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SELF-REGULATORY SAFEGUARDS AND THE ONLINE PRIVACY OF PRETEEN CHILDREN

Implications for the Advertising Industry

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ABSTRACT: Online advertisers are increasingly enjoying the ability to target messages to specific segments based on information collected at Web sites. Information collection, particularly from children, has been an ongoing concern of regulators, consumer advocates, and advertising industry organizations. Although the U.S. Federal Trade Commission (FTC) has advocated the implementation of safeguards (such as warnings, threats, and barriers) designed to limit children's online disclosure of sensitive information, little research to date has examined the effectiveness of these safeguards. We address this issue by first examining the current state of online safeguards for Web sites that target preteen children, a group shown to be particularly vulnerable to the persuasive efforts of marketers. We then present a quasi-experimental investigation of online safeguard types and how their effectiveness in limiting preteen information disclosure is moderated by the mediation strategies of parents. Implications for advertisers, policymakers, parents, and educators are discussed.

Web sites have become critical tools for advertisers both in their role as target ads (Hoffman and Novak 1996) and in the placement of third-party advertising, thus making them suitable for commercial persuasion as well as data gathering. Advertisers are increasingly benefiting from the ability of the Internet's interactive environment to provide varying levels of detailed information about target audiences and their preferences, interests, and behaviors. Along with this opportunity, however, comes criticism from researchers and policymakers concerned that collecting such information for targeting and advertising purposes, particularly from children, is an invasion of privacy (Kunkel et al. 2004). Because children are accessing the Internet at growing rates worldwide (Livingstone and Bober 2005), their risk of disclosing sensitive information in online environments is growing as well (Friedman 2000; Lwin, Stanaland, and Miyazaki 2008; Montgomery 2000). In addition, research has shown that age group is a powerful predictor of understanding on the Internet, with younger users having less technical and social understanding of the complex online environment (Yan 2006). To address the issue of children's vulnerability to online privacy invasions, U.S. legislators and government agencies have continued their efforts to create guidelines and regulations regarding what online advertisers can do with respect to collecting information from children (Bergman 2006; Kaiser Family Foundation 2006). However, the efficacy of such legislation, as well as its ability to withstand Supreme Court approval, has been called into question and further legislation is being considered (Vijayan 2007; Williamson 2004). As a result, a number of antilegislation advocates are suggesting that a better route toward the online protection of children's privacy would be through mandated education efforts and self-regulation using online safeguards (Lwin, Stanaland, and Miyazaki 2008; Sampson 2008). It is in the industry's best interest to address and remedy privacy concerns via self-regulation before the current state of activities leads to increases in government regulation. To do so first requires an understanding of the ability of existing restrictions to adequately protect children's online privacy.

Little research has focused on whether online safeguards such as warnings, threats, and barriers can reduce information disclosure by children and what other factors may influence their effectiveness. We address this lack of research by discussing the use of threats and warnings as safeguards to prevent children from disclosing sensitive information, as well as the role of parental mediation in moderating the effectiveness of those safeguards. We next examine the online environment for preteen (age 12 or younger) children with respect to the presence of online safeguards on Web sites targeted toward this group. Preteen children were chosen for study due to their vulnerability and to the importance of teaching safe Internet

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practices at an early age. We then present a quasi-experimental study that examines the efficacy of two safeguard conditions against a control condition and how parental mediation strategies can moderate the efficacy of these safeguards with respect to an older (10- to 11-year-old) subset of preteens who, although at an age where they are beginning to recognize bias in persuasive attempts (Roedder John 1999), often still lack a full grasp of the dangers of providing sensitive information online (Montgomery 2000). Finally, we discuss the implications for online advertisers and self-regulation.

LITERATURE REVIEW

Children and Online Media

Web sites targeted toward children are broad in their scope and purpose, with many offering games, contests, and various degrees of social networking in an effort to solicit names, ages, e-mail addresses, physical addresses, phone numbers, demographics of family members, attitudes, opinions, and other personal information (Friedman 2000). For example, one recent study found that 73% of children's Web sites studied use "advergames" (i.e., online games featuring products or brand characters), and 25% of the sites offer membership opportunities for children under age 12 (Kaiser Family Foundation 2006). Most 8- to 18-year-olds in the United States are in homes with online access (Kunkel et al. 2004), and reportedly use electronic media an average of 6.5 hours a day (Roberts, Foehr, and Rideout 2004). Web sites that request advertising-useful information from children include entertainment sites (e.g., Nickelodeon's Nick.com), online retailer sites (e.g., KidsCom.com), bricks and mortar retailer sites (e.g., ChuckECheese.com, BuildaBear.com), and food and toy manufacturer sites (e.g., RiceKrispies.com, Lego .com, Hotwheels.com). Although the vast majority of these Web sites state that children under 13 should not register without parental consent, much of their content is clearly targeted at that younger age group.

Researchers and policymakers recognize the profound changes in recent years regarding the amount and the nature of commercial persuasion available to young audiences (Kunkel et al. 2004). The recent rise of social networking Web sites (such as MySpace, Facebook, and Bebo), their popularity among young consumers, and their interconnections with commercial content (Lenhart and Madden 2007) have spurred U.S. lawmakers to introduce legislation such as the *Deleting Online Predators Act of 2006,* which would prohibit most public libraries and schools from providing children with access to these and similar sites (Library of Congress 2007). Other legislation specifically targeting commercial Web sites is also in the works, partly due to the fact that younger Web surfers have been found to be most vulnerable to online communication efforts as compared to older surfers (Clarke 2002; Montgomery 2000; Pasquier 2001) and that children in general are more susceptible to marketers' persuasive attempts (Roedder John 1999). One of the key concerns regarding online targeting efforts has been the collection and use of consumer information (Lwin, Wirtz, and Williams 2007; Miyazaki 2008; Miyazaki and Fernandez 2001), and children have been shown to be more willing than adults to disclose personal information online (Turow and Nir 2000).

Regulation and Self-Regulation of Web Sites

Advertising directed at children is regulated via both industry self-regulation and government legislation. The most notable legislation limiting the collection of information from preteen children is the Children's Online Privacy Protection Act of 1998 (COPPA). COPPA regulates Web sites that are directed at children under 13 and is administered by the U.S. Federal Trade Commission (FTC). Any such Web site that collects information online, regardless of the means, is required by COPPA to obtain parent or guardian consent—referred to as a "barrier safeguard"—before doing so. However, even the FTC acknowledges that children can circumvent this rather simplistic barrier by lying about one's age or falsifying parents' e-mail accounts (FTC 2007b). Industry watchdogs have been paying close attention to potential inadequacies with this legislation. In 2004, the Center for Digital Democracy, a consumer advocacy group, urged the FTC to strengthen regulations because it felt that aggressive advertising practices had far outstripped the capabilities of COPPA (Mack 2004). Although the FTC decided to retain COPPA rules without modification in 2006 (Bergman 2006), future strengthening and augmentation of these guidelines in response to consumer privacy concerns is a possibility that should not be ignored by the advertising industry.

The advertising industry has responded to children's online privacy protection issues through its self-regulatory body, the Children's Advertising Review Unit (CARU). CARU provides advertisers with explicit guidelines in its manual entitled "Self-Regulatory Program for Children's Advertising" under the section "Guidelines for Online Privacy Protection" (CARU 2008a, pp. 10–13). Those guidelines mirror COPPA requirements, including recommendations for data collection, age screening, verification of parental consent, parental notification, and opt-in and opt-out considerations (CARU 2008a). Advertising self-regulation is preferred by the industry over government legislation because it is usually faster and less expensive than formal legislation, promotes a more flexible and up-to-date industry, and creates an essential line of defense against excessive government controls (Boddewyn 1992). However, merely conforming to the "letter of the law" may not be enough. If regulations are ultimately deemed to be

ineffective, merely meeting such requirements will not protect the industry from more restrictive regulations in the future, nor will it provide adequate protection for young consumers. In late 2007, for example, CARU awarded a children's networking and blogging site, imbee.com, its "Kid's Privacy Safe Harbor Seal" because the site offered an "unparalleled level of protection" of children's privacy (*Industrious Kid* 2007). In January of 2008, however, the FTC charged that imbee.com's data collection practices violated federal law, and the Web site was forced to make alterations to its data collection procedures to settle the FTC's complaint (*Computer and Internet Lawyer* 2008). Evidently, what is exemplary in the eyes of CARU may not measure up to the COPPA standards as viewed by the FTC, which does not bode well for the future of online advertising self-regulation.

It is therefore imperative that the advertising industry scrutinize current COPPA requirements such as online barrier safeguards and study alternatives to assess their effectiveness. As an alternative (or supplement) to barrier safeguards, many Web sites use warnings and threats in an attempt to dissuade preteen children from inappropriately providing their information (Friedman 2000; Lwin, Stanaland, and Miyazaki 2008). An examination of such warnings and threats is hereby warranted.

Online Warnings, Online Threats, and Preteen Children

Advertisers with content targeted toward preteen children have at their disposal a variety of child-oriented safeguards, from simple warnings to threats to a range of barrier safeguards, to dissuade these children from providing sensitive information without parental consent. Warning safeguards may warn children of Web site content that is inappropriate for their particular age group, state that entry or registration is only available to children of a certain age (e.g., age 13 and over to comply with COPPA guidelines), or ask only children of that particular age to enter or register. Threat safeguards may inform children that their registration can be reported to parents, teachers, regulatory agencies, or other authoritative figures, thus threatening the anonymity often felt by young Web surfers. Barrier safeguards are more prohibitive, most often requiring parental approval (via e-mail, mail, phone, fax, or use of a credit card). Although researchers have acknowledged the ability of even younger children to bypass even parental approval safeguards, they are often deemed more effective than warning or threat safeguards (CME 2001; FTC 2007b). The efficacy of warning and threat safeguards remains largely untested, however, particularly for the preteen segment that is at the heart of many COPPA guidelines. Thus, the focus here will be on warning and threat safeguards and their effectiveness in limiting preteen information disclosure.

Recent research that has examined online safeguards to information disclosure found that a combination of both warning and threat safeguards was effective in reducing information disclosure in preteen children (Lwin, Stanaland, and Miyazaki 2008). However, research on children's reactions to authoritative mandates suggests that differences may exist in how children, particularly preteens, will respond to warnings versus threats (Grandpre et al. 2003). Such research relies on psychological reactance theory to understand children's safeguard-related behavior. Psychological reactance theory suggests that the presentation of a warning, limitation, or barrier to the acquisition of a desired object will often increase the attractiveness of that object, even to the point that a consumer will go to great lengths to obtain access to it (Brehm 1972). Prior research in consumer behavior has at least partially attributed certain deviant consumer behaviors such as shoplifting, the purchase of pirated or stolen goods, and extreme attempts to acquire scarce items to psychological reactance to an authoritative barrier or restriction (Clee and Wicklund 1980; Cox, Cox, and Moschis 1990; Miyazaki, Aguirre Rodriguez, and Langenderfer 2009). This "boomerang effect" often results in the individual operating in precisely the opposite manner to whatever proposed safeguard is put into place (Eagly and Chaiken 1993).

However, the theory also takes into account the potential for certain restrictions to be perceived as too large to overcome, and in those instances, they do not strengthen the motivation to obtain the desired object (Brehm 1972). In the case of preteen children and their desire to access a particular Web site, a warning safeguard stating the inappropriateness for certain age groups may act as an enticement due to reactance arousal. This is similar to research showing that the desire to view television programs was increased in the presence of warning-like advisory ratings (Fleming 1997; Herman and Leyens 1977). Such a reaction is more likely to occur if the children do not foresee any harmful or threatening consequences to their behavior (Wogalter, Barlow, and Murphy 1995), or, in other words, when no threat safeguard is present. When a threat safeguard is present, it would more likely be perceived as an insurmountable restriction (Brehm 1972) and thus reduce intentions to bypass the safeguard and access the Web site. This is particularly true for preteens who are more likely to respect a valid authoritative threat than if the target audience were older teens (Brehm and Brehm 1981; Pasquier 2001).

Thus, it would be expected that when presented with a mere warning safeguard, preteen children might ignore it or perhaps react in an opposite manner such that, respectively, they may either fail to reduce information disclosure levels or perhaps increase them. When presented with a safeguard that threatens authoritative (i.e., parental) notification, however, they should be more likely to comply with the warnings and thus reduce information disclosure.

H1: Preteen children presented with a warning-only safeguard (versus a control condition with no safeguard) will either not change or increase their willingness to disclose sensitive information.

H2: Preteen children presented with a safeguard with both a warning and a threat component (versus a control condition with no safeguard) will decrease their willingness to disclose sensitive information.

Parental Mediation Strategies

While the FTC has focused its efforts on regulatory intervention, parental mediation or intervention has also been shown to be an effective form of protecting children in an online environment (Lorenzana 2002). The style of or approach to parental intervention can determine the degree of a child's moral development, however, including his or her propensity to resist temptation and understand the consequences of particular behaviors (Greenspan and Simeonsson 1978; Hoffman 1979; Perry 1994). These parental intervention styles have been studied in the context of media usage and children (e.g., Lenhart and Madden 2007) and include two general types, namely, *regulated (generally restrictive) mediation* and *active (generally instructive) mediation* (Nathanson 2001a, 2001b; St. Peters et al. 1991). Regulated mediation typically consists of parents setting rules regarding how much and which content children are allowed to view, and has been shown to reduce younger children's time spent with a particular medium (Atkin, Greenberg, and Baldwin 1991; Lin and Atkin 1989; Truglio et al. 1996; Valkenburg et al. 1999). Active mediation consists of parents discussing media experiences with children in a way that encourages children to attend to key factors in the media presentation and be skeptical of dubious claims or requests (Buijzen and Valkenburg 2005; Buijzen, van der Molen, and Sondij 2007; Klein, Nir-Gal, and Darom 2000; Nathanson 2001a, 2001b). Active mediation has been shown to be more effective than regulated mediation by better educating children as media consumers, and is particularly recommended in cases of highly interactive technical environments such as the Internet (Klein et al. 2000; Valkenburg et al. 1999; Warren 2001). Most important, active mediation allows children to better interpret their media experiences even when not accompanied by direct parental supervision (Desmond, Singer, and Singer 1990), which is likely in an online environment. While much of the research on parental mediation has focused on television viewing, recent research by Nikken and Jansz (2006) has shown the usefulness of investigating parental mediation in other media settings as well, such as children's video gaming.

Extant research has found that parents may use no mediation, active mediation, restrictive mediation, or both types. These four mediation styles are categorized as (1) laissez-faire (or unmediated) mediation, (2) restrictive (low active, but high regulated) mediation, (3) promotive (high active, but low regulated) mediation, and (4) selective (both high active and high regulated) mediation (Lwin, Stanaland, and Miyazaki 2008; St. Peters et al. 1991). Although little research has examined how parental mediation strategies affect Internet usage by children, evidence suggests that while both regulated and active mediation would likely lead to lower levels of information disclosure, active would be most effective. This is due to active mediation's enhancement of children's abilities to evaluate the safety of providing information to particular Web sites (Klein, Nir-Gal, and Darom 2000; Machill 2002; Nathanson 2001a). If the use of both mediation types worked in an additive manner, it would be expected that selective mediation (high levels of both types) would be most effective in limiting information disclosure in that children exposed to this mediation would not only benefit by an enhanced ability to make disclosure decisions, but would also be subjected to certain online access restrictions (Zillman, Jennings, and Huston 1994). This would be followed by promotive (high active), restrictive (high regulated), and finally laissez-faire (low levels of both mediation styles, wherein children are neither educated about the Internet nor have their online behavior regulated). Indeed, Lwin, Stanaland, and Miyazaki (2008) found such a pattern in their research on older teens, younger teens, and preteens. Thus:

H3: The type and level of parental mediation will influence preteen children's online disclosure of sensitive information in the following order from least disclosure to most disclosure: selective mediation, promotive mediation, restrictive mediation, and finally, laissez-faire mediation.

Parental Mediation Strategies as a Moderator of Safeguard Effectiveness

Prior research has shown that parental mediation strategies can moderate the effectiveness of a combined set of online safeguards. Specifically, Lwin, Stanaland, and Miyazaki (2008) provided some evidence that the effectiveness of a warning/threat combination safeguard would be diminished as parental mediation strategies gained in strength (i.e., increased in the level and quality of parental involvement). This was presumably due to the ability of the more involved mediation strategies to bring disclosure down to such a low level that the combined safeguard added no further protection. In the case of the warning-only safeguard, however, wherein a certain degree of psychological reactance is predicted, thus raising disclosure rather than lowering it, the additional involvement provided by the stronger parental mediation types should continue to show effects. In terms of moderating the

safeguards then, we expect (as illustrated by some of the Lwin, Stanaland, and Miyazaki 2008 findings) parental mediation strategies to moderate the warning/threat combination safeguard, such that children with more involved strategies will experience smaller safeguard effects on information disclosure. However, we do not expect such a moderation effect for the warning-only safeguard.

H4a: The ability of the warning/threat combination safeguard to decrease preteen children's online information disclosure will be attenuated as parental mediation strategies strengthen (i.e., become more involved).

H4b: This moderation effect will not occur for the warning-only safeguard.

Prior research conducted shortly after the implementation of COPPA reported that up to 40% of Web sites used only warnings to remind children not to register if under age 13 (CME 2001). Indeed, the adherence to COPPA guidelines has been a subject of concern since shortly after they were implemented, with one study reporting that almost half of child-focused Web sites were in noncompliance (Turow 2001). Early studies reported that at least 25% of older male teens and 15% of younger teens admitted overstating their ages to gain access to a Web site, often to view pornographic material (Pew Internet & American Life Project 2001). A recent report by the FTC confirmed that age falsification by children remains one of the largest problems with the current system (FTC 2007a). Considering the potential for significant changes during the past seven years, it is fitting to update the data regarding children-oriented Web sites and the types of safeguards they present. We conducted such a study and present the findings below, followed by findings of a study testing the previously developed hypotheses.

STUDY 1: PRETEEN SAFEGUARDS IN THE ONLINE ENVIRONMENT

Study 1 was designed to provide a simple exploratory assessment of the presence and types of safeguards currently found on Web sites with significant appeal toward preteen children. The FTC considers several factors in determining whether a Web site is directed toward children, such as the nature of the subject matter and language used, the ages of models or characters on the Web site, and whether the site has child-oriented features such as games or child-level animated characters (FTC 2007b). However, it is important to note that the FTC does not explicitly define in COPPA what constitutes a Web site that is "directed to children."

In that no such previous examinations of children's Web sites were found, we began by identifying preteen-oriented Web sites using both Web searches (including children-oriented portals) and informal surveying of preteen and young teen children. We generated a list of 282 Web sites that appeared to be oriented toward children based on the FTC guidelines. We then selected a random sample of 150 Web sites to evaluate. Although the sample was not drawn randomly from all possible Web sites, the sampling domain included all applicable sites from a variety of online lists of children's Web sites and similar sampling methods have been used previously in Web site content analyses (Hoy and Phelps 2003; Miyazaki and Fernandez 2000).

To validate our selection of Web sites that appeared to have particular appeal to preteens, we asked two preteen children (one 10 and one 11, who both had considerable online experience) to separately examine each Web site and rate the degree to which the child or his or her friends would potentially want to return to the Web site in the near future. Each child was permitted to surf each Web site for several minutes if it was not a familiar one, and then a four-point scale was used to assess whether they or their friends "definitely would not," "might," "probably," or "definitely would" want to have access to the Web site later in the week. The evaluation process was spread over three weeks to keep the evaluators from becoming fatigued or disinterested. Only those Web sites (n = 12) that had at least one "probably" or "definitely would" rating were included in the final safeguard analysis.

The safeguard analysis (conducted in January 2008 by two trained graduate assistants) examined whether any safeguard was present to dissuade children from registering on the site and providing information unless they were at least 13 years old (as recommended by COPPA guidelines). Safeguards were categorized into warning, threat, or barrier safeguards. Warning safeguards included statements regarding age-inappropriate content, that underage children should not register, that the Web site was only for children age 13 or older, and/or the requirement that users be 13 or older. Threat safeguards threatened parental or other authoritative notification, and barrier safeguards required parental consent to assure the minimum age limit was maintained.

Of the 112 Web sites, 34 (30%) had no safeguards at all; 26 (23%) had only warning safeguards; 10 (9%) had warning and threat safeguards; and 41 (37%) had warning, threat, and barrier safeguards (one Web site had only a threat safeguard). Although the examination of the Web sites was not a comprehensive investigation of all Web sites targeted toward children, it provides insight into the variety of safeguards present (and absent) in children-oriented Web sites. Specifically, the results from the marketplace examination clearly show the lack of consistency across Web sites with respect to how they approach COPPA guidelines. It also validates the sentiments expressed by the FTC (2007a) report that the current system of age verification is potentially problematic. More important, it begs the question as to whether differences in the types of

safeguards presented to children can impact their willingness to disclose sensitive information, a behavior that has been one of the key focal points of FTC interest. Study 2 now presents the results of an experimental examination of safeguard types using the 10- to 11-year-old subset of the preteen age group specifically targeted by COPPA.

STUDY 2: ONLINE SAFEGUARDS AND PARENTAL MEDIATION

Study 2 was designed to examine how the type of online safeguard (no safeguard, warning safeguard only, and warning/threat combination) can influence information disclosure in preteen children. It also examines how parental mediation strategies can interact with a particular type of online safeguard. The study was conducted with 10- and 11-year-old children in that this group is within the target group for FTC interest and COPPA guidelines (i.e., under 13), and represents a considerably vulnerable target segment that is beginning to operate outside the control of direct parental influence (Roberts et al. 1999), but still lacks the ability to fully comprehend marketers' persuasive efforts (Roedder John 1999). In fact, a study of the online behavior of "tweens" (8- to 12-year-olds) sponsored by Cox Communications in partnership with the National Center for Missing and Exploited Children found that older children from this group spend more time online, are less likely to tell their parents about their online activities, and are more likely to post personal information online such as their age, the city where they live, the name of their school, and photos of themselves, as compared to younger children in that age range (Cox Communications 2008).

A lack of successful industry self-regulation with respect to this age group is almost certain to result in stricter government regulation that may impact online advertisers in their efforts to target other age groups as well. Recent work has shown the validity of using children in similar research (Lwin, Stanaland, and Miyazaki 2008), and use of child participants has been common in the parental mediation literature (Nathanson 2001c; Nathanson and Yang 2003; Nikken and Jansz 2006). Prior studies have shown that children's estimates of parental mediation are more reliable than that of their parents, which are often overstated (Greenberg, Ericson, and Vlahos 1971; Rossiter and Robertson 1975). More recently, Nathanson (2001b, p. 125) explained that parents may be tempted to provide socially desirable responses and may distort their answers to mediation questions to demonstrate that they are "good" parents.

Method

The sample of 10- and 11-year-old children was drawn from a local grade school that agreed to participate in the study. Approval was acquired with respect to the procedures and the materials at the university, grade school, classroom, and parental levels. Also, children had the opportunity to not participate if desired. The school was located in a middle-class section of the metropolitan area, but figures regarding parental income and demographics were not collected due to restrictions set by the participating school. All screening of the children (e.g., correct age group, online experience) was conducted after the data collection so that no child felt excluded from the activity.

The children were presented with a scenario involving their potential participation in a children-oriented Web site. The procedure, based on Lwin, Stanaland, and Miyazaki (2008), consisted of having the children imagine that they were surfing the Internet and came across one of their favorite Web sites that had a new online club that their friends had already joined and had described as "cool and useful." It was explained that the club offered a number of benefits (e.g., a personalized home page, access to chat rooms, newsletters) and that the children would need to provide various pieces of personal and sensitive information to register, consistent with a wide variety of child-oriented Web sites (e.g., Disney.com, Lego.com, Hotwheels.com, BuildABear.com). Children were also randomly presented with one of the safeguard conditions (discussed next), which was explained as being present upon their initial entry into the Web site.

The children were instructed regarding a survey that followed the presentation of the scenario, including a visual demonstration of how to complete the survey materials. Teachers and other administrators were present to clarify any procedures.

Manipulations and Measures

The safeguard manipulations were based on actual online examples and had been previously tested (Lwin et al. 2008). The warning safeguard had statements explaining that the Web site was not appropriate for children under 13 ("This Web site is not suitable for children below age 13"), that the child must be 13 to register for membership ("I understand that I must be at least 13 to register for membership"), an order that underage children must not register ("Underage children should not register"), and a declaration that the child is an appropriate age ("I declare that I am at least 13 years old"). The warning-plus-threat safeguard also included the threat of parental notification via e-mail after registration ("Your parents may be notified via e-mail after your registration"). There was no safeguard present in the no-safeguard control condition.

After the presentation of the scenario that included the safeguard manipulation, the dependent measures were presented, which included questions asking how willing the child was to

disclose various types of information. The items, including full name, telephone number, home address, and other sensitive information, were adapted from prior work on information disclosure (Lwin, Williams, and Wirtz 2007; Phelps, Nowak, and Ferrell 2000). For each information item, children were asked how likely it was that they would provide that information; the seven-point Likert-type response scale ranged from "extremely unlikely" to "extremely likely."

Items assessing the mediation strategies used by the children's parents were then presented. These items, assessing active and regulated mediation, were taken from Lwin, Stanaland, and Miyazaki (2008) and are based on established scales measuring parental mediation in other popular media (Austin 1993; Bybee, Robinson, and Turow 1982; Turow 1999), but modified for relevance to preteens and the online computer environment. Four items assessed active mediation ($\alpha = .83$) by asking whether parents explained to children about strangers on the Internet, what to do when encountering messages from unknown people, how to end uncomfortable online experiences, and any monitoring of chat friend lists; two items assessed regulated mediation ($\alpha = .80$) by asking if parents limited the amount of time the children could be online and limited what time(s) of day they could go online (Lwin, Stanaland, and Miyazaki 2008). The respondents rated each item as to how often their parents mediated their online usage on a scale of 1 (not at all) to 7 (all the time). Scale item responses were averaged so that final scales ranged from 1 to 7.

The overall scenario and the associated questionnaire had previously been constructed with the assistance of teachers and parents familiar with the target age group. After several iterations, a pilot study was conducted wherein children were asked to think aloud when evaluating each item and to ask for any needed clarification. The sensitivity of each information item was examined in a separate pretest, with personal information being deemed more sensitive than general demographic information.

Sample

Initially, over 400 children participated in the study. Respondents who did not fit the target sample (those not in the target age group of 10- to 11-year-olds, those who did not go online, and those without at least one parent at home) were dropped from the analysis. Of those remaining, an approximate median split was conducted on the mediation scores in order to form the four specific mediation type groups. Children who rated their parents' mediation level above 4.0 on each mediation style were classified as being under high active ($n = 162$) and high regulated ($n = 183$) mediation, while those under 3.0 were categorized as being under low active ($n = 213$) and low regulated ($n = 192$) mediation. Respondents whose parents did not fall into these categories were dropped as well. The responses to these scales were combined to formulate the four distinct mediation styles described previously: selective ($n = 98$), promotive ($n = 64$), restrictive ($n = 85$), and laissez-faire ($n = 128$). The final sample was 375 respondents, with 54% being girls and 46% boys, with an average age of 10.6 years.

Results

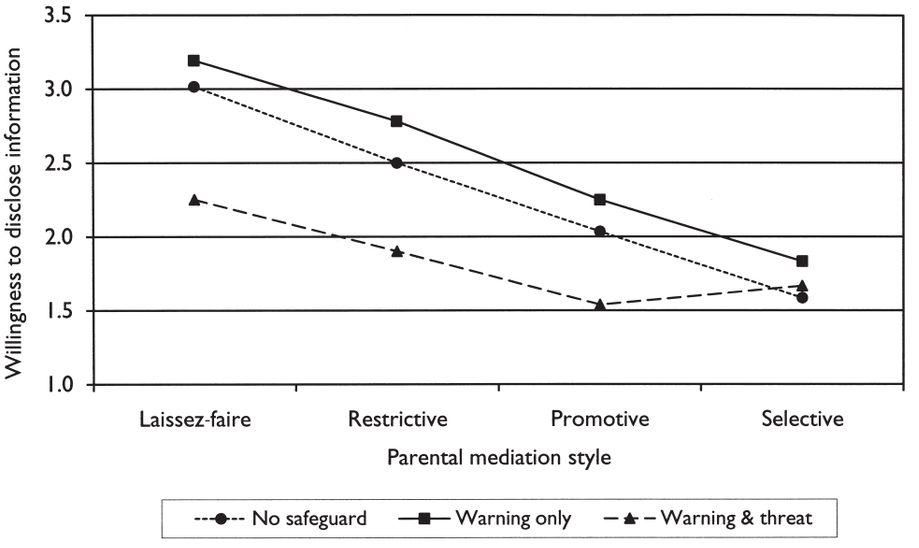
Hypotheses 1 and 2 posited that although children experiencing the warning/threat safeguard combination would reduce their willingness to provide information, those receiving only the warning safeguard would increase their information disclosure or have no change over a control condition with no safeguard. Results show support for both hypotheses. Specifically, the presence of the warning/threat combination safeguard ($M = 1.91$) resulted in lower disclosure levels over the control ($M = 2.33$) condition ($t_{262} = 3.92$, $p < .01$, $\eta = .31$), whereas the warning-only safeguard ($M = 2.59$) resulted in higher disclosure than the control condition ($t_{234} = 1.88$, $p < .05$, $\eta = .13$).

Hypothesis 3 proposed main effects for the parental mediation strategies such that the more involved the strategy, the lower would be the disclosure level. The pattern of mean disclosure for each mediation type is supportive of the hypothesis, $F(3, 374) = 26.00$, $p < .01$, $\eta = .48$), with laissez-faire mediation having the highest disclosure ($M = 2.78$), followed by restrictive ($M = 2.34$), promotive ($M = 1.95$), and selective ($M = 1.68$).

Finally, H4a and H4b proposed an interactive effect between the presence (versus absence) of each safeguard and the parental mediation type. Specifically, although the warning/threat safeguard was proposed to diminish in effectiveness as mediation types became more involved, no such interaction effect was proposed for the warning-only safeguard. Again, the results were supportive, with a 3 (no safeguard versus warning only versus warning/threat) × 4 (mediation types) ANOVA (analysis of variance) showing a significant interaction term, $F(6, 374) = 2.18$, $p < .05$, $\eta = .19$. Specifically, an interaction with mediation type was present for the comparison between the warning/threat safeguard and the control condition with the expected pattern of results (see Figure 1), but not for the comparison between the warning safeguard only and the control condition.

Overall, Study 2 provided empirical validation of the hypotheses, showing a warning/threat combination safeguard to be effective in reducing preteens' willingness to disclose information (H2), but showing the warning-only safeguard to actually raise disclosure levels (H1). Parental mediation strategies were shown to vary in their effect on information disclosure, with more involved strategies resulting in lower disclosure (H3) and mediation strategies differentially moderating the safeguards (H4).

FIGURE 1
Study 2: Willingness to Disclose Sensitive Information (10- to 11-Year-Olds)



DISCUSSION

Research examining warnings has suggested that creating warnings for particular target segments increases effectiveness, and social change communication research suggests that advertisements with a credible element of threat or consequence will be more effective than those without, particularly for younger individuals (Moorman and Matulich 1993; Schoenbachler and Whittler 1996). Results from Study 2 show that the presence of a credible threat (parental notification for our sample of preteen children) acts as a significant deterrent to online information disclosure, and thus, a potentially effective self-regulatory opportunity for online advertisers. In that a substantial percentage of children-oriented Web sites were found to have only a warning safeguard, the finding that warning-only safeguards can increase rather than decrease children's information disclosure necessitates a change in practice, as well as more diligent self-regulation by the advertising industry.

The findings of the two studies also speak to the state of online adherence to regulatory recommendations or guidelines. Prior work has found that Web site operators have been reluctant in providing information regarding privacy practices to the full extent that the FTC has mandated. Specifically, Miyazaki and Fernandez (2000) found Web site disclosure regarding privacy practices (e.g., customer identification, unsolicited contact, and information sharing) and security practices (e.g., secure transactions, security guarantees, and alternatives to online payment processing) varied substantially across 17 shopping categories that were examined for 381 Web sites. Nearly a decade later, the current findings that popular children's Web sites still lack compliance with FTC guidelines is disappointing at best and suggests that self-regulation is not working.

Finally, the findings expand on prior research examining the role of parental mediation with respect to children's media consumption. While prior work examining television viewing and comprehension treated parental mediation as the primary predictor variable, the current work also demonstrates the usefulness of parental mediation as a moderator of the safeguard effect on children's information disclosure (see also Lwin, Stanaland, and Miyazaki 2008).

Implications for Advertisers, Policymakers, Parents, and Educators

As Study 1 reports, a significant portion of the children-oriented Web sites studied have only warning safeguards, and those requiring parental consent almost exclusively use e-mail as a consent method, which has been shown to be easily bypassed by preteens (FTC 2007b). Study 2 then finds that the presence of a warning-only online safeguard actually raises disclosure of sensitive information by preteens across all levels of parental mediation strategies. These results suggest concerns regarding the state of online advertising self-regulation toward children. If the advertising industry seeks to avoid more stringent future legislation, their self-regulatory bodies (e.g., CARU) must ensure that the measures used by Web sites are not only consistent with COPPA regulations and FTC expectations, but also actually work to enhance children's privacy. The current research finds that the methods used by many Web sites targeting children are inadequate in preventing information disclosure among preteens.

As previous research has suggested, not all online safeguards are equal in terms of effectiveness in reducing children's information disclosure. Indeed, our findings regarding the popularity of the warning-only safeguard, in conjunction with its reactive effects on information disclosure, can have implications for policymakers and educators as well. The findings that certain parental mediation techniques, in particular those with more involvement between the parent and the child, can counteract negative effects of a poorly designed online safeguard suggest that educating parents about the effectiveness of such mediation methods could be fruitful. Specifically, the implementation of active parental mediation strategies would be useful in reducing the amount of potential information disclosure for children. As for safeguards, the addition of a credible threat component appears to be beneficial to disclosure rates as well.

Thus far, CARU has been responsive to FTC recommendations that exceed COPPA requirements. For example, CARU guidelines suggest, "advertisers should ask screening questions in a neutral manner so as to discourage answers from children trying to avoid parental permission requirements" (CARU 2008a, p. 12). That recommendation is a verbatim duplicate of the FTC's suggested approach. However, the FTC also gives more specific examples as to how a site would successfully word such a screening question (Bergman 2006), whereas CARU does not. It is quite possible that while CARU is diligent in reproducing the suggestions of the FTC, it does not provide adequate context for advertisers to successfully implement those suggestions. Policymakers should consider providing more specific (and tested) examples of ways to implement FTC suggestions to the advertising industry in lieu of increasing COPPA restrictions in the short term. It is plausible that proper implementation of such principles will result in greater industry accountability and enhanced protection for the privacy of children.

Another option for CARU is to expand its Kid's Privacy Safe Harbor program that was designed to ensure adherence to FTC guidelines via compliance with CARU guidelines. Although compliance with CARU guidelines is touted as insulating participating Web sites from FTC enforcement, as of September 2008, only five firms were participating in the program (CARU 2008b). Given the ability of third-party seals of approval or trustmarks to enhance consumer perceptions regarding privacy and trust (Miyazaki and Krishnamurthy 2002; Rifon, LaRose, and Choi 2005), such a program would likely be well accepted by parents and consumer advocates.

Future Research

The future of online advertising regulation is likely to include a focus on the practice of behavioral advertising. The FTC defines behavioral advertising as "the tracking of a consumer's activities online—including the searches the consumer has conducted, the web pages visited, and the content viewed—in order to deliver advertising targeted to the individual consumer's interests" (FTC 2008). While the FTC recognizes benefits of behavioral advertising to consumers in the form of relevant content and personalized messages, concerns have arisen that the practice is invisible and unknown to consumers, and the agency has discussed possible self-regulatory approaches to address such concerns (FTC 2008). Undoubtedly, the discussion will also turn to implications of behavioral advertising targeting children. Although the Interactive Advertising Bureau, another self-regulatory body, is currently developing principles to guide advertisers in this arena (Business Wire 2007), CARU would also be well advised to participate in and embrace the development of such principles in order to decrease the possibility of COPPA expansion. Key to this process should be research to assess the effectiveness of various self-regulatory approaches to behavioral advertising for protecting the privacy of children. In fact, behavioral targeting firms in the United Kingdom have begun moving toward increased self-regulation to preempt perceptions of privacy abuse that might result in stricter government regulations (New Media Age 2007; Stanaland, Lwin, and Leong 2009).

Some industry observers predict that the future of online advertising to children will take the form of immersive games built around brands and characters (Shields 2005). The advertising industry must therefore be proactive in its approach to self-regulation of such games, including conducting research to assess their persuasive impact, children's perception of the games' persuasive intent, and resulting privacy issues. Perhaps also as a sign of things to come in the United States, consumer advocacy groups in Europe have stepped up criticism of "opaque commercial practices" of Web sites aimed toward children, prompting a review by self-regulatory bodies of ways to "future-proof" self-regulation of the digital medium (Marketing Week 2008).

The current research may have created an environment that, not unlike the real world for preteens, sends a mixed message regarding the appropriateness of a Web site for a particular child. For example, children are told that an online club is inappropriate for their age group, yet their same-age friends have joined the club and are enthusiastically recommending it. Future work could examine the social influence aspects of this situation to determine how such influence affects (in either a positive or negative manner) compliance with various types of information disclosure safeguards.

Several limitations of the current research provide additional opportunities for future research. For example, our examination of 10- to 11-year-olds could be expanded to include younger children who have been shown to be even more vulnerable to advertising persuasion (Roedder John 1999). Improvements to the methodology could include more details regarding the evaluated Web site so that there is less potential variation in

how participants experience the scenario. Also, future work should monitor actual information disclosure in lieu of reports of anticipated behavior. Finally, the exclusive use of children to assess parental mediation strategies, although justified by prior research, could be enhanced by including parental views of such mediation as well.

CONCLUSION

The regulatory stance thus far has been to focus considerably on the disclosure of practices rather than on the practices themselves. Although disclosure has been shown to have an impact on consumer perceptions of risk and attitudes toward commercial Web site organizations (Miyazaki and Fernandez 2001), consumers' realizations of actual data collection practices have been shown to interact with such disclosure (Miyazaki 2008). With respect to the current research, it is doubtful that regulatory bodies will consider disclosure and passive warnings to be sufficient action on the part of online advertisers, necessitating cooperation between practitioners and researchers to understand what practices can have noticeable effects on privacy protection.

Self-regulatory bodies such as CARU will need to demonstrate a sincere effort to minimize violations of children's privacy if they are to appease consumer advocacy groups, and ultimately, the FTC. Part of CARU's stated mission is to provide informational material for children, parents, and educators (CARU 2008a); in line with that goal, the organization should demonstrate a commitment to parent education on effective mediation strategies in light of the types of safeguards employed by the industry. While the FTC has shown patience in allowing the advertising industry to address many of its concerns via self-regulation, it is likely that as data collection practices become more sophisticated (and potentially less transparent to consumers), the FTC will recognize a need to augment and strengthen current standards unless the industry is proactive in addressing such concerns.

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