the traces left by embodied individuals. What is required is a conception of privacy which, in the words of David Lyon [19], considers personhood as central to its operation but which cannot be reduced to the individualistic level. In this vein, Vedder [41] advocates the notion of ‘categorical privacy’ as a set of normative principles or values which is irreducible to the level of individual privacy but which remains cognizant of the ‘individual constitution’ of social sorting. Categorical privacy takes as a central concern to protect the individual, but emphasizes the generalized properties of categorical images and how they present serious threats to the lives and life changes of embodied persons. Of even more importance is the contention that, while remaining in the moral-legalistic framework of privacy, the shift to a discourse on individual to categorical privacy signals a wider connection with normative principles such as social justice, equality and fairness. Indeed it was these social attributes that Lyon [19] had in mind when he called for clarity on what constitutes human dignity and social justice within categories and codes gleaned through contemporary surveillance systems.

A first step is serious interrogation of two interrelated concepts: fairness and awareness. Exemplified in the Neopets website, those who wish to use the services of any of the websites mentioned are not permitted the option of opting out of the system without being denied access to the site's activities and features. Furthermore, it is unlikely that users, especially children and young teens, are actually aware of the fact that their data are being compiled on such a grand basis. Studies into young people's online behaviours suggest that children hardly ever access website privacy policies [30], which are at any rate often laden with legal and technical jargon that is difficult for even adult readers to fully comprehend. The contentious nature of EULAs, which claim sweeping and irrevocable ownership over all that is said and done within the sites, further problematizes these issues in that the ambiguous and seemingly ubiquitous reach of 'terms of use' contracts have thus far allowed website operators to comply to existing children's privacy laws (where applicable) on the one hand, yet accumulate vast databases of richly detailed user information on the other. Though social conceptualizations of intellectual property, privacy, and personhood are being challenged by adult Internet users in various arenas, these same debates are rarely applied to children's online spaces. While it may be more difficult to imagine knowledge of children's play habits and social interactions as a highly valuable commodity, the reality of the \$115 billion children's consumer market and the massive profits amassed by children's marketers prove otherwise. Awareness of the intermediary role data mining and market research plays in the relationship that exists between children playing online and the continued growth of the children's commercialized entertainment is crucial to understanding the consequences of the processes that unfold within the children's digital playground.

7. Privacy Protection Frameworks

The privacy of personal information has become a pressing concern for users of the online environment. In 1998, a survey carried out by Georgia Tech "showed that 53 percent of the 1,482 participants were very concerned about privacy and security on the Internet" [26]. As this issue has been recently brought to the forefront of policy agendas in the global arena (e.g. United Nations Convention on the Rights of the Child, US Federal Trade Commission), this paper will focus on two recently implemented frameworks, namely, COPPA in the US, and PIPEDA in Canada, that reflect how government agencies have addressed privacy issues

combining consideration for human rights while facilitating the online economic activities of private industry.

In response to growing public debate over the commercialization of children's online spaces, COPPA was passed by the US Federal Trade Commission (FTC) in 1998, taking effect in April, 2000. COPPA established new laws regulating the relationship between marketers and children online, requiring that commercial websites aimed at children under the age of 13 conform to a variety of guidelines aimed at ensuring that children be "treated fairly by marketers and advertisers" [22]. Included in this new set of laws is the requirement that children's websites (both those directly aimed at children and those that knowingly gather information from users under the age of 13) (a) give parents notice about their data-collection activities; (b) obtain verifiable parental consent prior to collecting information from children; and (c) provide parents with access to any information collected from their children, as well as the opportunity to discontinue any further uses of the data collected [3, 22]. One of the most important shortcomings of the act is its narrow definitions of privacy and what constitutes as personal information. For instance, the COPPA laws apply only to personal information from a child in identifiable form [3], and do not take into account data collected and stored in aggregate form.

As a response to Canada's challenge in finding a balance between the private sector's progressions in information technology and data management, Canada's Parliament passed a law in 2000 to outline rules for the collection, use, and disclosure of personal information in the realm of the private sector. The legislative framework of PIPEDA encompasses internationally agreed upon principles where an organization in the private sector "must be accountable for all personal information in its possession; should identify the purposes for which the information is processed at or before the time of collection; should only collect personal information with the knowledge and consent of the individual; should be open about its policies and practices and maintain no secret information system..." [1]. Full implementation of the legislation came into effect at the start of January, 2004.

A comparative analysis of these two policies reveals a set of complimentary strengths and limitations. While the US has shown exemplary progressiveness and forward-thinking in terms of formulating a legislative framework that recognizes the special attention and status we must accord to the human rights of children (in this case, privacy rights), the Canadian legislation recognizes

emerging new problems and dimensions for consumers' rights within the context of online economic activities. On the other hand, while COPPA fails to adequately define and address the full spectrum of commercial transactions that are taking place within children's online environments (through a very limited approach to privacy and what constitutes personal information), PIPEDA fails to give any special consideration to children who are perhaps unaware or unable to enter into informed legal contracts. A more comprehensive approach would combine the aforementioned strengths of both acts, while omitting the oversights that have thus far limited the potential effectiveness and impact these frameworks might otherwise possess. In short, in order for children's digital play spaces to truly promote and protect the rights of the child within economic contexts, an amalgamation of the principles of these two country's legislative responses to children online will have to occur. The following section provides a starting point of considerations for developers to follow in incorporating this more comprehensive approach.

8. Guidelines for Developers

A framework for developer guidelines proposed by Preece encompasses the four areas of: people, a shared purpose, policies, and computer systems. In considering the first of Preece's areas, people, a fundamental shift in the way that children's website designers have adapted to the COPPA requirements must take place. While privacy policies and EULAs are now commonplace features of children's websites, they are rarely given the high visibility and degree of attention that they deserve. In order to ensure that these important legal contracts are not overlooked by users, they should be more prominently displayed on the site or more fully integrated into the primary content of the site (e.g. a game could begin by taking users through the terms and conditions, privacy clauses, in a fun but informative way). Furthermore, every effort should be made to facilitate children's understanding of the various legal aspects of the contracts they are asked to enter into. While children's site designers are extremely talented at creating games and spaces that children are drawn too and deeply connect with, EULAs and privacy policies are not articulated in a language that is accessible to young audiences. A more child-friendly approach, such as that adopted by the UN in their articulation of the Convention on the Rights of the Child, would include two versions of such contracts: one in a simplified language that even very young children could understand, and one for adults with the formal, legal terminology.

In establishing guidelines for an online community, policies are often in place for determining the "requirements for joining a community, the style of communication among participants, accepted conduct, and repercussions of nonconformance" [26]. As we have seen in the case studies examined above, policies (particularly EULAs) now also include clauses for copyright protection, and intellectual property claims over the entirety of the site's (and the user's) contents, aimed at generating profit and brand management rather than fostering community interests. As online communities become increasingly important arenas for social development and cultural participation, the opportunities they provide to both users and commercial operators will continue to expand. So too, however, will underlying tensions between human rights and current market research practices. The economic models of online communities and games must therefore address human rights issues, through the inclusion of the privacy protection frameworks offered by COPPA and PIPEDA for instance, if future conflicts of interest between users and developers are to be avoided.

9. Conclusions

The uses and potential abuses of personal information requires, first, an explicit and clear campaign of awareness as to what uses data may be put to in the storage and mining process. This places the onus of responsibility with those who seek to use personal data and for what purposes. The project of promoting awareness is underscored by the principle of fairness. By providing 'data subjects' with information concerning how their personal data are used, they are necessarily granted the opportunity to resist or negotiate the uses of information. With opportunity comes the recognition that through processes of 'deindividualization' [41] there remains embodied personhood. Though one of the consequences of data mining is categorical profiling, the resurrection of embodied personhood is key. Although social sorting and categorization have the effect of dividing or separating the embodied individual from data images, those data images have effects on life changes and it was from the individual where they were abstracted from.

As a result of the development of online game sites such as Neopets.com, young people from all corners of the world can participate in a shared, interactive community. Accessing such a site carries its costs, however. In order to participate and gain access to the tools and play spaces offered by

companies like Neopets Inc., young users must first agree to relinquish vast amounts of his/her personal information. Although website privacy policies are in place in the various sites analyzed, the flow of this data is nonetheless questionable. For while COPPA, PIPEDA, and other attempts to regulate child-oriented websites consist of important first steps towards the protection of children's rights within the online environment, their effectiveness is already greatly hampered by technological advances in data mining capabilities, as well as the innovative and highly adaptive strategies of market researchers.

Given the vast and technical complexities involved, ongoing research in this area is needed to further explore the issues raised in this analysis, including the implications of data mining, privacy, organizational control and the division between rhetoric and reality of how information gathering and processing practices are carried out on a daily basis. Further study of the activities and interactions children engage in while participating in these sites is also needed, in order to more fully understand the nature of the exchange that occurs between children and data miners, and how existing and future policies may address these emerging issues.

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