LIFESTYLES OF ONLINE GAMERS: A PSYCHOGRAPHIC APPROACH

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ABSTRACT: This study compares people who play games on the Internet, people who use the Internet but not for gaming, and people who do not use the Internet. In terms of demography, there is no gender difference among the three groups. On-line gamers are the youngest group and have above-average education and income, but non-gaming Internet users enjoy the highest socioeconomic status. In terms of motivation, on-line gamers are more impulsive and more open to the Internet than either other group. On-line gamers are also highest in novelty seeking, risk-taking, and word-of-mouth communication. In terms of attitude, both online gamers and non-gaming Internet users are more liberal toward socially sensitive issues than non-Internet users, and more tolerant of advertising that contains sex or violence. Practical implications and the need for additional research are discussed.

The explosive growth in Internet users during the last few years has resulted in a large base of online game players. A recent report by Jupiter Media Metrix states that 35.1 million people play online games and the number is projected to increase to 104.9 million by 2005 (Hopper 2002). Playing games has become many consumers' most fun entertainment activity, over watching TV, going to movies, or reading books (Interactive Digital Software Association 2000). In 2001, U.S. sales of game hardware and software rose 43% to hit $9.4 billion-which exceeded Hollywood's box-office receipts of $8.35 billion (Rodgers 2002).

Given the popularity of playing games online, it is natural for advertisers to want to tap into consumers' enthusiasm. As online game play has penetrated into Internet users' recreational lives, advertisers have been experimenting with a strategic idea of "advertising-as-entertainment" or "advergames" by integrating interactive games into their websites or placing their products in games (Emling 2001; Freeman 2001; Gunn 2001; Neff 2001; Nelson 2002; Youn and Larson 2002).

Online games as advertising and promotional tools offer several unique benefits. First, brand placements in online games help enhance brand awareness. When Toyota's Adrenaline racing game appeared on MSN Gaming Zone in 2000, a survey of MSN Gaming Zone users before the Adrenaline game went online found that Toyota's brand awareness ranked No. 6 among major car companies. Three months later after the game went online, a second survey of gamers found that Toyota's brand awareness had risen to No. 2 (Marriott 2001). Nelson (2002) found that gamers were readily able to recall about 25 to 30 percent of brands directly after game-play and about 10 to 15 percent after a five-month delay. Increased brand awareness may result from the interactive role of gamers in games, which can enhance gamers' involvement with the promoted brand or company (Coupey 2001).

Second, brand placements in online games promote brands in compelling ways. Obviously, one of the primary motivations of playing games is the fun of playing. Ward and Hill (1991) proposed that participating in especially enjoyable sweepstakes, contests, and similar promotional games may influence consumers' moods in a favorable way, and lead to positive attitudes toward the game, the promoted product, and the game sponsor. Given the importance of fun as a motive for playing online games, it makes sense that mood enhanced by playing online games would lead to favorable attitudes toward brands embedded within games.

The use of online games as advertising promotional communications tools also has the benefit of making it possible to implement viral marketing. Viral marketing refers to any strategy that motivates consumers to pass on promotional messages to others, creating the potential for exponential growth in the message's exposure and influence (Wilson 2000). Currently, many of the games permit players to spread the games via e-mail to friends and family members. For example, Flutter.com's online game called "What the Flutter Happened Next," benefited from the multiplier effect of viral marketing as people passed the game-and the promotional messages embedded within the game-along to friends and colleagues (Zwillenberg 2001).

However, despite advertisers' frequent uses of online games as new forms of advertising, little academic research to date has been conducted on who adult online gamers are and what their attitudes and motivations are. Recent industry studies have examined the basic demographics of gamers on the Web

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but do not provide us with information about motivational and attitudinal characteristics of online gamers (Game Research 2002). Understanding psychographic characteristics of online gamers is useful as it adds to our knowledge about the target audience advertisers can reach with online games. Such an understanding is also very useful as it assists online advertisers in identifying to whom and how to use online games as advertising and promotional tools.

Thus, the purpose of this study is to profile adult online gamers with regard to demographic, motivational, and attitudinal characteristics, using 2001 DDB Life Style Survey Data. Piirto (1991) observed that the Life Style Survey is probably the most highly detailed consumer psychographic database currently available. It consists of more than 1,000 questions on activities, interests, opinions, product use, and media behavior. For the purpose of enriching profiles of online gamers, this study divides non-gamers into non-gaming Internet users and non-Internet users, and examines how online gamers differ from non-gaming Internet users and non-Internet users, leading to a three-group comparison.

LITERATURE REVIEW AND HYPOTHESES DEVELOPMENT

Online gaming is a relatively recent occurrence. Indeed, the first graphical browser for the World Wide Web was only introduced in 1993. As a result, the number of published academic studies regarding online gaming is very small. Due to the lack of research on the profile of online gamers, we will review both Internet user studies and offline gamer studies in order to formulate hypotheses. It is assumed that those who like both to use the Internet and to play games are more likely to play games on the Internet.

Demographic Characteristics

Previous studies showed that Internet users differed from non-Internet users in age, education, and income (Coyle 1998; Hoffman and Novak 1996; Howard, Rainie, and Jones 2001; Korgaonkar and Wolin 1999). Overall, Internet users were likely to be younger, to have college or higher degrees, and to be better off financially than non-users. Earlier studies revealed that men dominated Internet usage (GVU 1998; Raman 1997), but a recent study found that the gender difference became almost invisible (Wells and Chen 2000).

Regarding offline gaming behaviors, Youn and Lee (2002) found that adult computer game players were relatively young and well-educated people with above-average income. As with the Internet users, gender gaps among adult computer gamers were not noticeable. These considerations suggest the following hypotheses:

> **H1a**: Online gamers, along with non-gaming Internet users, are likely to be younger, better educated, and earn more income than non-Internet users.
>
> **H1b**: There will be no gender difference between three groups -- online gamers, non-gaming Internet users, and non-Internet users.

Motivational Characteristics

Impulsiveness. Internet users visit the Web for specific reasons (Raman 1997; Stafford and Stafford 1998). However, most entertainment choices are likely to be made on the spur of the moment because motivations of hedonic consumption stem from intrinsic reward such as fun or pleasure, instead of extrinsic reward such as monetary or instrumental incentives (Deci 1975; Holbrook et al. 1984; Zillmann and Bryant 1994). It is also likely that Internet users click the options or links for games spontaneously from accidental exposure, curiosity, or fad about new things. Based on these considerations, we hypothesize that:

> **H2**: Online gamers will be more impulsive than non-gaming Internet users and non-Internet users.

Variety-Seeking and Risk-Taking. SRI International (1995) observed that nearly seven out of ten Internet users have the innovative, variety-seeking, and risk-taking personality type (Donthu and Garcia 1999). Fifty percent of the Internet users belong to the Actualizer segment (active and adventurous) and 18 percent belong to the Experiencer segment (innovative, stimulation seekers, and fashionable). These findings indicate that Internet users are more willing to try new things and are less concerned with the risk involved with their new consumption experiences. Because online gaming is a relatively new phenomenon in the gaming consumption, this novelty may attract innovative, variety-seeking and risk-taking consumers.

In a study of promotional games, McDanial (2001) found that a sensation-seeking personality trait was associated with consumers' preferences for participating in contests or sweepstakes. The findings imply that such promotional games may help to meet consumers' need for varied, novel, or stimulating experiences (Ward and Hill 1991). Studies in this field have also speculated that promotional game participants tend to have risk-taking personalities (Narayana and Raju 1985). Therefore, it is hypothesized:

H3: Online gamers and non-gaming Internet users are more likely to be variety seekers than non-Internet users.

H4: Online gamers and non-gaming Internet users are more likely to be risk takers than non-Internet users.

Fun-Seeking. Numerous studies have found that among the primary motives for using the Internet are entertainment values, along with information values (Eighmey 1997; Papacharissi and Rubin 2000). GVU's 10th WWW User Survey showed that 35 percent of Internet users surf the Internet to have fun and explore something (GVU 1998). Lee (2001a) also discovered that "entertainment-seeking" is a stronger predictor of the amount of Internet usage than is "information-seeking." Among various entertainment activities Internet users can choose on the Web, playing games may be the most fun activity among many Internet users. One industry study reported that the primary reason for people to play games is because they are fun (Interactive Digital Software Association 2000). Thus, we hypothesize that:

H5: Online gamers are most likely to be fun seekers, followed by non-gaming Internet users, and non-Internet users.

Word-of-Mouth. The Internet has been widely utilized as a venue for voicing opinions, complaints, and recommendations on brands, products, or companies (Chatterjee 2001). As discussed earlier, especially, online games have the benefit of making it possible to implement viral marketing (Zwillenberg 2001), by allowing online gamers to spread the games via e-mail to friends and family. A recent survey on online gaming habits reported that one of the motivations of playing online games is to talk about games to friends (Game Research 2002). Thus, it is hypothesized:

H6: Online gamers are most likely to engage in word-of-mouth communications, followed by non-gaming Internet users and non-Internet users.

Attitudinal Characteristics

Liberalism. Wells and Chen (1999, 2000) found that Internet users considered themselves more liberal and less conservative than non-users. This suggests that Internet users are more likely to have liberal attitudes toward socially controversial issues such as abortion, same sex marriages, or use of marijuana, to name a few. Regarding gaming activities, it has been found that adult video and computer gamers are more tolerant of socially sensitive issues than non-gamers (Youn and Lee 2002). Thus online gamers would be more liberal toward controversial social issues. Based on these observations, the following hypothesis is suggested:

H7: Online gamers and, to a lesser extent, non-gaming Internet users will show more liberal attitudes toward socially controversial issues than non-Internet users.

Attitude toward Advertising. In a similar vein, Internet users have been found to be more tolerant of controversial content in advertising (Wells and Chen 1999, 2000). Internet users were more liberal toward alcohol advertising, advertising directed to children, and sexual content in TV commercials. Donthu and Garcia (1999) discovered that Internet shoppers have a more positive attitude toward advertising. Further, because online gamers have been frequently exposed to the violent and sexual images presented in many games, they would be more likely to be insensitive to violent or sexual content in advertising. Thus, it is hypothesized that:

H8: Online gamers will hold most positive attitudes toward advertising, followed by non-gaming Internet users. Non-Internet users will show least positive attitudes toward advertising.

Openness to the Internet. In Ducoffe's (1996) study, Internet users stated that the Internet is a good source of up-to-date product information, is useful, and is entertaining. Lee (2001b) found that Internet shoppers use the Internet as the primary source of information about products and brands. Youn and Lee (2002) found that adult video and computer gamers have a positive attitude toward the Internet. These observations suggest the following hypothesis:

H9: Online gamers and non-gaming Internet users will be more open to the Internet than non-Internet users.

METHOD

Data. We used data from the 2001 DDB Needham Life Style Survey, an annual standing-panel quota sample similar to the U.S. adult population in age, gender, income, geography, and other demographics. Of 5,000 questionnaires, usable responses were received from 1,368 males (44.8%) and 1,688 females (55.2%). The Life Style Survey addresses a wide range of questions about attitudes, interests, opinions, activities, product use, and mass media use.

Measures. From the pool of items of the Life Style Survey, this study identified the items that measure (1) online game playing activity, (2) the use of the Internet, (3) demographic factors, and (4) constructs expected to relate to online gaming behavior in the literature review.

One item asking respondents to indicate how often they have engaged in online game during the past 12 months was selected as an indicator of online game play. Another item asking respondents whether or not they have used the Internet in the past 12 months was also identified. By combining these two items, this study divided respondents into three groups -- online gamers, non-gaming Internet users, and non-Internet users.

To explore demographic characteristics differentiating these three groups, this study considered gender, age, education, and income. Further, to determine differences and similarities between these three groups, we examined the items from the section of the Life Style Survey that assesses attitudes, interests, and opinions. Due to the dearth of published studies on the characteristics of adult gamers, we chose items reflecting constructs of interest to consumer researchers in the field of promotional games, motivations for Internet use, and electronic gaming behaviors (Youn and Lee 2002). Each item was measured by a six-point scale ranging from 1="definitely disagree" to 6="definitely agree."

For data reduction, an exploratory factor analysis was performed over selected items, with a Varimax rotation and eigenvalues over 1.0. Negatively loaded items were reverse-coded and reliability tests on each factor were conducted. To improve internal consistency, items that lowered alpha were discarded. After refinement of items, a factor analysis was conducted again over the remaining items. Finally, this analysis produced eight factors that generally conformed to the expected pattern of constructs, accounting for 51.7% of the total variance. Five of these factors described motivation-Variety-Seeking, Impulsiveness, Word-of-Mouth, Fun-Seeking, and Risk-Taking-and three described attitudes-Liberal Attitudes Toward Social Issues, Openness to the Internet, and Skeptical Attitudes Toward Advertising. Alphas ranged from .57 to .78, acceptable for exploratory studies (Nunnally 1978). The one factor that did not meet this standard was Risk-Taking, alpha .42. Appendix 1 presents these factors and illustrative items. For the several retained factors, we aggregated raw scores on each and preserved the summed scores for further analyses.

RESULTS

Overall, the 2001 Life Style Survey data showed that about two-thirds (66%) of total respondents had used the Internet in the past 12 months, while about 40 percent of total respondents had played a game on the Internet at least once in the past year (see Table 1). Looking at the size for each group, online gamers were 40 percent, non-gaming Internet users were 26 percent, and non-Internet users were 34 percent, respectively.

Demographics

The 2001 Life Style Survey data showed no gender difference between online gamers, non-gaming Internet users, and non-Internet users, replicating findings from previous Internet user studies (Wells and Chen 2000) and adult video/computer gamers studies (Youn and Lee 2002). In terms of age, online gamers were the youngest among three groups, implying that younger online users are more likely to use the Internet for fun (Howard, Rainie, and Jones 2001). Most online gamers (61%) were between 18-44 years old, while most non-gaming Internet users (57%) were between 35-54 years old. In contrast, the 55 and over age group accounted for 53% of non-Internet users.

Table 1. Demographic Characteristics of Three Groups

	Total	Online Gamers (40%)	Non-Game Internet Users (26%)	Non-Internet Users (34%)
(Base)	(2,801)	(1,110)	(738)	(953)
	%	%	%	%
Gender				
Male	45	46	47	43
Female	55	54	53	57
(χ^2=2.75, ns)				
Age				
18-24	5	9	3	3
25-34	17	24	18	9
35-44	25	28	31	18
45-54	21	20	26	18
55-64	13	11	13	16
65 +	19	9	10	37
(χ^2=430.24, p<.001)				
Education				
High school or lower	33	25	19	54
Attended college	36	42	34	30
Graduated college	17	20	22	8
Post-graduate school	15	14	26	7
(χ^2=401.95, p<.001)				
Income				
Under $29,999	28	20	13	49
$30,000-$49,999	24	24	20	26
$50,000-$69,999	20	22	24	13
$70,000-$99,999	17	21	22	8
$100,000 +	12	12	21	4
(χ^2=497.05, p<.001)				

With regard to education and income, the three groups yielded somewhat different patterns. Non-gaming Internet users were likely to show the highest level of education and income. As compared with non-gaming Internet users, the majority of online gamers were from households above-average in socioeconomic status, and non-Internet users were from households below-average in education and income. Therefore, the findings confirmed H1a and H1b.

Motivational Characteristics

Differences and similarities across three groups in terms of motivational characteristics were analyzed using one-way

ANOVA (see Table 2). For motivational constructs, the results supported most of the hypotheses (H2 through H6). As expected, online gamers were more impulsive than non-gaming Internet users and non-Internet users. Online gamers and non-gaming Internet users were more variety seeking and less risk averse than were non-Internet users. In addition, online gamers and non-gaming Internet users were more fun seeking and engaged in word-of-mouth communication than were non-Internet users, thereby partially supporting H5 and H6.

Table 2. Group Differences in Motivational Constructs

Constructs	Total	Online Gamers (a)	Non-Game Internet Users (b)	Non-Internet Users (c)	F-value
(No. of respondents)	(2,801)	(1,110)	(738)	(953)	
	Mean	Mean	Mean	Mean	
H2: Impulsiveness	8.13	8.56bc	7.88a	7.82a	14.1***
H3: Variety-seeking	18.98	19.47c	19.23c	18.20ab	24.0***
H4: Risk-taking	11.53	11.00c	11.22c	12.39ab	76.8***
H5: Fun-seeking	11.67	11.35c	11.49c	12.19ab	19.7***
H6: Word of Mouth	11.87	12.21c	11.88c	11.46ab	10.9***

- a, b, and c indicate which means are significantly different from each other and mean differences are tested via Post-Hoc tests (LSD).
- Risk-taking and Fun-seeking: lower scores indicate more risk-taking and more fun-seeking.

* p<.05 ** p<.01 *** p<.001

Comparing online gamers with non-gaming Internet users, online gamers showed higher levels of variety-seeking, risk-taking, fun-seeking, and word-of-mouth than non-game Internet users did, but these differences were not statistically significant.

Attitudinal Characteristics

Online gamers and non-gaming Internet users displayed more positive attitudes toward socially sensitive issues and controversial contents in advertising than non-Internet users did, which supported H7 and H8. In these attitudinal variables, online gamers and non-gaming Internet users showed similar levels of mean scores, although online gamers had little stronger attitudes than non-gaming Internet users. Online gamers also revealed greater openness to the Internet than non-gaming Internet users and non-Internet users did and, subsequently, non-gaming Internet users were more open to the Internet than non-Internet users. Thus, H9 was also supported.

Table 3. Group Differences in Attitudinal Constructs

Constructs	Total	Online Gamers (a)	Non-Game Internet Users (b)	Non-Internet Users (c)	F-value
(No. of respondents)	(2,801)	(1,110)	(738)	(953)	
	Mean	Mean	Mean	Mean	
H7: Liberalism	18.76	19.60c	19.39c	17.29ab	28.7***
H8: Attitudes toward advertising	14.81	14.20c	14.44c	15.81ab	38.2***
H9: Openness to the Internet	17.99	20.80bc	19.49ac	13.29ab	819.7***

- a, b, and c indicate which means are significantly different from each other and mean differences are tested via Post-Hoc tests (LSD).
- Attitudes toward advertising: lower scores indicate more openness to advertising content.

* p<.05 ** p<.01 *** p<.001

CONCLUSION AND DISCUSSION

This study set out to determine demographic and psychographic differences and similarities between online gamers and non-gamers (non-gaming Internet users and non-Internet users). Since little research addressed these issues to date, this study is significant in several ways. First of all, benefiting from a wide range of measures, various constructs potentially relevant to online gaming behavior were identified. These constructs will serve as an initial guideline to direct future research in this area. Secondly, this study differs from prior video/computer game research that studied children in that the respondents were adult consumers. Due to demographically balanced quota samples in the U.S. population, the findings are more representative of online gamers in general.

More importantly, the examination of demographics and psychographic constructs identified in this study increases our knowledge about adult online gamers. Regarding demographics, unlike male dominance in children's or adolescents' game consumption (Funk and Buchman 1996), gender differences among adult consumers in this study were vanishingly small. The recent report by the Pew Internet & American Life project (Howard, Rainie, and Jones 2001) stated that females play more games online than males do. The results suggest that female adult consumers are expected to be a growing market in the gaming industry and advertisers have an opportunity to reach female consumers using online games as the venue promoting their brands. More importantly, advertisers need to direct their efforts toward designing gender-specific advergames or other promotional games in order to better accommodate female consumers.

Online gamers and non-gaming Internet users are liable to be younger, more educated, and better off financially than non-Internet users, showing the gap between computer "haves" and "have nots." Furthermore, differences between online gamers and non-gaming Internet users should be discussed. Online

gamers tend to be even younger than non-game Internet users, while non-gaming Internet users show the utmost upper level in socioeconomic status. These findings support the speculative belief that the typical online gamers are not necessarily the typical Internet users who do not play games.

In the motivational profiles, online gamers appeared more impulsive than non-gamers-non-gaming Internet users and non-Internet users. It is expected that gamers' choices of playing games seem to be made spontaneously and situationally. Greater impulsiveness among gamers may lead to more susceptibility to online tactics and strategies that promote instant gratification for immediate pleasure over delayed gratification.

Although online gamers and non-gaming Internet users displayed several differences, they also had many commonalities. Online gamers, along with non-gaming Internet users, had a greater tendency to seek fun and variety than did non-Internet users. Marketing tactics promoting pleasure or playfulness via game-related promotions may help meet gamers' needs for varied, novel, or stimulating experiences on the Web. Since fun and variety are important motivations of online gamers, advertisers need to pay attention to both enhancing entertainment values and offering a variety of adventurous themes or plots. This study also revealed that online gamers were more engaged in word-of-mouth communication than were non-gamers. This finding emphasizes the potential that online gamers can spread games by word-of-mouth or email throughout their social network.

Finally, for attitudinal constructs, online gamers' liberal attitudes toward social issues and controversial advertising suggest that advertisers using online games as promotional tools need to be less concerned about the possibility of backlash reactions to games that contain controversial contents such as sex or violence. Also, greater acceptance of the Internet among gamers indicates that they are more liable to participate in other interactive online activities delivered through game sites or advertisers' own web sites.

In sum, the findings of this study provide managerial implications to advertisers experimenting with a newer idea of "advertising-as-entertainment." The demographic and psychographic characteristics of online gamers help advertisers determine whom to target, how to effectively use, and when to use online games as their promotional tools. Such knowledge can be a big asset in increasing the likelihood that game players can be exposed to the product or promotional messages embedded in the games, thus heightening brand or message awareness.

For example, when marketers launch a new product or new promotional campaign, the way of placing a product or message in online games may be an appropriate option because online gamers seek more variety and fun, take more risks, are open to newer things, and rely on the Internet as a primary source of information and entertainment. A greater fun experience from online games may carry over to the brand attitudes and messages in a favorable way. Profiles of online gamers improve insights into how online gamers respond to entertainment advertising and thus help advertisers design more effective ways to utilize online games. Based on the findings, play value, challenge, instant gratification, and a variety options might be key features that advertisers should offer to online gamers when they use online games as promotional tools. In order for advertisers to use games as an incentive to stay longer or return to their site, they need to continuously update the nature of the game such as options or difficulty level.

Future Research and Limitations

For the purpose of enriching individual differences between online gamers and non-gamers, future research should be more focused on testing theory-driven constructs (e.g., arousal-seeking tendency). More work should be also concentrated on measuring the effectiveness of online games as promotional tools (e.g., brand awareness, attitude toward the brand, or purchase intention). An inquiry of how consumers respond to advertising-as-entertainment would be worthy of further research.

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APPENDIX 1

Factors	% of variance	Alpha	Factor loading
Factor 1 Liberalism	14.8	.78	
I am in favor of legalizing same sex marriages.			.74
I am in favor of legalized abortion.			.73
Public high schools should be allowed to distribute condoms.			.70
The use of marijuana should be legalized.			.65
Couples should live together before getting married.			.63
I think the women's liberation movement is a good thing.			.56
Factor 2 Openness to the Internet	8.3	.75	
Surfing the Internet is more interesting than watching TV.			.76
The Internet is the best way to keep in contact with others.			.73
The Internet is the best place to get information about products.			.71
I have no clue what the Internet is & what it can do for me (-).			.70
I consider myself computer-savvy.			.54
Factor 3 Variety-Seeking	6.3	.61	
I like to visit places that are totally different from my home.			.70
I like to buy new and different things.			.61
I am interested in the cultures of other countries.			.56
I am usually among the first to try new products.			.53
I am the kind of person who would try anything once.			.40
Factor 4 Impulsiveness	5.8	.67	
I frequently buy things when I can't afford them.			.79
I pretty much spend for today and let tomorrow bring what it will.			.73
I am an impulse buyer.			.70
Factor 5 Attitudes Toward Advertising	5.3	.62	
TV commercials place too much emphasis on sex.			.65
Advertising directed to children should be taken off television.			.65
I avoid buying products advertised on shows with too much sex.			.60
Advertising for beer and wine should be taken off TV.			.58
Factor 6 Word of Mouth	4.1	.57	
My friends & neighbors often come to me for advice about products.			.76
I am influential in my neighborhood.			.72
I seek out the advice of my friends regarding brands and products.			.49
I spend a lot of time visiting friends.			.49
Factor 7 Fun-Seeking	3.6	.60	
I would rather spend a quiet evening at home than go out to a party.			.80
I am a homebody.			.71
I enjoy parties, games, shows -- anything for fun (-).			.55
Factor 8 Risk-Taking	3.6	.42	
On a job, security is more important than money.			.65
When making an investment, maximum safety is more important than high interest rates.			.58
I don't like to take chances.			.54
Cumulative % of Variance	51.7		

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