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HEADLINE: Boom time for electronic commerce - rhetoric or reality?

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BODY:

Some pretty amazing statistics have been put forward on the growth of the Internet and the World Wide Web and their potential for trade. It is nonsense to believe the forecasts that a billion people will be using the Internet by the year 2000, or to give credence to wild predictions that \$ 200 billion of world trade will be transacted on the Net in 2000. There is no easy way to measure any statistic regarding the growth of the Net, but many firms are becoming concerned about its potential impact on them. An understanding of the factors influencing electronic commerce, or Internet trade, should be central to the development of any strategy to develop applications on the Net or better inform those considering its potential impact on existing businesses.

Many firms developing Internet technology (Microsoft, Netscape Communications), those providing access to the Internet (CompuServe, America Online), and others that sell the technology are thriving. But many businesses using the Internet to promote trade are struggling. The number of losers exceeds the number of moneymakers by at least two or three to one. A little like China, the Internet is a potentially huge market; everyone believes there is money to be made, but so far few have figured out how to do it.

It is not the volume of trade, however, but the nature of trade facilitated by this relatively new medium that should warrant most attention. Most current methods of promoting trade or advertising, such as mailshots, television, and magazine ads, are push media supplying information directly to a potential customer. The Internet is a pull medium in which users generally extract only the information they require. It has become a distribution channel, distributing information and goods and providing unprecedented access for individuals to make better choices when purchasing goods and services.

The Net is said to represent a level playing field posing minimal entry barriers for businesses seeking new markets and distribution channels. But it is unclear how electronic commerce is cannibalizing existing marketing outlets, or how much trade is the result of expansion in new and existing markets, such as online games or gambling. Even in new markets there is likely to be some capture of resources from other activities (other things being equal) as disposable income is spent on new activities. In existing markets, the Net has the

capability to remove the need for an intermediary in most transactions. As buyers purchase directly from producers, the loss of wholesalers, retailers, and other intermediaries could lower transaction costs for the purchaser and enable producers to achieve higher profits by retaining some of the markup previously retained by the intermediaries.

Harrington (1995) defines electronic commerce as the exchange of information, goods, services, and payments by electronic means. The Internet provides a medium for communication. In some cases it can facilitate all the elements of Harrington's definition, but it is equally possible for transactions to be completed using a whole range of communication media, including the Net. A customer could stumble across a page on the World Wide Web while browsing, obtain further information by e-mail, make a telephone call to get detailed technical information by fax, and visit the distribution depot or retailer to collect and pay for the goods. This diversity of uses for the Net in a purchasing decision is a feature rarely addressed in many estimates and forecasts. Thus, the Internet can be but one among many communication channels used in the complex process leading to a purchase decision.

Many firms use their Web sites to supply information on products, prices, and after-sales service, thereby assisting Net users in making a purchase decision. For instance, some PC game companies allow a demo version of software to be downloaded in the hope of encouraging users to purchase the game on CD. Other firms provide details of "local" outlets, anywhere in the world, at which purchasers can obtain their products.

The role of the Net can therefore vary. For this reason and others, predictions about trade using the Net must be treated with extreme caution. It could play a role in "ordinary" purchases, such as the example above, or it could become central to a firm's operations at all stages of the marketing process. By reviewing several forecasts of electronic commerce and investigating the processes involved in making that final online purchase, we hope to aid in understanding the potential for electronic commerce, how key technologies and systems will evolve, and the roles businesses may adopt. As stated before, such an understanding will be critical to the strategies of companies in a wide range of businesses in the future.

DEMAND AND THE INTERNET

The potential for electronic commerce, as with all trade, is affected by demand from users and supply by businesses or other organizations. Demand is affected by three key factors: (1) the number of people using the Internet now and in the future, (2) the characteristics of those users, both individuals and businesses, and (3) their purchasing behavior on the Net - probably the most important of the three. Together, these factors allow an examination of current and future demand for goods and services on the Internet.

Because of the speed of change, our review of demand and supply uses reports from newspapers, trade journals, and World Wide Web pages as well as academic journals. Web pages and commercial sources are published more frequently than academic journals and have shorter lead times. Moreover, they often contain the results of trade and consumer surveys that would otherwise be expensive to purchase. We have also included a guide to leading sources of regularly revised information available about electronic commerce on the World Wide Web (see Figure 1). This guide should allow readers to obtain updates of figures, gain

access to information, and review articles about Internet use and electronic commerce. (All monetary figures are in U.S. dollars.)

Demand: Internet Connectivity

One of the fundamental factors affecting the potential for electronic commerce is the number of people connected to the Internet. This number is extremely difficult to estimate, however, because of the dispersed nature of users. Studies also provide data in different ways. Some consider the number of hosts, such as Network Wizards' estimate of 29.6 million host computer systems connected to the Net as of January 1998. Some surveys provide information about the number of users, whereas others record the number of households connected. But few distinguish between household (or social) users and commercial users who are accessing the Net from businesses or other organizations. Hence, we advise caution when comparing the results of surveys wherever appropriate full details concerning user characteristics and dates of surveys appear here.

Estimates of Internet connectivity in 1996 range between 24 million and 100 million. Table 1 shows a review of 19 studies published between January 1996 and May 1997. The average number of Net users in 1996 estimated by the 11 worldwide studies is 45 million, but this figure is greatly affected by two high values. It must be remembered that these figures are little more than guesses.

In one Wired study that collected data from online providers about their subscription levels ("Growth Slowing..." 1997), 51 online services reported 27.6 million subscribers at the end of March 1997. But subscribers may provide access to more than one individual, and millions more business users are located behind firewalls.

Any review of Internet connectivity should not be constrained by examining only household data. Businesses are major users of computers. A survey by O'Reilly and Associates (Peck 1996) found that in the U.S. and Canada, 51 percent of the largest firms surveyed (those with more than 1,000 employees) have corporate access to the Net, compared to 27 percent of mid-sized firms (100 to 999 employees) and fewer than 10 percent of small firms. In the UK, a more recent survey by Durlacher Multimedia in 1997 found that 85 percent of large UK corporations have an Internet connection. In most firms, however, access is limited to a small percentage of staff.

In a spring 1997 survey by the Graphics, Visualization, and Usability Center (GVU) at Georgia Institute of Technology, 60 percent of users reportedly accessed the Web mainly from home - a number that was believed to be stabilizing. An Inteco household survey the previous September also found a leveling off in home access. Future growth in the U.S. was expected to come primarily from a continuing trend of increased access from work or school.

Forecasts of the growth in connectivity show an equally diverse array of values, ranging from 90 million to a billion users in 2000. Estimates at the upper level must be regarded skeptically. They would require a phenomenal increase in the adoption of "old" technology, let alone the purchase of computers and modems. Even in the developed world, only about half the population - roughly 400 million people - have a telephone at home. In the developing world, the number is only about 4 percent. If one makes the bullish prediction that all the world's households with telephones (about 600 million) will be using the Net at the same 30 percent level predicted for the U.S. in

2000, the maximum level of worldwide household connectivity would be 180 million.

Predictions of future growth in the United States are obviously no more reliable than others. Forecasts generally predict between 25 and 35 million U.S. users in 2000, with a growth rate of about 50 percent between 1996 and 2000. These forecasts appear more modest than those put forward by prophets making guesses at the world scale, which envisage growth of at least 300 percent during the same time.

Some commentators have suggested there may be a ceiling of 25 to 30 percent of American households (24 to 28 million) connecting to the Internet. According to Coy (1996a), a survey by Mercer Management Consulting found that two-thirds of the market for electronic commerce in the United States was made up of two demographic groups comprising only 17 percent of the population. Surveyors found limited potential for electronic commerce beyond these two relatively affluent groups - the "wired elite" and "upgrade families."

Table 2

Demand for and Supply of Information on the Internet

Country/Region	DEMAND	SUPPLY
	Internet Host	Online Newspaper
	Location	Provision
United States	64%	55%
Other English-speaking countries	13%	9%(1)
Europe	18%(2)	22%
Asia(3)	4%	5%
Africa/Middle East	1%	1%
Central and South America	1%	7%

1 Canada, Australia, and New Zealand

2 Excluding UK and Ireland

3 Excluding Australia and New Zealand

Note: Figures are rounded, so columns do not total 100.

Source: Mandel (1996) and Outing (1996)

Predictions of a more moderate growth pattern in the United States suggest a slowdown in the number of new users. Recent evidence indicates this trend may already be happening. Subscriptions to online service providers America Online (AOL) and CompuServe increased by just 6.6 percent in the first quarter of 1997, compared with quarterly growth of 15.3 percent a year earlier. Supporting evidence for slower growth is provided by GVV's most recent semiannual survey, which found the number of new users in its survey had fallen from 60 percent in 1995 to 36 percent in 1996 and 1997. A steady resurgence in Net users will probably occur in the future as students and schoolchildren using it for educational purposes maintain access after graduation by connecting from home or the workplace.

The United States is generally regarded as the earliest adopter of Internet technology. Mandel (1996) states that nearly two-thirds of Net host computers are located here. Table 2 provides a good indication of the geographical distribution in 1996 of the potential "demand" for information (or goods and services) from the Net, using host computers as a surrogate for the geographical distribution of demand. Outing's (1996) survey of online newspaper provision serves as a surrogate for the geographical distribution of information provision, enabling a tentative examination of the "supply" of information.

Table 2 also shows the predominance of English-speaking countries in connecting to the Net. Asia's surprisingly poor position, considering it has 59 percent of the world's population, is explained by three factors: (1) the relatively low level of home PC ownership in Japan less than 15 percent; (2) the Chinese government's concern about the Internet as a source of politically sensitive information; and (3) the relative poverty of many Asian countries. Asia, like many other non-English speaking areas, is also hampered by the fact that nearly all Web pages are written in English. Programs may be developed in the future that will automatically translate e-mail and Web pages, but in the meantime, interest in the Web for non-English speaking users is limited.

Internet User Characteristics

Net users have been characterized as predominantly young, well-educated, professional, and affluent males. However, recent surveys suggest that people using the Net are becoming more representative of the population as a whole. The United States again appears to be leading this trend. Online surveys reveal that the proportion of female users in the U.S. has risen from 5 percent in 1994 to approximately one-third in 1996. Other surveys found the proportion had risen to 40 percent or more. In Britain, where the market is starting to mature, the percentage of female users reached 35 percent in 1997, according to NOP Research (1997). Elsewhere, male predominance is still the rule: 85 percent in Europe and Australia, and 90 percent in Japan.

Net users are mostly young, but the average age is also increasing. In spring 1997, GVV found an average age of 35.2 compared with 33 a year earlier. European users are generally younger than U.S. respondents (30.2 and 36.5 years old, respectively). Users also appear to be more affluent than the general population. Whereas average American household income in 1995 was \$ 42,400, Net-using households had an average income of \$ 66,700. Diamond (1997)

suggests that average had fallen to \$ 55,000 in 1997. A higher proportion of those with managerial and professional jobs are Net users. Compared to the U.S. as a whole, which had 34 percent in this category in 1994, 59 percent of users in 1994 held such jobs. This had decreased to 50 percent in 1995 and 39 percent in 1997, reports Chandrasekaran (1997).

The relative stability in user characteristics in the United States - who are slightly younger and more affluent than the general population, with a greater predominance of males - should provide greater confidence and stability for Internet traders. This situation is likely to be replicated in other countries as their Net population expands and matures.

INTERNET PURCHASING BEHAVIOR: DO PEOPLE USE ELECTRONIC COMMERCE?

The last, but probably most important, of the three factors influencing the demand for electronic trade is how users and purchasers behave on the Internet. Most users browse rather than purchase. The most common Web activities among general users, according to one Gvu survey, are browsing (61 percent), work (54 percent), education (52 percent), and entertainment (46 percent). Among those using it for business purposes, reports Inc. ("What Are You Doing on the Web?" 1996), the primary activities tend to be gathering information (77 percent), collaborating with others (54 percent) providing vendor support and communications (50 percent), and researching competitors (46 percent).

Purchasing goods and services through the Net ranked last in both surveys. However, as a communication tool, the Net could be influential in the purchasing decision for an increasing number of users who complete their purchases using

other methods of communication as well.

The semiannual GUV surveys had been showing a steady increase in consumer purchasing, but as of fall 1997 a slight decrease was recorded for the first time. This drop to 18.7 percent of respondents from 18.8 percent six months earlier was still higher than the 14.9 percent recorded a year earlier by Toon (1996). In contrast to Chandrasekaran's report that 15 percent of responding Net users had purchased something online, a similar household survey of 2,003 adult respondents by AT&T and Odyssey and reported by Computerworld in 1997 found a much lower level of purchasing behavior - only 7 percent had bought anything online and only 20 percent had sought information about a product or service.

How much did users spend on purchases on the Web in 1996? Between spring and fall, reports GUV, 36 percent spent less than \$ 10, whereas 20 percent spent between \$ 10 and \$ 99 and 29.5 percent spent over \$ 100 through the Web. The key advantages of purchasing via the Web are ease of contact, lower prices, easy ordering, and quality of information. Security of financial transactions has been a major concern, but this problem seems to be diminishing. Other concerns are ease of obtaining a refund, reliability, and the ease of canceling orders. Web users, it seems, still prefer traditional vendors over Web vendors.

There is evidence that growth in spending over the Web will not increase at a concomitant rate with the growth in new users. Latecomers to the Web are not as likely to shop at the same rate as early adopters. CompuServe's membership grew by 60 percent in 1996, but its online sales stayed relatively static. The decline in growth in purchasing behavior indicates that relative stability may already have been reached.

What Do People Buy?

The characterization of early Web users as young professional men who are educated and technically knowledgeable is also the demographic profile of typical purchasers of CDs, adult entertainment, computer software, and other "boys' toys." Some goods are being bought much more frequently than others on the Web. Computer hardware and software, books, music, adult entertainment, and travel are consistently reported as the main items purchased. In 1994, Shi and Salesky suggested some key characteristics for merchandise purchased online:

- * items for which product information is an important part of the purchase decision, but for which pre-purchase trial is not critical (such as computers, but not cars);

- * items for which audio or video demonstrations are useful (CDs, videos);

- * items that can be delivered electronically (computer software);

- * items that are unique (collectibles, specialty foods); and

- * items purchased regularly where convenience is valued (packaged goods).

The passage of time has proven three of these predictions accurate, but the last two have generally not been as useful, as shown in Table 3.

By concentrating on the characteristics of merchandise, Shi and Salesky's approach ignored two other important factors: services and the purchase process. More recent studies have highlighted the growth of services offered on the Web, particularly financial and insurance services. And in considering the process of undertaking electronic commerce, two additional characteristics make online purchasing attractive:

- * ease and privacy of transaction (adult entertainment, gambling, sending flowers); and

- * availability of information about price for products that are standard comparison items, particularly entertainment goods, such as CDs and videos.

Although none of the surveys in Table 3 recorded the importance of adult entertainment or gambling, anecdotal evidence about the most frequently read pages on the Web suggests they are significant. The sexual nature of the most oft-used words in searches at such online navigational guides as Yahoo suggest that "privacy" of transactions is important. Given the size of the adult entertainment market, this could be a prime area for electronic commerce. According to Sharkey (1997), U.S. News and World Report suggested that the American market was worth more than \$ 8 billion in 1996.

Price has always been an important feature in making a purchase decision. It is no surprise, then, that some of the most popular electronic commerce sites are those offering far lower prices than High Street competitors for standard comparison items, such as CDs, videos, and books. The introduction of "intelligent agents," which engage in comparison shopping between Internet stores to find the best price for a particular [TABULAR DATA FOR TABLE 3 OMITTED] product, will exacerbate the importance of price and ease the purchaser's task of finding the cheapest product for some standard comparison

goods. Already there are sophisticated Web sites that enable potential purchasers to buy any book or CD at the cheapest available price from a selection of worldwide electronic commerce suppliers.

A fundamental assumption of retailers in the real world and on the Internet is that shops that provide better services will retain customers and, hence, should be able to charge higher prices. Intelligent agents, however, have the potential to overturn this long-held belief by providing instant access to information on the cheapest provider anywhere in the world. Of course, this will only work for standard goods or services (CDs, books, airline flights, life insurance) that are easily defined and compared.

The most popular items purchased by electronic commerce are computer hardware and software, books and magazines, travel, and CDs. Not only are they the most competitive items on the Net, they also constitute the area in which competition with conventional retailers is likely to be most intense. Banking, insurance, and other services and products that make more use of the ease and privacy offered by electronic commerce will likely grow in significance.

Two seemingly conflicting trends for intermediaries will also arise. First, the Net has the capability of eliminating the need for wholesalers, retailers, and other intermediaries in many transactions as buyers purchase directly from producers. Electronic commerce lowers transaction costs for the purchaser and enables producers to achieve higher profits by retaining some of the markup previously retained by intermediaries. Second, the role of one or two leading intermediaries could be enhanced if they offer an intelligent agent service that aggregates price and other product information on standard comparison goods, thereby enabling purchasers to quickly find the cheapest supplier of what they seek.

For products and services that can be compared this way, electronic commerce may erode the nature of the trading process by usurping the role of retailers and agents or brokers (particularly in financial services). It could also destroy the importance of the traditional marketing concept of building customer relationships by transforming the way people shop.

How Much Do People Buy?

Predictions of the level of electronic commerce undertaken via the Internet are even more difficult than those for Net connectivity. Sales information is sensitive, particularly for businesses that trade only via the Net. Any estimates for the current volume of sales is therefore highly speculative. Table 4 reviews 12 studies published between January 1996 and March 1997. The average level of trade in these studies is \$ 1.08 billion; if the large Waltner estimate is omitted (which also predicts sales of \$ 13.4 billion for 1997), the average value is approximately \$ 840 million.

Only three of the studies in Table 4 make predictions for 2000 on the basis of figures revealed for 1996. They predict growth of 550, 1,270 and 1,320 percent, respectively, between 1996 and 2000. If the level of commerce in the widely quoted Forrester estimate of \$ 6.6 billion in 2000 were achieved, it would equate to Net purchases of approximately \$ 37 per year by every one of the 180 million households worldwide that might be connected to the World Wide Web in 2000. Because newcomers are unlikely to purchase at the same rate as established users, this high level seems unrealistic. In comparison, the two

largest "big book" general merchandise marketers in the United States had total catalog sales of \$ 5.5 billion in 1995: JCPenney at \$ 3.7 billion and Spiegel at \$ 1.75 billion.

SUPPLY: ELECTRONIC COMMERCE AND INFORMATION, GOODS, AND SERVICES

Established businesses are beginning to capitalize on the perceived economic benefits and marketing reach of electronic commerce. Many are supplying information, goods, and services using the Internet. Some banks are starting to move their customer services to electronic channels. Retailers are moving online, and new intermediaries are emerging.

The simplest measure of the "supply" of information for electronic commerce is to count the number of sites or pages on the World Wide Web. Between January and December 1994, the number of Web sites rose from 623 to 10,022, whereas the number of commercial pages was estimated to be only 370. By December 1996, the total number of sites had increased to 603,000, the number of commercial sites was estimated to be 45,000, and the number of commercial pages was believed to have grown to 250,000. However, estimates suggest that 25 to 30 percent of Web pages die each year. The electronic commerce market, like the real world, is comprised of a steady influx of new businesses and the closing of dead ones.

[TABULAR DATA FOR TABLE 4 OMITTED]

The Internet provides an unprecedented supply of information for individuals to make better choices about products and services. But to obtain that information, potential purchasers have to find the sources. Indexes have become a vital tool in enabling users to find what they want to know. Knowledge organization is important, not just because of how much information is now available, but because of the growing number of users seeking it. The total number of pages on the Web in 1996 was estimated to be 11 million, with perhaps 300,000 extra pages added every seven days. That number is now thought to be growing faster than the number of users.

Numerous examples are quoted in the popular press and trade journals of successful Internet businesses, such as Amazon books, CDNow, Hot Hot Hot, and Dell Computer. Despite these and other well-known successes, surveys still suggest that fewer than one in two or three sites are profitable. For something that many heralded as the next "gold rush," results so far are disappointing. The list of well-known but less-publicized failures includes MCI's Internet Shopping Mall, Time Warner's Pathfinder and Dreamshop, and Webmart Shopping 2000. Even for some of the successes, revenues appear to be low. Some successful catalog sales companies, which many thought would be at the forefront of developing the new technology, report that online sales amount to only a small portion of total revenue.

Some commentators have suggested that technology accounts for the relatively slow level of growth. As soon as it is possible to sit down in front of a television set and shop with fast image presentation and a remote control, they say, everything will change. However, three months after a well-publicized launch just before Christmas 1996, fewer than 70,000 Web TV devices had been sold in the United States. Xu (1997) estimates that the number of Web-enabled television sets will still be under a million in 1999. Web TV will differ from TV home shopping in a number of ways; nevertheless, the slow growth of home shopping and the move by ValueVision International, a leading home shopping

network, into the mail order industry suggest that current television sales levels are limited.

Many of those developing Internet technology or providing access to it have a strong vested interest in the real or perceived expansion of electronic commerce. Consultants, journalists, and perhaps even academics have equally pressing reasons to ensure the popularity of this relatively new method of communication. The number of people connected to the Net has certainly skyrocketed in recent years. But in the United States, the evidence of a slowdown in the number of new users and a relative decline in the number of purchases they make likely heralds the same thing worldwide in the very near future.

Outrageous claims forecasting the impact of the Net, the WWW, and electronic commerce on our lives over the next five years are, as we have shown, unrealistic and misleading. Perhaps the Net will become the next management fad. Most fads put forward by gurus in recent years, such as TQM and reengineering, had an internal focus. And companies really only have two main choices when improving their business-reducing costs or increasing throughput. So it was only a matter of time before they embraced a fad with an external focus, such as the Net.

Undoubtedly the Internet has had a significant commercial impact since 1993. And in some industries particularly suited to electronic commerce - computer software and hardware, CDs, books, financial services - this influence will grow. But businesses must be very careful before staking their all on the stratospheric claims put forward for its role in the growth of electronic commerce over the next few years.

Figure 1

Guide to Leading Sources of Regularly Revised Information on Electronic Commerce and the WWW

Listed below is a selective review of sites on the World Wide Web that provide regularly updated reviews of Internet surveys, statistics, and reports. Dynamic links to these pages can be found on the authors' home pages:

<http://www.dmu.ac.uk/ln/ecommerce>
<http://business.city.unisa.edu.au/wwwtrade/internetstatistics.html>

INTERNET USER SURVEYS

GVU Georgia Tech User surveys: Online surveys completed

by approximately 20,000 respondents twice yearly (since January 1994) investigating Internet demographics and use.

* <http://www.cc.gatech.edu/usersurveys>

Hobbes Internet Timeline: History of the Internet from 1957 and updated statistics on hosts, domains, and WWW sites.

* <http://info.isoc.org/zakon/internet/History/HIT.html>

Network Wizards: Host and domain surveys completed twice yearly (since January 1995) providing details of user type and geographical distribution.

* <http://www.nw.com/zone/www/top.html>

General Magic: Graphical presentation of past and future growth in Internet host and domain characteristics.

* <http://www.genmagic.com/internet/trends>

Netcraft Web server surveys: Monthly survey of sites and Web server Software usage.

* <http://www.netcraft.com/survey>

INTERNET SURVEY REVIEWS

NUA Ltd. Internet surveys database: Reviews of published Internet surveys and use from sources throughout the world; updated daily.

* <http://www.nua.ie/surveys/index.cgi>

Computerworld Internet reviews: A selective presentation of key statistics from recent surveys of Web sites on growth, business activity, and purchasing behavior; not user-friendly.

* <http://www.computerworld.com/emmerce/depts/stats>

LINKS TO INTERNET SURVEYS AND STATISTICS

InfoQuest/Internet Surveys and Statistics

* <http://www.teleport.com/tbchad/stats1.html>

Yahoo Internet Statistics and Demographics

*

<http://www.yahoo.com/computersandinternet/internet/statisticsanddemographics>
Library of Congress Internet Resource Page

* <http://lcweb.loc.gov/global/internet/inet-stats.html>

Brand X Internet Services

* <http://www.interlog.com/bxi/stze.htm>

MISCELLANEOUS

Matthew Gray Terminology: Clear definitions and terminology for commonly used terms such as host, domain, site, etc. Also includes Internet growth data.

* <http://www.mit.edu/people/mkgray/net>

Anamorph Irresponsible Internet Statistics Generator: Questions Internet statistics wittily, with some links to other sites.

* <http://www.anamorph.com/docs/stats/stats.html>

* Editor's note: Check out the July-August 1998 issue of BH, in which Varun Grover, Liz Hall, and Scott Rosenberg discuss this topic in their article, "The Web of Privacy: Business in the Information Age."

* Editor's note: Ramon Peypoch delves further into the topic of electronic communities in the following article (p. 17).

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GRAPHIC: Illustration; Table

LANGUAGE: ENGLISH

IAC-CREATE-DATE: October 7, 1998

LOAD-DATE: October 08, 1998



Seth S. Grossman
07/08/99 06:10:28 PM

Record Type: Record

To: Adam H. Magnus/WHO/EOP@EOP

cc:

Subject:

Online Gap Grows Between Whites, Blacks

By Ted Bridis
Associated Press Writer
Thursday, July 8, 1999; 11:33 a.m. EDT

WASHINGTON — The disparity between whites and black and Hispanic Americans who own computers and use the Internet is growing significantly toward a "racial ravine," in many cases even after accounting for differences in income, the government reported today.

The Commerce Department's "Falling Through the Net" survey shows dramatic gains in the number of Americans embracing technology. But it also cites money, education and whether a person lives in an urban area as key factors affecting how closely they use those high-tech tools.

"The Net is increasingly becoming part of our national heritage — for some people," said Larry Irving, a Commerce undersecretary and President Clinton's top telecommunications adviser. "The worst persons (for likely access to technology) would be low-income blacks or Hispanics in a rural community."

Most troubling for government experts were indications these disparities can't be blamed solely on differences in income. Among families earning \$15,000 to \$35,000, for example, more than 33 percent of whites owned computers, but only 19 percent of blacks did — and that gap has widened nearly 62 percent since 1994 despite plunging computer prices.

"Even when holding income constant, there is still a yawning divide among different races and origins," the report said, warning of a society in which "the 'haves' have only become more information-rich ... while the 'have-nots' are lagging even further behind."

But the government survey also found, predictably, that as income rises, the likelihood of PC ownership and Internet use also rises. Families with incomes above \$75,000 were more than five times as likely to own a computer at home and 10 times more likely to have Internet access than families who earned less than \$10,000.

And the gaps in computer ownership and Internet use narrowed between

white families and blacks and Hispanics earning more than \$50,000.

"There is a way to buy your way out," said Irving, adding that falling computer prices will continue to help. "Above \$75,000, there is almost no gap between blacks and whites."

Other key findings:

—About 47 percent of all whites own computers, but fewer than half as many blacks do. About 25.5 percent of Hispanics own computers, but fully 55 percent of Asians do. Asian families also are most likely to have Internet access, with 36 percent online.

—A child in a low-income white family is three times more likely to have Internet access as a child in a comparable black family and four times more likely than a Hispanic child.

—People with college degrees are more than eight times more likely to own a computer and 16 times more likely to have Internet access than people with elementary school educations.

The report, the third such survey by the government since 1995, did not suggest specific ways to encourage Internet use or computer ownership except to recommend continuing to provide online access at community centers, such as schools, libraries and other facilities.

"It allows minorities to come into an area that's populated by themselves and learn how to use the technology," agreed Willie Atterberry, chairman of the AfroNet Web site and magazine in Los Angeles. "You don't have to worry about going to Silicon Valley. It comes to you."

Ameritech Corp. and the National Urban League announced today they will spend \$350,000 to build five new Internet community centers in Aurora, Ill., Cleveland, Detroit, Indianapolis and Milwaukee. And 3Com Corp. said it will spend \$1 million in donated equipment and training to 10 cities to help teach students to be computer network engineers.

"In the information age, there cannot be two separate societies," said Milton Little of the Urban League.

Some industry experts suggested that minorities might also be discouraged by computers and the Internet as difficult to learn, or at least consider the Web a medium whose benefits haven't been sufficiently explained.

"I really don't think the advantage of being online has been instilled in them," said Trevor Farrington, a director at the Massachusetts-based African American Internetwork, a Web site aimed at blacks. "Online banking, investing — that's hotter than pornographic sites now but it's not being driven home among African Americans.

"I really don't think they understand it," Farrington said. "They think it's too technical, (but) it's as easy to use as TV and it's better. Once they understand that, it should grow."

LEVEL 1 - 1 OF 78 STORIES

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III Insurance Issues Update

May, 1999

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HEADLINE: AUTO SAFETY AND CRASHWORTHINESS

BYLINE: Ruth Gastel, Editor

BODY:

Key Facts

* Motor vehicle crashes are the leading cause of death for young people from age 6 to 27.

* One person dies in a traffic crash every 13 minutes. About 115 people die in crashes every day.

Current Developments

Fatalities: Motor vehicle crash deaths fell slightly in 1997. According to the Fatal Analysis Reporting System (FARS), 41,967 people died in motor vehicle crashes in 1997, down 0.2 percent from 42,065 in 1996. The fatality rate - measured as deaths per 100 million vehicle miles traveled - dropped to a new record low of 1.6. This rate had stalled at 1.7 from 1992 to 1996, after falling steadily from 1986 to 1991.

Speed Limits: States were allowed to determine their own speed limits as set out in the 1995 national highway bill (See Background.) The Insurance Institute for Highway Safety (IIHS) reported in 1999 that the higher speed limits enacted in 24 states from late 1995 through 1996 resulted in an estimated increase in highway deaths of about 15 percent from the same months in the six years before the speed limits were changed. At the same time, highway deaths did not rise on the roads where the speed limits were not raised. The findings reiterated a 12-state study similarly conducted earlier by the IIHS, which showed a 12 percent increase in highway deaths, and a 1998 National Highway Traffic Safety Administration (NHTSA) study of 32 states where highway fatalities rose 10.4 percent.

Despite statistics that indicate that higher speeds kill more motorists, by the end of 1998, every state in the Union except for Hawaii had raised its highway speed limits. In Montana, where the original legislation repealing the speed limit allowed motorists to drive in a safe and prudent manner instead of setting a limit, a bill that would impose a 75-mph daytime limit on most interstates, limit speed near cities to 65-mph, and lower limits on smaller roadways, is pending.

NHTSA says speeding was a factor in 30 percent of all fatal accidents in 1997, when 13,036 lives were lost in speed-related crashes. The odds of dying or being seriously injured in a crash double for every 10 mph a driver speeds over 50 mph, and the ability of seat belts, air bags and child safety seats

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to protect occupants in a crash diminishes as speed increases. The Department of Transportation (DOT) has estimated that if speed limits were repealed across the entire United States, there would be 4,750 additional crash deaths each year. NHTSA notes that there are strong connections between young drivers, speeding, drunk driving, and not using seat belts. Unfortunately, Americans are more tolerant of speeding now than they have been in the past, depending on the road driven--more than half of those polled by the Insurance Research Council in 1995 said that it is acceptable to speed on highways, compared with 37 percent who thought it acceptable to speed on local roads. In 1992, 46 percent said it was acceptable to speed on highways, and 32 approved of speeding on local roads.

Young Drivers: According to the DOT, young drivers, those under age 16 to the age of 20 - accounted for 6.7 percent of all licensed drivers in 1996, but for 14 percent of all drivers in fatal crashes in 1997, and for 17 percent of all drivers in police-reported crashes. The IIHS says the youngest drivers are the most likely to be involved in crashes. While the risk of crash involvement per mile driven among 16- to 19-year-old drivers is four times the risk of older drivers, the risk peaks among 16- to 17-year-old drivers.

States are increasingly adopting graduated driver licenses (GDLs) for young drivers, (see chart at end of paper). These laws allow young drivers to improve their skills and driving habits, and restrict night-time driving, when most teenage drivers' accidents occur. Drivers first receive a learner's permit with a minimum holding period. Any alcohol-related or traffic offense results in revocation, and seat belts must be worn, among other provisions. The next stage is a provisional or intermediate license, with the same general restrictions. A standard drivers' license is issued after a specific period of driving with no major offenses and a road test is passed.

According to the National Highway Traffic Safety Administration, eleven states have matched or exceeded the provisions of a model GDL law drafted by the National Committee on Uniform Traffic Laws and Ordinances (NCUTLO). These states are: California, Delaware, Florida, Georgia, Iowa, Massachusetts, Michigan, New Jersey, North Carolina, Ohio and Rhode Island. Thirteen other states have enacted some components of the model law, and another handful has enacted at least one component.

The governor of Arizona signed a limited GDL bill in April that requires 16- to 18-year-olds to complete a drivers education program or 25 hours of supervised driving, five of those at night, before obtaining a class "G" (graduated) license. The young driver must complete special classes after a moving violation and will have his or her license suspended for three months after two violations and for six months after three violations. GDL bills are moving through the legislatures in Alabama, Colorado, Kansas, Missouri, New Mexico, Pennsylvania, Utah, and Washington, DC. Of note, in New Mexico, which currently licenses teens under the age of 16, the bill proposes that 15-year-olds can obtain a permit only if attending drivers education classes, and makes 16 years and six months the earliest a driver can get a provisional license.

In Florida, where the first GDL law was enacted in 1996, researchers say that there were 11 percent fewer crashes among 16-year-old drivers in 1997, compared with 1995. Seventeen-year-old drivers experienced a 7 percent reduction at the same time, and the drop was 19 percent for 15-year-olds. In

addition, researchers estimate that the law prevented 1,167 crashes among 15- to 17-year-olds in 1998 in which someone was killed or injured.

Older drivers: The DOT says that although licensed "older" drivers have fewer accidents relative to the total population, based on the miles they travel, they have the highest fatality rates, along with the youngest drivers. In 1997, 17.1 million or 10 percent of all licensed drivers were over the age of 70. The number of over-70 drivers has grown 45 percent in a decade, while the total number of drivers rose only 13 percent. Drivers over the age of 70 were involved in 8.7 percent of fatal crashes in 1997. Most fatalities involving older drivers occur during the daytime - 82 percent in 1997 - and 71 percent happen on weekdays. Older-driver deaths are generally not associated with drinking - they have the lowest rates of intoxication of all adults in fatal crashes.

Most states issue older drivers restricted licenses so that they can retain their mobility and independence. Depending on their ability, older drivers may be limited to driving during daylight hours, or on non-freeway types of roads. Of note, in most states restrictions such as these can be placed on anyone's drivers license, regardless of age, if their medical condition warrants it. Most states (41) require drivers to take a vision test when they renew their license, regardless of age (see chart). These tests have been found to be an effective way to lower older drivers' crash risk. (See Background section.) About half of the states require a road test at renewal for any driver who has had a certain number of accidents or traffic infractions, and a smaller number require written tests and medical exams if necessary. At least 14 states mandate more frequent testing for older drivers than for younger drivers at license renewal. For instance, in Illinois, drivers over age 75 must take a road test when they renew their license; in Indiana, road and written tests are required, in addition to vision testing.

Ten states require doctors to report any dangerous medical conditions that can impair a patient's driving. Although this requirement covers drivers of all ages and a variety of medical conditions, at least one state - California - specifically requires doctors to report a diagnosis of dementia, which is a common symptom of Alzheimer's disease. The urgency of the requirement is highlighted by a study of accidents in Sweden and Finland which found that one third of drivers age 65 to 90 who were killed in crashes had brain lesions commonly found in Alzheimer's patients, and another 20 percent had lesions which may indicate an early form of Alzheimer's disease. In addition to California's law requiring doctors to report dementia, Missouri law provides confidentiality to close family members or doctors who report incompetent drivers to the state agency that licenses drivers.

A study of 294 drivers aged 55 to 87 tracked over three years found that those who had a 40 percent or greater impairment in the "useful field of vision" were 2.2 times more likely to have a crash within the time span of the study. (The useful field of vision is the area over which people can use quickly presented information, and depends on attention and rapid processing of information). The doctors participating in the study, which was reported in the June 1998 Journal of the American Medical Association, suggest that a field of vision test may be useful in screening risky older drivers.

Aggressive Driving: Aggressive driving, also called road rage, covers a range of driving behaviors such as tailgating, speeding, and weaving in and

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out of traffic, at its mildest. The term can also include blowing the horn at other drivers, using obscene gestures, high speed duels and at its worst, gunplay. Observers note that such behaviors were identified as early as 1915 and some say that they are not increasing. NHTSA says that the deaths of nearly 28,000 of the 41,907 people killed in highway crashes in 1996 were associated with road rage. NHTSA's administrator, speaking at a House subcommittee on transportation hearing in 1997, blamed road rage on increased congestion on the roads leading to driver frustration. The AAA Foundation for Traffic Safety says that there were over 10,000 aggressive driving incidents (where an angry motorist intentionally injured or killed another motorist or pedestrian in response to a grievance) from 1990 through mid-1996.

The driving public is concerned about their personal safety. An AAA/Gallup poll showed that 40 percent of those polled say that aggressive drivers are their biggest concern. The Insurance Research Council found that most people blame other motorists' behavior rather than road conditions as causes of aggressive driving. Almost three quarters of respondents in a late 1997 poll said that a decrease in consideration for others is a major factor in leading to the increase in aggressive driving, followed by the idea that other people are driving aggressively (65 percent) and the respondents' personal stress (63 percent). A NHTSA survey of 6,000 drivers found that 60 percent consider unsafe driving by others a major personal threat and 98 percent feel it is important to do something about it.

In addition to hearings in the House on the federal level, 17 states have considered road rage legislation, according to the National Conference of State Legislators. In 1998, Arizona enacted a law that makes aggressive driving -- characterized as speeding plus committing two other infractions such as tailgating, failure to yield or erratic lane changes, and being an immediate hazard to another driver -- a crime punishable by a 30-day license suspension. Arizona is the first state in the Union to pass such a law. Kansas legislators have introduced a similar bill, and four other states have aggressive driving bills pending. About 17 states have formed highway patrol groups to combat aggressive driving.

Occupant Safety: Passive restraints - air bags and automatic seat belts - protect vehicle occupants in a crash by restraining parts of the body that would otherwise hit the steering wheel, dashboard or other hard surfaces. The seriousness of injuries in auto accidents depends to some extent on the part of the vehicle damaged. Frontal crashes, the type of crash for which air bags were designed, are most likely to be fatal. NHTSA says that air bags saved 2,663 lives from 1987 to early 1997, 842 in 1997 alone.

NHTSA also reported air bag injuries. Most injuries were minor, but a small percentage were serious and included fatalities. However, compared with the number of deployments - 1.2 million as estimated by the IIHS - the risk of injury is very low. Most of the people who were fatally injured were unbelted or improperly belted, according to NHTSA. These fatalities can be traced at least in part to the fact that older air bags were designed to protect an unbelted 5-foot, nine-inch, 165-lb. man from injuries in a frontal crash. The energy from inflating bags can cause injury to small people, especially if they are not properly restrained. If small children sit unbelted in the front seat, they can be thrown into the path of a deploying air bag, which inflates with great force. This risk also applies to small adults who must sit close to the steering wheel to reach the pedals, pregnant women and the elderly. Infants

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in rear-facing safety seats on the passenger side can be severely injured because their heads are in the direct path of a n inflating air bag. Despite the reports of air bag-caused injuries, an Insurance Research Council survey found that 71 percent of respondents who already have air bags want them on their next vehicle. The survey, conducted in mid-1997, also found that 72 percent of all respondents are aware of air bag dangers, up from 51 percent in the prior year.

Since 1991, NHTSA has been issuing warnings, most recently in writing inside vehicles and on child safety seats, to shield vulnerable people from air bag injury, and allowed deactivating air bags in some cases. In early 1997, NHTSA permitted automakers to "de power" air bags by 25 to 30 percent, an interim solution as smart systems are being developed. Ford, GM and Chrysler began installing depowered air bags in many 1998 models, and NHTSA crash tests show that Ford's depowered air bags are as effective as older air bags. The IIHS says that no deaths or injuries have been reported in air bag deployments in 1998 or 1999 model year cars. In January 1998, NHTSA allowed auto dealers and repair shops to install air bag cut-off switches after owners completed a four-step process and NHTSA found the owners eligible. However, by September 1998, about 45,000 owners had permission to install the switches but only 2,300 had them installed because of the threat of liability to shops from those who may be injured in the vehicles. NHTSA is expected to issue final rules on upgraded air bag tests, which include dummies representing children and small adults along with the average male.

Latest developments in occupant safety are the addition of side air bags in more vehicle models, and NHTSA's final rule allowing car makers to install head protection systems, similar to air bags, to provide more protection in side impacts. The rule, expected to save 1,200 lives each year and \$ 900 million in economic costs, will be phased in beginning with 1999 model cars. However, the rule does not have strength specifications and there is evidence that side air bags can injure small passengers slumped in their seats or "out of position." Advanced air bag protection was included in the 1998 transportation funding law which requires auto makers to phase in improved air bags that will minimize injury to infants, children and other occupants beginning September, 2002.

Seat belt use laws are on the books in all states except New Hampshire. However, only 15 states and the District of Columbia have primary enforcement laws, which allow law enforcement officers to stop a car for non-compliance with seat belt laws (see chart.) Primary laws are pending in at least four states. In states with weaker secondary enforcement laws, drivers may be stopped only if they are violating other traffic safety laws as well. Seat belts saved an estimated 10,750 lives in 1997 and are effective in protecting occupants from ejection, one of the most injurious results of a crash. In addition, NHTSA says that in 1995 average hospital costs for unbelted crash victims were 55 percent higher than for belted victims. By January 1998, national seat belt usage was 69 percent, based on DOT's weighted average of state surveys.

Insurer Activity: Air Bag Issues: Insurers, concerned about the possibility of an increase in injuries as a result of air bag deactivation, are active in getting the air bag safety message out to the public about the efficacy of air bags and seat belts. One insurer is tracking vehicles that are allowed by NHTSA to deactivate air bags. NHTSA's final ruling did not specify how insurers would be notified regarding which vehicles had deactivated air bags, and insurers are concerned that the lack of information will make it difficult to continue

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to reward policyholders who own air bag-equipped vehicles with discounts, and that used car buyers will not be able to determine whether a vehicle's air bag has been disconnected. (See Insurer Discounts.)

Motorcycle Helmets: Motorcycles account for under 2 percent of all registered motor vehicles and only 0.4 percent of vehicle miles traveled. However, per vehicle mile, motorcycles are about 15 times as likely as car occupants to die in a crash and about 3 times as likely to be injured. In 1997, 2,106 motorcyclists died in crashes, and 43 percent of fatally injured motorcycle drivers and 51 percent of fatally injured passengers were not wearing motorcycle helmets. That year, helmets saved 486 lives, and NHTSA says they would have saved 266 more if all motorcyclists had worn helmets. An earlier study showed that motorcycle helmets prevent fatalities in 33 percent of motorcycle crashes and brain damage in 67 percent. The average charge for hospital care after a crash for motorcyclists not wearing helmets and who sustain brain injuries is more than twice that of motorcyclists who wear helmets. Despite the fact that motorcyclists not wearing helmets were over three times as likely to suffer a brain injury than helmeted motorcyclists, only 22 states and the District of Columbia have laws on the books that require all motorcyclists to wear helmets. Motorcyclists' lobbying groups campaign vigorously to oppose helmet laws, citing a preference for personal freedom over the benefits of the helmets.

Crashworthiness: Crashworthiness relates to what carmakers refer to as "crumple zones," "crash zones" and "safety cages." These are designed to provide crash protection by placing a rigid steel cage around the passenger compartment. To absorb crash energy, sections in the front and rear of the vehicle are designed to crumple in a crash. An effective and uniform bumper standard for all passenger vehicles would reduce collision damage and thus lower insurance premiums. Currently, standards specifying that bumpers and safety-related equipment must withstand a 2.5-mph crash without sustaining damage apply to passenger cars, but not to minivans, despite their popularity as passenger vehicles. Before the 1982 model year, bumpers had to withstand 5-mph crashes without damage. In its latest series of tests designed to test bumper strength at 5 mph, the Insurance Institute for Highway Safety (IIHS) found that out of seven small utility vehicles in four tests, only two sustained less than \$ 3,000 in total damage.

Sport Utility Vehicles (SUVs): There are about 2.7 million SUVs on the road in the United States, up from about 930,000 in 1990. SUVs generally are larger and heavier than standard passenger cars, have higher horsepower, stiffer frames which do not dissipate the force of an impact, and a high potential for rollover. In addition, they have higher bumpers which do not match those of passenger cars and inflict greater damage to cars in collisions and result in more injuries. While these factors are reflected in physical damage rates, the majority of insurers have not changed liability rates.

In order to alleviate some of the problems with SUVs, at least two motor vehicle manufacturers, Mercedes-Benz and Ford, have made corrections for incompatibilities in their SUVs. However, other manufacturers are planning to introduce even larger and heavier models in the near future, which may worsen mismatch problems, according to the IIHS. In addition, the DOT requires a new, more noticeable design for the mandatory rollover warning sticker that must be placed on SUVs, that includes the words "higher rollover risk".

Generic Crash Parts: Crash parts, the most frequently damaged in crashes, are cosmetic sheet metal parts that do not affect the operation of a vehicle. Auto repair shops have two sources for these parts: the original equipment manufacturer (OEM) or "competitive" producers of generic parts who are not associated with automakers (See Background.) The issue of using generic crash parts has been raised in about a dozen state legislatures in 1999, and include bills that may have provisions that limit insurer use of generic parts to cars that are older than two model years, allow policyholders to contest their use, and require policyholders to be informed of the types of parts used to repair their cars.

In 1998 the United States Supreme Court let stand a lower court ruling in Illinois that granted class action status to a policyholder lawsuit against State Farm Mutual Auto Insurance Co. involving the insurer's use of generic parts. The case involves policyholders in Illinois who claim that the insurer calculates auto repair estimates using the price of generic crash parts, which are usually less expensive. Plaintiff's lawyers argued that the uniformity of State Farm's claims settlement practices merited the inclusion of all policyholders whose vehicles were repaired by State Farm.

Industry groups and attorneys general of a handful of states had petitioned the Supreme Court to review the Illinois decision to grant class action status because the policies are governed by the laws of the states in which they were issued. Consumer groups also filed briefs supporting State Farm by highlighting the price declines in automakers' parts due to competition from generic part manufacturers. The Supreme Court's rejection paves the way for a class action suit in summer 1999 that could cover 5 million policyholders and involve claims valued at more than \$2 billion. In January, similar lawsuits seeking class action status were filed against Allstate and GEICO in Arizona.

Insurer Discounts: Some insurers offer substantial premium discounts on the medical care or personal injury protection (no-fault) part of auto insurance policies to the owners of automobiles equipped with air bags and automatic seat belts. Discounts given for passive restraints by the top 10 auto insurers, which account for over half of the auto insurance market, range from 5-60 percent. Six states require insurers to give discounts for cars equipped with air bags, and four states mandate discounts for passive restraints. (Discounts for air bags may be cancelled if owners deactivate them). At least two states - Florida and New York - require insurers to give discounts for cars equipped with the anti-lock brakes, which are designed to improve steering control and stability of handling when the car is brought to a stop. Some insurers have nationwide discounts in place. Research on the effectiveness of anti-lock brakes conducted since 1994 has been inconclusive. Studies by insurance groups, NHTSA, auto makers, and others have produced contradictions. The IIHS says that more study is needed to discern why the brakes appear effective on the test track but not in actual crashes, and that the reason why the brakes haven't produced underwriting benefits is not yet clear. In fact, in 1995, at least one insurance company discontinued discounts for anti-lock brakes. One factor in the disappointing results may be the fact that drivers need to be re-trained to use the brakes effectively.

Cellular Phones: NHTSA says that there are 50 million cellular phone subscribers in the U.S. today, and 100 million are forecast to be in use by the year 2000. Drivers using cell phones increase their risk of having an accident four-fold, according to a study in the New England Journal of Medicine

published in early 1997. Researchers at the University of Toronto studied the telephone records of 700 drivers who had had accidents and who owned cell phones, and concluded that 170 of them had used the phones within 10 minutes of the crash. The risk of having a crash while using a cell phone is four times higher than when a phone is not being used. Not all of the drivers were at fault in all the collisions, showing that they may be distracted from avoiding collisions. Using a hands-free phone did not appear to improve crash risk.

A NHTSA study released in January reiterates previous findings that driver inattention is a primary factor in about half of all crashes in the United States. The study found that using cell phones while driving in some cases causes driver inattention and distraction similar to the factors that are known to increase crash risk. Because the data in the study came from a small sample, the agency does not draw conclusions regarding the magnitude of safety-related problems linked to cell phone use but says that since its use is growing, data collection and reporting should be improved and more research should be conducted. A 1997 survey by the Insurance Research Council found that 27 percent of vehicle owners have cellular phones. In addition, 84 percent of cell phone users believe that using their phones while driving is a distraction and increases the risk of crashes. However, 61 percent use their phones while driving at least some of the time, and 30 percent report using their phones frequently. Britain, Brazil, Switzerland and Israel ban cell phone use while driving. In the United States, legislation has been proposed in a handful of states but to date no state has enacted a law to restrict the use of cell phones while driving.

Red Light Running: The NHTSA says that in 1997 there were 1,114 traffic deaths at intersections where drivers ran red lights. The most common reason given for red light running, according to NHTSA's 1998 survey of 800 drivers between the ages of 18 and 65, was that the drivers were in a hurry (54 percent). Two out of every three Americans see other drivers run red lights every day, and almost all of those polled (96 percent) fear they will be struck at an intersection by a red light runner. One in every three respondents say they personally know someone who was killed or injured in a red light-running crash-about the same amount of people who know someone who was involved in a drunk driving crash. Earlier in 1998, the Insurance Institute for Highway Safety estimated that red light runners were responsible for 260,000 crashes each year, about 750 of them fatal. Red light runners were profiled as being young, having poor driving records, high alcohol blood concentrations, and living in cities. Red light cameras-which automatically photograph offenders-have been installed in about 20 localities in 10 states in which they are permitted, and in the District of Columbia. An IIHS study of a California location showed that red light running dropped 42 percent after they cameras were used at 9 intersections; in Alexandria, Virginia about 7,500 red light runners were caught by police in less than six months.

Background

Seat-Belt Usage Laws and Air Bags: Research on the effects of car crashes on the human body was conducted as far back as the 1940s and 1950s, but it was not until the mid-1970s that a small number of cars were sold with air bags. About 10 years went by before federal legislators and regulators were convinced that air bags, used with lap and shoulder belts, could save a significant number of lives.

Insurance Information Institute, May, 1999

In 1981, Sate Farm Insurance Company petitioned the U.S. Court of Appeals to review the Department of Transportation's decision to rescind the automatic restraint standards opposed by auto manufacturers. The case, eventually advocated by a group of insurers, was finally heard by the U.S. Supreme Court which ruled in 1983 that DOT had erred in delaying the implementation of air bags. By 1984, DOT ordered all 1990 cars to be equipped with automatic restraints.

U.S. auto manufacturers had been long opposed to air bags because of their cost; they also contended that the technology was unproven and that air bags had virtually no effect unless a seat belt also is used. By 1988, the benefits of air bags were proven by the results of fleet use by insurers and government agencies. However, by the 1990s, reports began to surface that air bag deployment had caused injuries and deaths. Although some of the deaths resulted from not using seatbelts, or improperly using them, it became apparent that children, the elderly and people of small stature were vulnerable in air bag deployments.

The first seatbelt use law was enacted by New York in 1984; by 1996, only one state, New Hampshire, did not have a seat belt law. In at least half a dozen states, efforts were made to repeal seat-belt laws on the basis that they are an intrusion into personal freedom. Such repeals were rejected in Iowa and Tennessee, but were successful in Massachusetts, Nebraska and North Dakota. (These states now have seat belt laws, see chart at end of paper.) In an important court test of mandatory seat-belt use laws in Illinois, the state's Supreme Court ruled in October 1986 that the state's seat-belt use law does not violate personal rights and that Illinois justices were wrong in 1969 when they struck down a law requiring motorcyclists to wear helmets. Lower courts had cited that ruling in voiding tickets for seat-belt law violators.

Seat belt use is a behavior that needs to become a habit to be effective. Studies show that usage will decline from initially high levels unless there is continuing publicity and enforcement. Auto safety experts and insurance companies promoted the use of seat belts for every car trip, not just during highway driving. According to the Alliance of American Insurers, 75 percent of injury-causing traffic accidents occur within 25 miles of home and 80 percent of serious and fatal injuries occur in vehicles traveling less

than 40 mph. Some people fail to buckle up because they are afraid of being trapped inside their car by their seat belt. However, the chance of being killed in an auto accident is 25 times greater when a driver or passenger is thrown out of the car.

According to a 1995 NHTSA report, states that have enacted seat belt use laws had about a 12.6 percent decrease in fatalities. States that have primary enforcement of their laws had an additional 5.9 percent drop in fatalities. The study also found that seat belt use is lower in pickups, vans and older vehicles, and lower where alcohol is involved, if the accident occurred at night, and in the rear seats. Seat belt use increases with age, and is higher among women.

Seat-belt laws by themselves are not a total solution to the problem of highway deaths and injuries. In low- to moderate-speed crashes (up to about 25 mph head-on) lap/shoulder belts are effective. But in crashes at higher speeds, even belted occupants may hit steering columns, windshields, and dashboards,

Insurance Information Institute, May, 1999

especially with their faces and heads, although injuries sustained almost always are less severe than they would be without belts. The combination of an air bag plus a seat belt is a much more effective restraint system than either device alone.

Older Drivers: State-mandated tests for the visual acuity of older drivers are an effective way to lower the fatal crash risk of those drivers, according to researchers at the University of Baltimore and the Johns Hopkins University. The researchers analyzed all fatal crashes from the National Highway Traffic Safety Administration (NHTSA) that involved at least one driver age 70 and over. The study, reported in the Journal of the American Medical Association, showed that in the 38 states that mandated vision tests for license renewals at the time of the study, drivers in this age group were involved in 17.2 fatal accidents per 100,000 older drivers. In states where no testing was required, the ratio was 18.7 fatal crashes. The researchers say that the decline in the ratio is small but significant, especially since the number of 70 and older drivers will grow to 30 million by the year 2020.

Some 41 states require drivers to take vision tests at license renewal, regardless of age (see chart). Older drivers object to blanket restrictions on their driving privileges, citing the wide differences in the way the aging process affects individuals. Some older drivers, aware of their limitations, do not drive at night or during rush hours, and avoid left turns. They take drivers' education courses, offered by such groups as the American Association of Retired Persons, and some earn discounts on their auto insurance.

After Market or Crash Parts: The term "crash parts" refers to parts most frequently damaged in automobile accidents. There are no federal standards for these sheet metal parts because they do not significantly affect the safety or crashworthiness of a vehicle. Auto repair shops have two sources for these parts -- the original equipment manufacturer (OEM) parts, or "competitive" replacement parts not associated with auto manufacturers. Competitive replacement parts are cheaper than OEM parts, but in the past, OEMs, consumer groups and others said that the parts were of inferior quality. Standards have now been developed and insurance companies have been encouraging the use of non-OEM parts to control costs. In fact some insurers consistently use non-OEM parts.

Some consumers object to the use of non-OEM parts when their vehicle is repaired, usually because they have new or expensive cars that they want to maintain in their original condition. In response, about 40 states now require insurers to notify their policyholders that non-OEM parts will be used in collision repair. Alabama and a handful of other states have gone further and restrict the use of non-OEM parts. Insurance company practices in this area differ. In some cases, consumers can pay the difference between OEM and non-OEM parts.

Speed Limits: The Surface Transportation and Uniform Relocation Assistance Act (STURRA) of 1987 allowing states to increase the speed limit from 55 mph to 65 mph applies only to certain parts of the interstate highway system. These stretches must be outside urbanized areas with populations of 50,000 or more, as designated by the Bureau of the Census. The issue whether to increase speed limits on rural stretches of the interstate highway system was precipitated in early 1987 by the announcement that Arizona and Vermont would lose up to 10 percent of their federal highway subsidies for failing to effectively enforce

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the speed limit which was then 55 mph. (However, in January 1987, DOT imposed on Arizona a minimal fine of one percent or \$ 510,000.) Observers noted that the law was flouted in all 50 states and about 20 states had undermined federal law by reducing penalties for speeding.

Data showing higher speed means more death is reiterated annually in studies conducted by the IIHS comparing highway crashes in states that raised their speed limit to 65 mph. Results from 1994 data show that the 65 mph rural interstate speed limits cause about 15-20 percent more deaths than otherwise expected. Both IIHS and federal studies show that about 400 lives are lost each year in states that have raised their limits to 65 mph.

Speeding by radar detector owners has been well documented. The Insurance Institute for Highway Safety says that drivers with radar detectors reduced their speeds by at least 5-mph or activated their brake lights when suddenly exposed to police radar. Before exposure, these vehicles traveled significantly faster. By one mile past the radar, over three-quarters of vehicles with radar detectors were traveling at least 5 mph faster than the speed limit. Technological advances utilizing computers, laser guns, and other equipment have enabled law enforcement agencies to identify and ticket speeders despite their use of radar detectors. In addition, where radar detectors are prohibited by law, police can use devices that identify radar detector use and then confiscate the illegal devices.

Bumpers: The federal government's current requirement is that an auto bumper be able to withstand a crash impact of 2.5 mph. Previously, the standard was 5 mph and excluded any damage to the bumper itself. Some auto manufacturers are voluntarily returning to a 5-mph bumper due to pressure from the insurance industry and consumer groups. However, insurance industry representatives note that the auto industry's "so-called" 5 mph bumpers incur huge repair costs after 5-mph impacts. NHTSA estimates of net economic savings to the public from a strong 5-mph bumper regulation range from \$ 400 million to \$ 1 billion annually.

Truck Safety: A 1985 General Accounting Office report suggested that increased oversight could improve the safety of interstate trucking and recommended adoption of more consistent investigation and enforcement criteria. Transport officials say deterioration in trucking equipment and driving standards, which was seen as a major cause of such accidents, was in part the result of the 1980 deregulation of the trucking industry. In response, the Motor Carrier Safety Act of 1986, which was designed to phase in various regulations through 1992, was enacted. The federal government also increased funds available to states for training truck inspection teams and, as a result, more trucks were ordered off the road.

According to IIHS, more than 4,700 people die each year in crashes involving large trucks. Most of the people killed are occupants of other vehicles. Although large trucks amounted to 3.3 percent of all registered vehicles in 1993 (the latest year available for truck registrations), they accounted for 8.4 percent of all fatal crashes in 1994.

Many states have enacted laws to issue licenses under the Commercial Driver License Program, to implement the 1986 Commercial Motor Vehicle Safety Act. This law, among other things, requires the uniform testing and licensing of truck and bus drivers. When a driver obtains his or her license, the driver's name and Social Security number is placed in a national computer data base to

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help eliminate situations that allow drivers to obtain more than one license.

Accident Data: In the United States, two organizations release fatality rates -- deaths per hundred million vehicle miles traveled -- the DOT through FARS and the National Safety Council. There are two major differences between the figures. FARS data is released to the public calculated to one decimal place whereas the National Safety Council releases data calculated to two decimal places. The National Safety Council reported the fatality rate at 1.76 in 1996, down slightly from 1.79 in 1995. The FARS rate for

1996 released to the public was 1.7, a number that is basically unchanged since 1993. But when it is calculated on the same basis as the National Safety Council the 1994 figure is 1.73. Thus, both organizations show the fatality rate down slightly when calculated to the second decimal point. The second major difference is related to the time period within which the crash victim dies of his or her injuries. Under the FARS system, deaths occurring within 30 days of a crash are included in the total. The National Safety Council includes deaths that occur within a year of the crash, accounting for its higher death rate.

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LOAD-DATE: JUNE 24, 1999

LEVEL 1 - 22 OF 28 STORIES

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The Mirror

April 22, 1999, Thursday

SECTION: NEWS; Pg. 8, 9

LENGTH: 1094 words

HEADLINE: THE TRENCHCOAT MAFIA MASSACRE: THIS WILL HAPPEN AGAIN AND AGAIN AND
AGA IN.. UNTIL AMERICA TELLS ITS CHILDREN: GUNS ARE EVIL;
211,000,000 FIREARMS BLIGHT A NATION

BYLINE: Chris Hughes And Fiona Cummins

BODY:

IT'S the greatest love of the American lifestyle - and the most lethal. It's the gun.

The image we have here of the US is no longer the wholesome mom, apple pies and stars and stripes one.

When we think of America now, we associate it with massacre and bloodshed. Worse still we think of innocent school children cut down in playgrounds and classrooms by crazed gunmen.

Yet the US seems to insist on allowing its people to carry weapons and the most talked about issue across the States is a citizen's rights to bear arms.

Stop a man or a woman in the street in Los Angeles and they are more likely to be carrying a pistol than a pack of cigarettes.

The West was won by the gun. But 200 years later the descendants of those gunslinging pioneers have still not put their weapons down.

There are an estimated 211 million guns in the States. Handgun murders in 1996 stood at 9,390.

That was 300 times more than in Britain where a ban on privately-owned handguns was introduced following the Dunblane massacre. Firearms have been used to kill more than 60,000 people in America in the last two years.

And every six hours a US teenager commits suicide by shooting.

But two thirds of Americans say tightening gun controls removes a "citizen's liberty".

So what are the politicians doing to try to stem the tide of gun horrors?

Hedging his bets - and with a sharp eye on the voter possibilities, - last night President Bill Clinton cancelled a trip to the opening of a Texas airport and warily hinted of more moves to control guns.

He said: "America has a responsibility to do everything we can to make sure this doesn't make 1999 a year like last year.

The Mirror, April 22, 1999

"That we don't have another rash of this, that we really can be more effective in preventing it." He had already passed the Brady Law in 1993 which means you need five days notice to purchase a gun.

But you can still buy one on the Internet and most Los Angeles schoolchildren could lay their hands on a gun within an hour.

Statistics show that an estimated 1.2million children have access to weapons when they are alone at home.

A report last year revealed nearly one million teenagers carried guns to school.

And so the slaughter continues, despite a series of gun horrors by children on other children and adults.

Last year four pupils and a teacher at an Arkansas school were shot dead by two schoolboys

Andrew Golden and Mitchell Johnson gunned them down using an arsenal of weapons most British kids haven't even heard of.

A wave of revulsion and outrage swept across America and there were furious calls for stricter gun controls.

Campaigners screamed for a very basic law to make gun owners accountable for their weapons. But in a stunning example of how strong the American pro-gun lobby is even that failed to get through the courts.

In America a gun comes off the production line every 20 seconds. And someone is shot by one every two minutes.

The States has no worse a crime rate than anywhere else in the world - if you delete the word gun from those statistics.

Washington based lobby group Handgun Control recently launched a new campaign for stricter gun laws.

Their chillingly effective poster reads: "In 1996, handguns murdered two people in New Zealand; 13 people in Australia; 15 in Japan; 30 in Great Britain; 106 in Canada; 213 in Germany and 9,390 in the United States.

"God Bless America."

And after yesterday's massacre in Colorado the powerful National Rifle Association - led by screen legend Charlton Heston and with 2.8 million members - was preparing itself for a new barrage of calls for sweeping changes in gun laws.

Amazingly, right-winger Heston's reaction to the shooting was to call for the near-militarisation of schools with armed guards. He said: "If course this was a tragedy. But if there was just one armed guard in that school it could have been prevented.

The Mirror, April 22, 1999

"You have to blame the parents of these two boys. People have to be taught that actions have consequences. There are millions of guns in private hands in America.

"In states where people can legally carry concealed weapons there has been a sharp drop in crime."

So with two thirds of the US against a gun ban how can the anti-gun lobby succeed?

The right to bear arms is enshrined in the Second Amendment and the concept of giving them up seems simply beyond many American's understanding.

Even Dick Young, superintendent at the Westside Middle School where the Arkansas killings took place, echoed the cynicism over banning guns.

He said last night: "Look, the gun is just the instrument. What about the individual responsible.

"It's not about banning guns. but about holding people accountable for their actions. Parents should be responsible. They tried to pass laws after what happened here and it failed. You don't ban guns in America."

And Professor James Wright, of Tulane University, New Orleans, added: "Firearms are the most commonly owned piece of sporting equipment in the US with the exception of trainers.

"If half of households own guns and their presence incites acts of violence, bodies would be piled three deep. But they are not."

Most pro-gun Americans cite self defence as a reason to carry a weapon. But a Seattle-based study found for every self-defence killing of an intruder in the home there were 42.9 other deaths caused by guns including murder and accidental shootings.

There is evidence of some hope in pockets of America.

A referendum in Missouri earlier this month rejected the proposed lifting of the ban on carrying concealed weapons.

However, it is just one of seven states where it is illegal to have a concealed gun.

With that in mind it looks like being a long time before America ends its love affair with the gun and finally teaches its children the evils of weapons.WEAPONS FACTFILEHANDGUNS kill 60 in the US every day, including 12 children.

US citizens own 211 million guns - a third are handguns.

A NEW handgun is produced every 20 seconds and is used to shoot someone every two minutes.

EACH day handguns are used in an average 33 rapes, 575 robberies and 1,116 assaults.

The Mirror, April 22, 1999

ONLY one in 44 gun fatalities in the US involves self-defence against an intruder.

SHOOTING is the leading cause of death for African-American males aged 15 to 24.

A CHILD under the age of 18 uses a gun to commit suicide every six hours.

MORE people are killed in Los Angeles from suicide and murder using guns than are killed in car crashes.

GRAPHIC: GRUESOME TRADE: But scenes like this in a US gun shop are a way of life; TERROR:; Gun-loving Andrew Golden and pal shot pupils dead; USA SCHOOL EQUIPMENT

LANGUAGE: ENGLISH

LOAD-DATE: April 22, 1999

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St. Louis Post-Dispatch

May 1, 1999, Saturday, FIVE STAR LIFT EDITION

SECTION: NEWS, Pg. 8

LENGTH: 692 words

HEADLINE: CITY'S SUIT INCLUDES ARGUMENTS USED IN CASES BY OTHER STATES, CITIES

BYLINE: Yuki Noguchi; Of The Post-Dispatch Washington Bureau

DATELINE: WASHINGTON

BODY:

St. Louis' suit against gun makers comprises a blend of arguments borrowed from other cities' suits. These include:

- Product liability. Guns are unregulated by the Consumer Product Safety Commission, and therefore cannot be recalled or held to safety standards. But the city of New Orleans is arguing that they should be regulated for safety and that the absence of safety devices is a product defect.

- Public nuisance. This argument has not been tested in court but may work for Chicago, which, unlike St. Louis, bans the sale and possession of handguns within city limits. The argument is that an oversupply of guns, like pollution, is a public nuisance.

- Negligent marketing. This argument says the industry has a duty to take measures preventing guns from reaching criminals in areas where gun laws are stricter. It accuses the industry of oversupplying a market, knowing the guns will be resold into the hands of criminals. This argument won two private cases in Brooklyn.

St. Louis' suit, filed Friday in St. Louis Circuit Court, accuses the industry of raking in profits at the expense of the public's health and welfare. It accuses 27 defendants - gun manufacturers, distributors and a retail shop - of discouraging the development and installation of safety features on guns, failing to take steps to prevent illegal gun sales, and endangering the public's safety.

Carl W. Yates III, the main attorney working on the case, says the city has not decided how much to seek in damages. The sum will be proportionate to other cities' claims, which range in the hundreds of millions.

Detroit and Wayne County, Mich., filed suits Monday against 35 gun makers, retailers and distributors, seeking \$ 800 million.

St. Louis' suit joins a legal debate that already has become heated.

Pro-gun policy analyst H. Sterling Burnett, at the National Center for Policy Analysis, says many cities are arguing that gun makers negligently distribute their guns, but wholesalers and retailers can't be expected to control what happens with their products. Where the gun travels after the sale, or what it

St. Louis Post-Dispatch, May 1, 1999

is used for, is not the gun industry's responsibility, he said.

John Lowy, senior attorney at the Center to Prevent Handgun Violence and co-counsel in three of the city suits, said the cases against the industry are "very strong lawsuits, and the gun industry recognizes that." The National Rifle Association's decision to scale back its conference in Denver "shows that the industry is terrified of even having to explain their conduct," he said.

The NRA conference opened Friday in Denver. The event was scaled back after the school massacre in Littleton, Colo.

Timothy Lytton, a tort law professor at New York University School of Law, said the goal of the cities' suits is to regulate the gun industry. "Unlike tobacco, plaintiffs aren't in this business to make money," he said.

Tort suits like St. Louis' are important to make sure the industry abides by the spirit of the laws that regulate it, Lytton said. "It gives the industry an incentive to regulate itself," he said.

Gun suits have a 20-year history, Lytton said, but only recently have specific arguments started to convince some judges and juries that the case against the industry is legally sound. Cities still need more data about the criminal market to support cases they're making, he said.

Recent interest in the sale of guns spurred by school shootings may help cities gather information about gun trafficking that will help their case, Lytton said. "Press coverage in the 1980s focused on how deadly the gun was. Now the questions is, 'How did they get hold of it?'"

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Gun statistics

- In 1996, 34,000 people died from handgun violence.

- The U.S. Bureau of Alcohol, Tobacco and Firearms tracked 3,358 guns in the city of St. Louis from Aug. 1, 1997, to July 31, 1998. More than a third of those were used by people under age 24.

- Firearms are used in 70 percent of homicides nationally.

- There are 223 million guns in the United States, according to the Bureau of Alcohol, Tobacco and Firearms.

LANGUAGE: English

LOAD-DATE: May 1, 1999

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The Washington Times

May 2, 1999, Sunday, Final Edition

SECTION: PART C; SPECIAL REPORT; Pg. C1

LENGTH: 1984 words

HEADLINE: Despite risks, more use guns in self-defense

BYLINE: Frank J. Murray; THE WASHINGTON TIMES

BODY:

Gunpoint confrontations in which armed private citizens turn the tables on violent criminals occur with explosive swiftness hundreds, perhaps thousands, of times each day in the United States.

This guerrilla shooting war is almost invisible to the public, experts say, because combatants on both sides have qualms about publicity. Its biggest victories prevent serious crimes and don't seem newsworthy one at a time.

The loud public battles focus on how often citizens fight back, and how dangerous it is to defend themselves.

Opponents at the extremes of the debate cite estimates that guns are used in self-defense from 180 times a day to once every 13 seconds, a breath-taking number even to the National Rifle Association, which culls a handful of such stories for its monthly magazine feature, "The Armed Citizen."

Whatever the total of potential victims who actually halt crimes with their own guns - a surprising number of them young women with babes in arms - they are a quickly growing lot and convinced that they're doing the right thing.

Among them: A pair of elderly grandmothers in snowbound Moses Lake, Ore., who repelled an attack by four men at home; an Apache Junction, Ariz., church deacon who wounded an armed robber in his church; and a Bangor, Maine, man who shot a robber in his front hallway after being slashed with a knife.

They are people who believe it's better to have a gun and not need it than to need one and not have it.

"I'd do it again in the same situation. I felt we were probably going to get raped and murdered and whatever. I've still got two shotguns," Marty A. Killinger, 64, said in an interview this week from the Oregon home she defended with fellow "pistol-packing grandma" Dorothy Cunningham, 78.

"If you're not willing to defend yourself or your family, you're just going to be a dead gun owner instead of somebody who is alive and safe," said Phoenix apartment manager Rory Vertigan, 27, whom the National Rifle Association invited to yesterday's Denver convention for standing up to three heavily armed men who murdered a police officer.

Bangor robber Michael Chasse was so surprised when his victim drew a gun that he pleaded self-defense at his trial. He was sentenced April 2 to 12 years in

The Washington Times May 2, 1999, Sunday, Final Edition

prison after a jury rejected that claim.

Chasse, 24, a homeless alcoholic with a criminal record, said he slashed bakery executive Robert Cohen - brother of Defense Secretary William S. Cohen - only after Mr. Cohen, inside his own house, drew a gun and shot him twice in the chest and held him until police arrived.

"I saw a man with a gun pointed at me," Chasse testified, saying the knife fell out of his pocket while he was trying to talk.

But Penobscot County prosecutor Mike Roberts told The Washington Times: "The defendant would have continued the attack if he had not been shot. Mr. Cohen hit him twice and he stayed down."

The self-defense claim evoked the oft-told tale that criminals routinely sue citizens who shoot them in the course of a crime.

"Extremely rare and almost never successful. Normally these lawsuits don't go far," said New York state Sen. Michael A.L. Balboni, who recalled a criminal suing unsuccessfully for \$1 million after being shot by the owner of an inn he was burglarizing in Saratoga Springs.

No large numbers of such cases are known either to the Association of Trial Lawyers of America, whose members would file them, or the American Insurance Association, which could expect to pay off for a homeowner.

"There may be coverage" from a homeowners' policy against such a suit if the insured "intended" only to scare the criminal and stop the crime, not specifically intend to shoot him, a spokesman for the insurance group said.

Mr. Balboni studied the topic for a Fordham Urban Law Journal article last year and was the prime sponsor of a bill passed two weeks ago to block felons from "adding the ultimate insult to injury" by going to state courts to profit from their crimes.

"There's something to be said about closing the loophole, if only to save people from being victimized twice by having to pay for a defense," Mr. Balboni said in an interview.

However, police departments occasionally lose such lawsuits. In one such instance, the New York Transit Authority paid \$4.3 million in 1993 to subway mugger Bernard McCummings for a gunshot wound that paralyzed him nine years earlier while he was trying to escape from a robbery. The money was tied up for two more years, however, until state courts in 1995 rejected an attempt to share that with the injured crime victim, Jerome Sandusky, 83.

Most reported self-defense cases are from 31 states that allow some degree of carrying a concealed weapon.

Home invaders, store robbers, and carjackers top the list of those who face gunfire and sometimes death. That was the fate of would-be carjackers who confronted an FBI agent in a 1998 Maryland case and another who chose a Stanton Road SE car occupied by three women, all off-duty D.C. police officers who returned a volley of gunfire.

The Washington Times May 2, 1999, Sunday, Final Edition

Some incidents are flatly unlawful because the private citizen illegally possesses a gun. But even in the District of Columbia, which has the toughest gun laws in America, authorities may tolerate self-defense with an illegal firearm.

When robber Roger W. Green put a gun to the head of the wife of store owner In Doi Choi at his Minnesota Avenue SE convenience store on July 25, 1997, Mr. Choi killed the bandit with a shot in the back. The merchant was not prosecuted, either for the shooting or for illegal gun possession.

Last week, when officers arrested a Capitol Hill resident who had 23 loaded guns in his house, Capt. Elliot Gibson noted the situation from a burglar's perspective: "You definitely would not have wanted to break into that house. You would have been in big trouble."

The fate of being charged with illegal gun possession was not escaped by Carl Rowan when the pro-gun-control columnist used a .22 pistol to shoot a midnight intruder, who turned out to be a teenage skinny-dipper using his backyard pool. Mr. Rowan's sensational 1988 trial ended in a hung jury and he was not retried.

In his autobiography, Mr. Rowan said he still favors gun control but admits being vulnerable to a charge of hypocrisy.

But anecdotal incidents are difficult to translate into meaningful nationwide statistics.

"There isn't any source of information that contradicts the notion that people who use guns for self-protection come out of the event better off," said Florida State University criminologist Gary Kleck, whose studies consistently produce the highest estimates of self-defense with guns - and the most controversy.

"Kleck really drives most people up the wall," said Patrick A. Langan, senior statistician for the Justice Department's massive National Crime Victimization Study (CVS), which tracks annual gun trends. He considers the data reliable but doesn't break out gun statistics in published tables because they are incidental findings.

Reliable numbers are a sore point for gun prohibitionists and advocates alike because the self-defense value of guns is crucial in the political struggle over curbing the number and readiness of legally owned weapons.

"I think it would have a large bearing on deciding the issue. It's one of the key factors that keeps gun control from being enacted," said Desmond Riley of the Coalition to Stop Gun Violence, which he described as "the most radical gun-control group" for seeking to halt all handgun sales and manufacture.

"You've got to have enough benefit to cancel out the cost of arming criminals because there's so many guns out there," conceded Mr. Kleck. He said he converted from being a gun-control advocate who began his studies with the belief that more guns meant more homicides.

The late criminologist Marvin E. Wolfgang, who opposed "ugly, nasty" guns so fervently he advocated taking them from the police, wrote four years ago that he regretted finding Mr. Kleck's study scientifically admirable, cautious and

sound.

Mr. Langan said much the same, but in more cautious terms as he explained why the Justice Department isn't more active on the topic.

"We usually just put out the facts and let others decide whether on balance it's better to resist. These are really complex questions," Mr. Langan said of his own reports that defending against rape, robbery or assault helps 65 percent of the time and makes things worse about 9 percent of the time.

Critics say it is dangerously foolhardy to pull a gun against a criminal. But unpublished Justice Department figures show the risk is less than the alternatives.

Crime victims who use guns to repel an attack are injured 17 percent of the time, less than half as often as crime victims who defend themselves with a knife.

"About one-fourth of those who don't resist at all are injured, which means nothing is a guarantee of safety in these situations," said Mr. Kleck, who challenges the motives of anyone who questions or supports his work.

"Even the NRA uses it as a propaganda ploy. They happen to be facts, but they are politically useful facts so they are used politically," Mr. Kleck said in an interview.

"I don't think the gun opponents of the world have any interest in finding the true number. They all concede it's big, and they're afraid of how big it's going to be because it's against their prohibitionist agenda," he said.

The Coalition to Stop Gun Violence endorses interpretations of the federal study that support the low-end estimate of 65,000 defensive gun uses a year, but agrees that's still a lot. Nationwide it would mean gun owners use weapons to defend against violent crime more than seven times each hour.

"We understand people are scared of crime and violence, but buying a gun is not the way to go. The safety that you feel is an illusion," Mr. Riley said, contending a gun owner is three times more likely to use the weapon against a relative than against a criminal and five times more likely to kill himself with it.

Nine researchers are in the ballpark with Mr. Kleck, reporting more than a million self-defense incidents a year. In 1981 Mr. Kleck found an annual rate of 800,000 incidents, boosted that to 1.2 million by 1990 and doubled it in 1993 to the current 2.5 million.

"The general pattern was that the better the surveys got, the higher the numbers got," Mr. Kleck said, describing a nationally representative survey of 4,977 adults that was specific to guns.

Breaking down his numbers to an average 6,850 self-defense incidents every hour of every day gives pause to Kleck supporters, even at the NRA, which often trumpets his findings but said it would take a broad definition of defense to have more than four episodes each minute.

The Washington Times May 2, 1999, Sunday, Final Edition

"Defensive gun use in this country is a reality, and all estimates of that number are significant, but numbers high or low don't affect the principle that there is a fundamental right of self-defense," NRA spokesman Jim Manown said.

Tim Lambert of the University of New South Wales in Brisbane, Australia, frequently challenges Mr. Kleck's numbers.

"There is overwhelming evidence to prove him wrong, but unlike an urban legend we know the source of the claim," Mr. Lambert said in an e-mail exchange with The Times, saying he tracks the subject because gun control is a hot squabble in Australia as well.

"When a gun is used for defense it is reasonably effective," Mr. Lambert said, adding that he believes the Justice Department study supports an estimate of 100,000 to 200,000 defensive uses a year.

"It's a frustrating murky, murky world," Mr. Riley said. "They've got a hunk of paper that says this, we've got a hunk of paper that says that. After a while you don't know who to believe."

Mr. Kleck said the count is not critical to the conclusion.

GRAPHIC: Map, RIGHT TO CARRY: Since the mid-1980s, 22 states have enacted "shall issue" laws giving private citizens the right to carry concealed weapons or have strengthened such laws in favor of gun owners., By The Washington Times

LANGUAGE: ENGLISH

LOAD-DATE: May 2, 1999

LEVEL 1 - 8 OF 11 STORIES

Copyright 1999 The Washington Post
The Washington Post

April 25, 1999, Sunday, Final Edition

SECTION: OP-ED; Pg. B07

LENGTH: 800 words

HEADLINE: A Littleton Massacre Every Day

BYLINE: Fred Hiatt

BODY:

What a strange country, the many foreign dignitaries gathered here this weekend must have thought. America holds itself up as an example to all. And yet, when it comes to guns and crime and children, it just doesn't seem to get it.

The heads of state here for NATO's anniversary were too polite to make such comments. But as the Littleton, Colo., high school shootings pushed Kosovo off the front pages across the world, others weren't so circumspect. "America, the gun society, is sick," said Japan's Yomiuri Shimbun.

In 1996, the last year for which comparative statistics are available, there were 15 handgun-caused deaths in Japan, 30 in Great Britain, 106 in Canada -- and 9,390 in the United States.

Here are some of the factors that have been blamed for the Littleton massacre: movies, television, the media, the prevalence of abortion, the absence of religion, bad parents, unaware teachers, school size, class size, racial prejudice, teenage alienation, the Internet, the World Wide Web, a culture of death and computer games.

Charlton Heston, spokesman for the National Rifle Association, blamed the absence of an armed security guard (in fact, one was present). He blamed the school for allowing the killers to wear black trench coats. He blamed the parents.

President Clinton talked about hate, prejudice, community policing, conflict resolution, parental responsibility, violence in the culture and much more. When he did turn to guns, it was in a careful, triangulating kind of way.

We need, he said, "to strike a better, proper balance between making it harder for people who are violent to get guns and misuse them, without interfering with the constructive role that it plays in our society."

Hillary Clinton was more forthright. "We need to stand up and say what needs to be said about guns and firearms," she said. "Why on earth would we permit any young person access to the firearms those two young men brought into that school?"

The Washington Post, April 25, 1999

Easier for her, you might say; she's only running in New York, where gun control is favored. He has the whole country.

On the other hand, what is he running for? Why not lead on this issue?

What "constructive role" do handguns play?

In 1996, 4,643 children and teenagers were killed with guns -- 2,866 murdered, 1,309 by suicide, 468 in unintentional shootings. That means 13 every day -- a Littleton massacre every day.

Some of those murders would take place anyway, but many would not. Some of the suicides would be attempted, but many would not, and many more could be treated. The unintentional shootings -- the 6-year-olds playing with a father's gun -- are preventable deaths.

There will always be angry teenagers. But an angry teenager with a baseball bat, or even a knife, is likely to cause less mayhem than those armed -- as were the Littleton killers -- with two sawed-off 12-gauge shotguns, a nine-millimeter semi-automatic rifle and a nine-millimeter semi-automatic pistol.

"We should teach kids how to resolve conflicts," says Stephen Teret, a professor at Johns Hopkins University and director of its Center for Gun Policy and Research. But there are 52 million schoolchildren, he points out. A conflict resolution program that is 99.9 percent successful will leave 52,000 kids "ready to commit mayhem. For them, you want to make sure there's not an operable gun within reach."

How to do that plunges you quickly into the arcana of the gun-control debate: waiting periods and identity checks, one-purchase-a-month laws and liability suits. Rep. Carolyn McCarthy wants to require parents to lock their guns away, holding them responsible if they fail to do so and children then use their guns in a crime.

Teret, believing that many gun owners oppose anything that interferes with immediate access, favors instead technology that personalizes guns so that only their owners can use them. Such technology is available, he says, and getting cheaper all the time.

This is a worthy debate, but it shouldn't obscure the main points: There are too many guns in America, too easily accessible to children.

The gun-control fight has gone on so long that there's a tendency to look for new insights, new approaches, new compromises to jog things along. That's fine. But sometimes, even in age-old debates, one side is right and the other is wrong. And sometimes, it takes an outsider to point that out.

"These horrible tragedies can happen anywhere, not just south of the border," a Canadian columnist, Jennifer Robinson, wrote in the Gazette of Montreal last week. "It's just that the next Littleton is more likely to be in the United States, where guns are a way of life and part of the culture."

It seems obvious to everyone but us.

LEVEL 1 - 4 OF 28 STORIES

Copyright 1999 Journal Sentinel Inc.
Milwaukee Journal Sentinel

June 9, 1999 Wednesday State

SECTION: News Pg. 1

LENGTH: 1077 words

HEADLINE: Almost half of 'crime guns' traced to 1% of sellers, report says

BYLINE: JESSICA MCBRIDE

SOURCE: Journal Sentinel staff

BODY:

About 1% of the more than 100,000 federally licensed firearms dealers in the country sold nearly half of all traced guns used in crimes last year, U.S. Sen. Charles Schumer announced in a report that also says he is proposing legislation to intensify gun dealer regulation.

The report from the New York Democrat says 1,160 gun dealers were the source of 34,626 "crime guns" in 1998 -- 45% of the guns used in crimes last year that were successfully traced by the federal Bureau of Alcohol, Tobacco and Firearms.

The report, released Monday, prominently singles out a West Milwaukee gun store, Badger Guns & Ammo, as being one of "the very worst" dealers in terms of the number of crime guns sold. Those 137 dealers, labeled "bad apples," sold more than 13,000 of the 77,010 crime guns traced in 1998, the report says.

Last month, the Journal Sentinel reported Badger's high number of crime gun sales and also revealed that the store ranked first nationally in 1998, according to a study being done by the ATF. The information had not yet been publicly released at the time.

The ATF has been tracing guns recovered by authorities in some cities for three years; that effort now encompasses 27 major cities. Badger Guns & Ammo was the source of more than 1,000 guns traced to crimes during those three years. The vast majority of the guns were linked to criminal investigations, although a few were recovered for other reasons.

Schumer said the information opened a "new front" in the "battle for rational, targeted gun laws," and to that end he announced he would introduce legislation this week that would target gun dealers who "habitually supply a large number of crime guns."

The legislation will call for new regulations and reporting requirements for any dealer that sold more than 10 guns traced to crimes in a given year. In 1998, that would involve 1,160 gun stores, the report says.

In Wisconsin, about 50 of the state's roughly 2,500 dealers had more than 10 crime guns traced to them during the past three years, according to information obtained by the Journal Sentinel. How many of those would be affected by the legislation is unclear because the information does not break down individual years, and a few of the dealers are out of business.

The dealers are across the state, including in Eau Claire, Madison, Waukesha and Racine.

Schumer will propose that these dealers be the target of "unlimited ATF stings" as well as suspension and revocation of their licenses if they fail to follow enhanced reporting guidelines or knowingly sell a gun to criminals or minors.

"Being the source of a lot of crime guns does not necessarily mean that these dealers are breaking the law, but it cries out for an explanation," Schumer wrote. "Under my new bill, they would be put on a very short leash. They would have strict reporting requirements, and any serious violation would mean at least a 90-day suspension and perhaps permanent shutdown."

Schumer's legislation also would require unlicensed dealers who acquire and then quickly resell handguns and semiautomatic assault weapons to have licensed dealers perform background checks and keep records for their sales.

That proposal echoes in some ways an idea advocated by Wisconsin Attorney General James Doyle after the Journal Sentinel story. Doyle wants a state plan that would restrict the sale of all handguns with barrels shorter than 4 inches to state-licensed gun dealers only.

Jeff Roehm, ATF spokesman in Washington, D.C., said the law currently allows ATF one inspection per year of dealers without a warrant. But he said the ATF may investigate a dealer's records without a warrant at any time for investigations into criminal activity that do not involve the dealer -- such as an investigation into a gun trafficker.

Roehm said the ATF is taking no position on Schumer's report.

Mick Beatovic, one of Badger's three owners, said Tuesday that Schumer's proposal would not affect his store because Badger already has an "open door policy" with law enforcement.

"I think to some dealers it will make a difference, but to us it won't make any difference whatsoever," Beatovic said. "We work very heavily with ATF and the Milwaukee Police Department, thus our high rate of traces. They wave to us as they go into the office. We say hi, we buy doughnuts sometimes, we all sit and have a cup of coffee. Whenever they want, they can come in."

Local police and federal authorities have said there is no evidence Badger operates illegally. They said the store's high number of crime guns likely stems from several things, ranging from lack of competition to the sale of cheap handguns to a problem with straw buyers -- those who buy guns legally for those who cannot buy them, such as felons.

Beatovic said ATF agents come into Badger sometimes on a daily basis. He said it was unfair for Schumer to label all dealers with high numbers of traced guns as "bad apples."

"I think Mr. Schumer in some instances is right in his report, but in many instances he's wrong, categorizing every high volume dealer in with those so-called bad apples," Beatovic said. "We're members of this city also. We're pro law enforcement."

Owners of some other gun dealers in Wisconsin that would likely be affected declined to comment. One of them, the owner of Rusk Gun Shop Inc. in Madison, angrily slammed down the telephone when asked about Schumer's proposal. That store sold 28 guns traced by the ATF during the past three years. Another owner, of Buckhorn Guns Inc. of Greenfield, said he does not speak to news media. That store had 60 guns traced.

In addition to singling out the West Milwaukee store, Schumer reported that during the past three years:

A dealer in Riverdale, Ill., was the source of 1,176 guns traced to crimes. Seven gun dealers in Chicago suburbs, including that store, sold more than 3,600 crime guns.

A dealer in Bedford Heights, Ohio, was the source of 687 guns traced to crimes.

Last month in Milwaukee, the information about Badger's ranking sparked calls for stricter gun control and stricter enforcement of current laws.

It caused Mayor John O. Norquist to predict increased momentum for a gun lawsuit; Doyle changed the state handgun form to enable for more prosecution of straw buyers; police launched a round-up of alleged straw buyers; and Badger's owners removed cheaper handguns from their shelves.

LOAD-DATE: June 10, 1999

LEVEL 1 - 2 OF 2 STORIES

Copyright 1999 Bangor Daily News
BANGOR DAILY NEWS (BANGOR, MAINE)

January 28, 1999 Thursday

LENGTH: 527 words

HEADLINE: Gun play

BODY:

Inspired by the success states had against Big Tobacco, New Orleans, Chicago and other cities are readying liability lawsuits against the handgun industry. A new federal court decision, however, suggests that Big Firearms will be a more elusive target.

The Brooklyn, N.Y., case seeks to hold gun manufacturers and wholesalers liable for seven shootings with illegally obtained handguns; the victims claim the defendants negligently "oversupply" certain markets, thus increasing the likelihood that guns will end up in criminal hands. The claim took a hit Tuesday when Judge Jack Weinstein dropped wholesalers from the suit, saying the plaintiffs had failed to show a link between each of the 15 named wholesalers and the specific shootings.

And if the wholesalers, the next-to-last link in the connection between the assembly line and the street, aren't responsible for guns ending up in the wrong hands, how can those further removed from the tragedies be held liable?

As the states did with tobacco, cities are going for the deepest available pockets. Although violent crime, including murder rates, are dropping, the numbers are still shocking -- some 24,000 gun deaths per year, including about 500 children accidentally killed by playmates -- and public outrage is high. Add to that the states's \$ 206 billion settlement with the tobacco industry, plus the numerous successful liability suits against negligent gun owners and retail dealers, and the temptation had to be overwhelming.

But the similarities between shooting and smoking don't run particularly deep. Tobacco, when used as the manufacturer intends, is harmful. Firearms, when used as intended, result in sport or self-protection. Big Tobacco lied about the effects of its product.

Firearms manufacturers sponsor safety programs. While there have been a few successful defective-product cases brought against manufacturers, those judgments have been for specific firearms that failed to perform as designed.

The Brooklyn case, which inspired the larger cases, is based upon two assertions: that gun manufacturers and wholesalers concentrate advertising in high-crime areas to increase demand; and that they flood jurisdictions that have lax gun laws with product that overflows into the more restrictive places. Gun manufacturers and wholesalers don't control the circulation of gun-oriented

magazines, the primary venue for advertising, nor do they write the state and local laws regarding gun ownership. Both arguments are a stretch logically and virtually impossible to prove.

Probably the best the cities can hope for in their litigation is a concession by manufacturers to develop more fool-proof safety devices and to equip every gun with a trigger lock. Those measures would help prevent accidental shootings but, of course, would leave untouched the larger problem of crime. It's understandable that cities would like a quick and sure way to get to those who use guns to commit crime and who sell guns illegally. It's just unlikely they'll find a shortcut through the civil courts.

LOAD-DATE: January 28, 1999

LEVEL 1 - 1 OF 2 STORIES

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THE DALLAS MORNING NEWS

<=1> View Related Topics

June 30, 1997, Monday, HOME FINAL EDITION

SECTION: BUSINESS; WORLD VIEW; Pg. 1D

LENGTH: 754 words

HEADLINE: All spin-doctoring in the world won't halt baby boomers' agong

BYLINE: Robert Dodge

DATELINE: WASHINGTON

BODY:

WASHINGTON - The Japanese government must be taking lessons from Washington's best spin doctors.

Japanese Prime Minister Ryutaro Hashimoto has coined a term called active aging. It is, as Japanese publicists describe it, "a new paradigm" for defining our attitudes about the elderly.

Have we heard fancy words like these before? Indeed, we have.

They are standard fare from political spin-meisters who want to dress up controversial proposals with sugar-coated, easy-to-swallow language. These are the guys who want you to believe that trees cause pollution.

This time, the political wordsmiths are trying to put a positive spin on the unpleasant solutions to a serious problem facing all the major industrial countries: Retirement and health care costs threaten to bankrupt the governments when the baby boom generation retires after the turn of the century.

When you translate active aging into everyday language, it means that political leaders want people to work later in life, accept fewer benefits and pay more for them. It's just that simple.

The idea here is to convince people that individuals are living longer, societies are aging and we all must accept the idea that workers will remain in the workplace longer. Seniors who remain on the payroll will pay more taxes and can afford to pay more in premiums for their benefits.

Political leaders know those are unpopular ideas. But they also know there are few easy ways to deal with the huge expense of paying for the baby boomers to retire.

Without reforms, federal budget deficits are expected to soar above \$ 300 billion after the turn of the century. Medicare is forecast to go broke, and eventually Social Security would join the critical list. And the problem in Japan and Europe is even worse.

By 2000, 24 percent of Japan's population will be over 65, rising to 43 percent by 2020. In the United States, those over 65 will be 19 percent of the population in 2000 and nearly 28 percent in 2020.

The difficulty of paying for retirement benefits worsens, because there are fewer young workers coming along to sustain government programs by paying taxes.

Currently, the United States has 3.3 people working to support each retiree. Soon, Japan will have just two workers for each retiree, and that ratio will eventually drop to one worker for each pensioner.

Political leaders know what must be done, but they've been unwilling to even discuss the problem until recently. Lawmakers were so afraid of touching entitlement programs that they called them the third rail of American politics.

Like the electrified third rail, touch it and you would die.

During the 1995-96 budget debate, Republicans dared to grab the third rail and got fried. They got little credit for efforts to cut Medicare spending or impose reforms such as managed care on beneficiaries.

Instead, Republicans were hammered by Democrats for attempting to dismantle the popular programs and are now best remembered for two government shutdowns.

But they set some important precedents.

This year, Democrats and Republicans in the Senate have boldly proposed that upper-income beneficiaries pay for more of their Medicare benefits. And they also suggested raising the age of eligibility for Medicare to 67 from 65.

The senior lobby, most notably the American Association of Retired Persons, is already trying to kill the proposals. They may even be successful. But over the long term, these are the kind of reforms that experts say will be needed to keep Medicare, Social Security and other programs from bankrupting the government.

Without attention, retirement costs would eat up an unsustainable percentage of each nation's total output of goods and services. Retirement and health care costs are projected to soak up 45 percent of Germany's output of goods and services by 2030.

Retirement costs in Italy would eat up 109 percent of that country's total economic output.

Some countries are pursuing solutions other than sacrifice.

For instance, Canada is allowing more young immigrants to enter the country, figuring they will get jobs and pay taxes to sustain the government's programs. Adopting policies to stimulate each nation's economy also are important.

For the United States, that means making good on promises to balance the budget, improve education and provide a favorable climate for business investment.

And educating beneficiaries and taxpayers about the problem is important, too. But let's skip the spin and shoot straight.

LANGUAGE: ENGLISH

LOAD-DATE: July 1, 1997

HEADLINE: WRITING RESUMES;
FOR THE GOLDEN YEARS;
CLEVELAND SENIOR JOB FAIR GIVES OLDER WORKERS A CHANCE;
TO BEAT BOREDOM AND MAKE MONEY WITH A SECOND CAREER

BYLINE: By MARCUS GLEISSER; PLAIN DEALER REPORTER

BODY:

Seventy-year-old Phil Pampus of Euclid has had a long career in sales ranging from insurance to furniture. Now he is looking for a second career "to keep active and make a few bucks."

Pampus, who now works part time selling table covers, is in the vanguard of a small but growing trend in the nation's labor force: people beyond what is traditionally considered retirement age who are actively working or seeking work.

Pampus joined about 300 older workers yesterday at the Cleveland Senior Job Fair in the City Hall rotunda. The fair was sponsored by the American Association of Retired Persons and Cleveland's Department of Aging.

Like Pampus, most participants said their main goal was to stay active, to fight off boredom and make some money while working part time.

Among the 48 companies recruiting at yesterday's job fair were home health-care companies, banks, retailers and services that train nannies. The employers - ranging from Huntington Bank to Willcare, a home health-care company - said they covet older workers because of their dependability and strong work ethic.

From 1980 to 1994, the number of people 65 and older who were working grew from 3.1 million to 3.9 million, according to Census Bureau statistics.

In March, about 3.8 million people 65 and older were in the labor force - including 117,000 who are unemployed and looking for work, according to the U.S. Bureau of Labor Statistics. That's a fraction of the 31.7 million people 65 and older in the United States, but the number of those looking to re-enter the labor force continues to grow, the bureau reports.

Numbers alone do not tell the whole story, said Glenn Northup, 66, director of the AARP Senior Community Service Employment Program in Washington, D.C.

"More people at 65 or older need the money," he said, adding that his statistics show more than 6 million people over 55 live at or below the poverty line.

"And the trend toward business downsizing is a major factor." Northup, a 24-year AARP veteran, said he has also observed rising numbers of older people coming to his office in search of work. Northup said that, as a side benefit, older people who work seem to live longer.

"It may be a psychological need to feel productive, but we find fewer strokes or heart attacks among those who keep working," he said.

The AARP recently completed a study of 500 men and women 65 and over to

compare blood-pressure readings when they started to work and a year later. The study found that, in most cases, blood pressure dropped as the workers developed self-esteem on the job, Northup said.

The older job seekers at the City Hall job fair say they crave the independence as well as the additional income.

Nora Perry, 77, who once worked as a maid supervisor at two area hotels and an apartment complex, is now looking for part-time work as a housekeeper. "I like to be independent and I like to travel, and you can't do that living only on Social Security," she said.

Dick Butler, 60, is not yet eligible for Social Security, but he says he's bored doing odd jobs and needs more money. He has worked in technical sales, carpentry and electrical work, and he wants part-time work - up to 30 hours a week - "at any of the many things I like to do."

Like the other recruiters interviewed, Highland Heights-based Willcare has found that older workers are valuable as part-time and full-time employees.

Many of yesterday's job seekers said they enjoy helping people with their health problems, because many of them have experience helping their own family members with such needs as bathing and dressing, said Lucy Roark, Willcare personnel recruiter.

And then there are those older workers who want to recapture skills such as working at a cash register and handling money.

"We talked to at least 30 people," Kimberly Thwing, a staff officer at Huntington Bank in Cleveland. "We found many interested in training programs and willing to learn new procedures."

GRAPHIC: PHOTOS BY: PHAEDRA SINGELIS / PLAIN DEALER PHOTOGRAPHER; Photo 1: Cleveland's Senior Job Fair brought companies and some 300 retirees together in the City Hall rotunda yesterday.; Photo 2: You can't be independent and travel, living solely on Social Security, said Nora Perry, 77.

LANGUAGE: ENGLISH

LOAD-DATE: May 23, 1996

LEVEL 1 - 1 OF 1 STORY

Copyright 1996 The Times-Picayune Publishing Co.
The Times-Picayune

May 26, 1996 Sunday, THIRD

SECTION: PRIMELIFE; Pg. 3

LENGTH: 1142 words

HEADLINE: RETIREMENT ON SHAKY GROUND

BYLINE: BY JAMES GAFFNEY Special Sections staff writer

BODY:

"Oh, Lord, won't you buy me

a Mercedes Benz?

My friends all drive Porsches

I must make amends"

- Janis Joplin

Somewhere down the line the baby boom generation got a bad rap.

And it may get worse.

"We figure 18 million baby boomers are at risk of being poor when they're older," Fernando Torres-Gil, Department of Health and Human Services Assistant Secretary on Aging, said in a telephone interview.

For many the popular image of the boomer is that of idealist-hippy-turned-yuppy-greedhead, hellbent on conspicuous consumption even while up to their lava lamps in red ink.

Yet, while the first wave of boomers who turn 50 this year will probably enjoy higher incomes in retirement than the current older-adult population, millions of others may be left in the economic dust, according to the American Association of Retired Persons' Public Policy Institute in a report titled "Aging Baby Boomers: How secure is their economic future?"

In fact, the gap between the haves and have-nots amongst boomers will widen over the next 20 years creating a permanent underclass.

"A majority of boomers could live reasonably well in retirement because of a history of good jobs and decent income," the AARP report states. "Yet many, such as persons with a limited education, a sporadic work history, divorced women, widows and disproportionately large numbers of African American and Hispanics may face a retirement of economic deprivation and insecurity."

"Race is a critical variable in determining retirement coverage because

blacks and Hispanics have lower incomes, lower levels of retirement and pension coverage, and therefore are less able to save and plan ahead," Torres-Gil said.

The report also found that second-wave boomers (born from 1955 to 1964) will benefit more from a strong economy and, conversely, suffer more from a stagnant economy in part because they have more working years ahead of them than older, first-wave boomers (born between 1946 and 1954).

Moreover, all boomers have some chance of experiencing a poor economic future because many of the risks they face are "random."

For many boomers, though, that future is now. For example, among white households in their pre-retirement years (51 to 61), the top 5 percent have saved \$300,000, the typical family has \$17,000 and the bottom fifth has \$800 or less, according to a study by economist James Smith of the nonprofit Rand research organization, headquartered in Santa Monica, Calif. Credit card debt per household exceeds \$3,000.

Smith's study was based on national surveys for the National Institute on Aging.

By comparison the typical black and Hispanic household has under \$500 in financial assets; four out of 10 have no household wealth.

Household wealth includes equity in homes, the value of business and other real assets, and all financial assets including savings accounts and stocks and bonds.

Not surprisingly, the income disparity between the richest and poorest boomers and the emergence of a permanent underclass within the ranks of the nation's largest cohort group could spell economic calamity in the future. That is, unless lawmakers take strident and bipartisan steps to strengthen the traditional safety nets of retirement: Social Security, pensions and Medicare.

But that doesn't appear likely any time soon.

Numerous studies in recent years have warned that Social Security and the pension system are on shaky ground. Meantime, the third leg of the financial stool, private wealth and savings, may be even more bleak. Savings rates in the United States overall are significantly less than that in Japan and Europe, at a time when most analysts contend that gray-haired boomers will require large savings in addition to pensions and Social Security to maintain their standard of living in retirement.

In fact, nearly one out of 10 boomers born in 1946 hasn't even started saving for retirement yet, according to a recent survey by Sun Cities developer Del Webb Corp. And 13 percent believe they will never be able to retire.

"Baby boomers are frustrated and anxious because they're not able to save as much as they want," Torres-Gil said.

Moreover, they've pretty much given up on government help - almost half of the survey respondents said they believe that less than 10 percent of their retirement income will be from Social Security.

Undoubtedly, the Woodstock generation will have to make some attitude adjustments in their old age.

"As a cohort, (boomers) will have to put off retirement and work longer than other past generations," said Richard Boebel, assistant professor of finance at

Tulane University's A.B. Freeman School of Business.

Add to this formula the fact that boomers in general have had fewer children, and later in life, which will result in a shortage of workers in the labor force paying taxes into Social Security and Medicare coffers to support the bulging demographic balloon of retiring boomers.

Already the strain is being felt.

The Medicare Hospital Insurance Trust Fund, for example, which pays hospital bills for the nation's 37 million older and disabled adults, lost \$4.2 billion last year - the first time it's lost money since 1972, according to a recent Treasury department report.

Making matters worse is that the health care program for the nation's retirees, signed into law in 1965 by President Lyndon Johnson and still his most popular Great Society program, is spiraling out of control at an unpredictable rate few can fathom.

Recently, the Congressional Budget Office announced that the Medicare trust fund will run out of money by 2001 - a year earlier than previously estimated - with a \$28.9 billion deficit. The deficit will reach \$331.6 billion by the end of fiscal 2005 - about \$100 billion worse than the cumulative deficit forecast by the budget office one year ago.

The latest data shows the fund is in worse shape than administration officials had projected last year and provides fresh evidence that Medicare remains a budget problem of immense and growing proportions, say experts.

Observers point out, however, that there is little chance the trust fund - which contains \$120 billion - will run out of money because Congress would surely act to rescue the program before it was seriously threatened. But, as Tulane's Boebel noted, any rescue plan will invariably have to include hiking payroll taxes on working-age adults, slashing benefits, requiring beneficiaries to pay more for services, or a combination.

"Failure to reform the system now, while we still can," warns Thomas Schatz, president of Citizens Against Government Waste, a private advocacy group, "will mean devastating benefit reductions for retiring boomers or outrageous payroll tax hikes for their children and grandchildren."

LEVEL 1 - 1 OF 217 STORIES

Copyright 1999 Time Inc.
Fortune

July 19, 1999

SECTION: FEATURES/LONG LIFE; Pg. 102

LENGTH: 2957 words

HEADLINE: Hell No, We Won't Go!;

Surprising demographic trends raise a tough question: Will the elderly live so long that society can't cope?

BYLINE: David Stipp

BODY:

Baby-boomers have ushered in most every major trend over the past 50 years. But it was their grandparents who initiated the most radical demographic change of the past half-century--a dramatic decline in death rates at older ages. In fact, about the time boomers were rambunctiously burning draft cards, their elders quietly began nullifying actuarial tables. By 1990 there were more than 1.5 million Americans age 85 and over who wouldn't have been alive if death rates had stayed at the 1960 level.

Extrapolating this trend, demographer James Vaupel has made a bold prediction: Half of the girls and a third of the boys recently born in the developed world will live to be 100. Vaupel similarly expects millions of former flower children to defy federal population forecasts and make good on their old chant, "Hell no, we won't go!"--he has projected there could be nearly 37 million boomers age 85 and over by 2050, more than twice the government's best guess. That would mean a much higher proportion of senior citizens nationwide than Florida has today. It would also mean that we should now be considering far more stringent policies to prevent future economic crises than are on the table, from raising the retirement age to trimming Social Security and Medicare entitlements.

Vaupel, who heads Germany's Max Planck Institute for Demographic Research, is more optimistic than most demographers about the prospects for longer life. But he's no shallow visionary. A few years ago many of his colleagues scoffed when he challenged a grim canon about aging. It holds that death rates rise exponentially with age in adult animals, including humans--the older you are, the theory goes, the more likely you are to die. Aided by other researchers, he marshaled data on everything from Swedish women to Medflies to show it ain't so; for good measure, he threw in supporting data on the death rates of old cars. The team demonstrated that mortality can plateau and, strangely, even drop among the very old--as if the Fates were nodding off after a long wait.

Vaupel sees this "mortality deceleration" as a subplot of a grand mystery that has preoccupied demographers for over a decade: Why have the elderly been

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living longer than their forebears since about 1970? Some of the causes are obvious, such as the averting of millions of fatal heart attacks by blood-pressure drugs widely used since the 1960s. But many experts on aging feel that such well-known factors can't explain the trend's surprising speed and breadth. For instance, the number of centenarians in various developed countries has doubled every decade since the 1960s.

Casting about for explanations, some demographers theorize that deep, little-understood changes are afoot that will help sustain the trend for decades. Vaupel has stuck his neck out farther than most by proposing that the aging process may actually slow down in very old people, an idea based on his mortality-deceleration work. That particular idea remains highly controversial. But Vaupel's bullish view that longevity gains will continue apace is widely shared. Indeed, many demographers are now more bullish than the Social Security Administration, which projects that the decline in old-age death rates will slow to a crawl early in the next century.

The bulls' predictions raise a burning issue: If we receive a gift of extra years, will it turn out to be a Pandora's box filled with hobbling diseases? For most of this century death rates and the prevalence of chronic diseases among the elderly have dropped in tandem. But "we're balanced on a razor's edge," says Eric Stallard, a demography professor at Duke University. If medical advances make mortality fall faster than disease, we'll wind up spending costly extra years in nursing homes. Or worse: "We may face the gruesome prospect of poor, disabled, homeless older Americans living out the end of their lives on city streets and in parks," warns Edward L. Schneider, dean of gerontology at the University of South California.

Vaupel, a U.S. citizen reared on Long Island, was one of the first researchers to issue wake-up calls about the new demography of aging, as he calls it. The implications came home to him when his daughter, Anna, was born in 1984. Musing about her future, he calculated that if the death-rate declines observed since the 1960s continued, girls in her "birth cohort" could expect, on average, to become centenarians. Since then, he's moderated his forecast some. "My best guess now is that 50% of newborn white females in the developed world will celebrate their 100th birthdays," he says.

Vaupel's projections are still far more bullish than the Social Security Administration's midrange forecasts, which are typically used to project Uncle Sam's liabilities. According to the agency, U.S. life expectancy, or average life span at birth, will rise to about 82 years in 2075, from about 76 now. That's roughly a fourth as much as it rose over the past 75 years.

As Vaupel has projected, a heftier rise in life expectancy would increase by tens of millions the number of boomers who keep on trucking after 2030. That has huge fiscal implications. Federal medical payouts for individuals over 84 are more than twice as high, on average, as for those between 65 and 69. If numbers aren't your cup of tea, just picture the budget circa 2030 as a snake trying to swallow a cow.

Like all long-term projections, forecasts of mortality patterns over the next century are no more than educated guesses. Underscoring this uncertainty, some demographers flatly disagree with Vaupel and predict the bull market for longevity gains is about to run out of steam. The most vociferous of these

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bearish experts is the University of Chicago's Jay Olshansky. An affable man known for ripping the bulls in technical journals, Olshansky cheerfully argues that we'll all go under in a timely way from the federal government's point of view--he feels the Social Security Administration's intermediate projections are about right. "The practical limit for life expectancy hasn't changed at all. It's still about 85," he declares.

Pushing life expectancy into the upper 90s, which some bulls think is possible over the next century, would be like human sprinters getting up to cheetah speed--the human body isn't physically capable of doing that in the foreseeable future, Olshansky contends. When sparring with Vaupel in the Boston Globe a few years ago, he projected that his daughter, Jessica--who happens to be the same age as Vaupel's daughter--was born into a generation with a life expectancy of 85.

At the bottom of the bull-bear rift are radically different views on the future and the past. The bulls are more sanguine about medical science's ability to keep the Reaper in retreat in coming decades. They envision major life expectancy gains from advances such as artificial organs and medicines that cure major killers, and they're willing to entertain hopes of drugs that will someday slow the aging process--an idea that's gaining credibility, thanks to the discovery of gene mutations that can dramatically extend lower animals' life spans (see part one of this series, "Live a Lot Longer," in the fortune.com archive). The bulls also have a rosier view of the forces that have raised U.S. life expectancy by a whopping 30 years since 1900. One bullish theory posits that good health early in life has cut the risk of various chronic diseases of aging. That implies gains against such diseases should continue well into the next century, regardless of what high-tech medicine does for us.

The developed world's life expectancy pattern over the past century falls roughly into three parts. Before 1950 it rose quickly, thanks to the advent of antibiotics, better nutrition, and other factors that mainly reduced mortality among the young--in particular, infant mortality. After much of that low-hanging fruit was plucked, life expectancy gains slowed and seemed to plateau in the 1950s and '60s (see charts). Then around 1980 it became apparent that life expectancy was rising again. This time, though, stellar gains were occurring among older people.

Before that pattern rose like an uncanny phoenix from worldwide death statistics, many experts believed we were approaching an intractable biological limit on life expectancy, says John Wilmoth, a demographer at the University of California at Berkeley. In 1978, for instance, a prominent French demographer argued that life expectancy couldn't exceed 73.8 years for men and 80.3 years for women. Four years later life expectancy in Japan barreled through the presumed male limit, and in 1985, through the female one.

The idea of an 85-year limit remains viable. Japanese women, the current world champs for longevity, have a life expectancy of about 83. Further, "the rise in life expectancy is decelerating," says Olshansky.

That's true. The pre-1950 gains were faster than the gains after 1970, thanks to factors that cut infant mortality. But the bulls say Olshansky is focusing on the wrong indicator. What's important, they argue, are falling death rates at older ages, a profound change that's largely masked when factored into life

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expectancy averages--just as broad stock-market indexes barely registered skyrocketing Internet stock prices, which some observers feel is a harbinger of fundamental economic change.

In a 1994 study, Vaupel and colleagues showed that average annual mortality declines at age 80 and above actually sped up between 1970 and 1990 in nine developed nations. Such data, says Berkeley's Wilmoth, suggest that "if there's a biological limit to human longevity, we're not getting close to it yet."

As Vaupel racked up debating points, French centenarian Jeanne Calment emerged as the bulls' Michael Jordan. "When she got to 115, the naysayers [about continuing death-rate declines among the aged] said she probably wouldn't live another year," says Stallard, the Duke professor. The awesome little old lady blew right on by--she died in 1997 at age 122 and five months.

"I have been strongly impressed by the life of Madame Calment," wrote Berkeley demographer Kenneth Wachter shortly before her death. Among other things, he said, Calment had helped convince him that mortality really does decline among the very old--just as Vaupel had said.

But while Vaupel has convinced colleagues that mortality deceleration is real, its cause remains a subject of heated debate. Bears like Olshansky argue that the phenomenon is a trivial statistical artifact--death rates, which tend to rise as the weaker members of a population die off, slow when only a robust few remain. Indeed, he notes, "the death rate for people over 120 was zero shortly before Jeanne Calment died"--she was the only one in that age category. Vaupel acknowledges that this "heterogeneity of frailty" among aging individuals might explain mortality deceleration. On the other hand, he says, it might also involve "behavioral and physiological changes with age."

Consider automobiles, he says. Using car-registration data, which show when autos are no longer in use and presumed dead, Vaupel demonstrated that death rates among Toyotas and Chevrolets tend to plateau after about a decade of use--their mortality curves resemble the ones for Medflies and people. This is partly due to heterogeneity of frailty--lemons die fast, leaving nonlemons to age more gracefully. But it's also likely, says Vaupel, that "older cars are repaired, and driven less frequently and more carefully. As cars age, their owners may also age and become more stolid and responsible." By analogy, "it's possible some of the mortality deceleration we've seen is due to some slowing of the aging process at higher ages"--an effect perhaps tied to good genes and a knack for preserving the old bod.

Unimpressed by all this, Social Security officials for years have ignored outsiders' recommendations, including Vaupel's, to issue more bullish mortality projections. Because of the agency's conservative mortality forecast, a 2.2% payroll tax increase that it estimates is needed to keep its trust fund actuarially sound through 2073 is more than 30% below what it should be, estimates Ronald D. Lee, an influential Berkeley demographer regarded as a moderate. Some demographers say privately that the agency is under pressure to maintain its cautious stance, lest its projections force policymakers to consider politically untenable tax hikes.

Not true--politics doesn't affect the Social Security Administration's forecasts, asserts Harry Ballantyne, the agency's chief actuary. Its

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intermediate forecast, he adds, recently was deemed "well within the range considered reasonable" by 41 experts convened by the Society of Actuaries, a professional group.

A flap in Canada, however, showed how hard it is for government actuaries to insulate themselves from politics. Last August, Bernard Dussault, Canada's chief actuary, was fired while preparing a report on the fiscal health of his government's retirement fund. Dussault charged that he was dismissed after refusing an order to alter a figure in the report that would have embarrassed the government--an assertion disputed by his former boss, who told reporters that Dussault was fired because of "management differences." In December, Dussault's replacement concluded the pension plan remained strong and workers wouldn't have to pay more--just as they had been promised earlier by the Finance Minister.

Projecting Medicare costs raises even thornier issues than do Social Security forecasts, including the one we care about most: If we live longer, will our extra years be spent in good health?

A 1997 study at Duke offered good news: Disability rates among Americans over 64 dropped, on average, 1.3% a year between 1982 and 1994. Even better, the gains against the Reaper's vanguard ofimps were growing--after declining 1.1% a year until 1989, disability fell an astonishing 1.5% annually over the next five years.

Predictably, the bulls and bears disagree about this. No one doubts that medical advances, such as cardiac-artery bypass operations to ward off disabling heart attacks, played a role. Healthier lifestyles clearly did too--men who exercise, keep their weight down, and don't smoke apparently postpone the onset of "functional disability" by about five years, compared with couch potatoes who smoke, according to a study last year by Stanford University researchers.

But there's sharp disagreement about whether the gains are the beginning of a long-term trend. Pushing life expectancy past 85 with medical advances gives us "manufactured time," says Olshansky. It may merely shift "the burden of senescence" to costlier chronic diseases--a person may avoid a fatal heart attack at 75, say, only to die at 85 after an eight-year struggle with Alzheimer's disease. He adds that new diseases of aging may appear as we smash into "hazards lurking in the older regions of the human life span." Such hazards may include harmful genes that come into play only late in life, like the one that causes Huntington's disease, a fatal brain disorder whose symptoms don't appear until midlife.

At this point in the debate, the bulls usually trot out some of their most heartening and surprising data: Chronic-disease risks among the elderly appear to be dropping in part because of improved nutrition and fewer infections early in the century. British researcher David Barker, for instance, has published studies indicating that low birth weight, a sign of possible fetal malnutrition, increases the risk of heart disease and other late-life disorders. An analysis of records kept by the Union Army pension program, set up in 1862, showed that early-life infections among Civil War veterans predisposed them to higher risk of heart-valve disease, clogged arteries, and other diseases of aging.

The bulls see the latter study, reported in December by Massachusetts

Institute of Technology economist Dora Costa, as a slam dunk. "Chronic diseases shouldn't necessarily be thought of as part of the natural process of aging," Costa concluded. If she's right, baby-boomers may well age more gracefully than earlier generations, since antibiotics let them grow up with fewer serious infections.

The bulls note that boomers have at least two other things going for them: Over a fourth of them attained a bachelor's degree or higher, which is strongly correlated with healthier lifestyles--a recent study on smokers who had heart attacks, for instance, showed that nearly 90% of college grads quit afterward, while only 10% of those with less than a high school education did. And because boomers are expected to live longer, medical costs during the last year of life, when a person's Medicare expenses typically soar, may actually drop. A 1993 study showed that average final-year spending totals \$ 15,500 for people who die between 65 and 74, ages at which doctors are willing to try heroic measures, compared with less than \$ 9,000 for those who die after 89.

The final score in our momentous game of life and delayed death is still very much up in the air. Vaupel, for one, is optimistic about the outcome--he believes better health at older ages is largely driving the mortality declines after 65, so our average life spans and "health spans" will continue to rise in tandem. For his part, Olshansky says that to increase health spans, "we urgently need to put more resources into attacking diseases that cause frailty and disability." On that point, at least, the bulls quite agree.

BOX STORY:

A new science of aging explores the population explosion among senior citizens.

PART 2 of a three-part series

GRAPHIC: COLOR PHOTO: PHOTOGRAPH BY JEAN PIERRE FIZET--SYGMA, THE VERY OLDEST: Jeanne Calment of France, age 117 in this photo, holds the record for human longevity. She died two years ago at 122.; B/W PHOTO: ROBERT RICCI--GAMMA LIAISON, COLOR PHOTO: DAG ALVENG, THE BULL: Demographer James Vaupel predicts that his daughter, Anna, born in 1984, has about a 50% chance of living to age 100.; COLOR PHOTO: ANNA CURTIS, THE BEAR: Jay Olshansky thinks longevity gains will level off; he predicts his daughter, Jessica, has a life expectancy of about 85.; COLOR PHOTO: J.P. LAFFONT--SYGMA, GOLDEN OLDIES: One theory holds that aging slows in very old complex systems--like classic cars and people.; THREE COLOR CHARTS: FORTUNE CHART/SOURCE: JAMES W. VAUPEL, Death Takes A Holiday A canon of aging science used to be that death rates grow exponentially with age. But recent studies show that death rates--in people, Medflies, and even cars--sometimes decline among the very old.; COLOR CHART: FORTUNE CHARTS/SOURCE: U.S. CENSUS BUREAU, OLD RUSH, The number of centenarians in the U.S. is expected to continue doubling each decade. And the ranks of the very old will swell across the board. 1950 2,300, 1960 3,300, 1970 4,800, 1980 15,000, 1990 28,500, 2000 72,000, Projected 2050 834,000; COLOR CHART: FORTUNE CHARTS/SOURCE: U.S. CENSUS BUREAU, [See caption above] People per 100,000 of population expected to reach each age group, by decade of birth

LEVEL 1 - 6 OF 217 STORIES

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NBC News Transcripts

SHOW: NBC NIGHTLY NEWS (6:30 PM ET)

June 13, 1999, Sunday

LENGTH: 634 words

HEADLINE: OLDER AMERICANS INTERESTED IN STAYING A PART OF THE WORKFORCE

ANCHORS: LEN CANNON

REPORTERS: BETTY ROLLIN

BODY:

LEN CANNON, anchor:

IN FOCUS this evening, the growing number of older Americans who keep working after reaching retirement age. NBC's Betty Rollin has our report.

Mr. JIM DEVINE (Former Retiree): I'm looking for a putter. My putter is so old-fashioned.

BETTY ROLLIN reporting:

Jim Devine, an engineer by profession, takes some interest in his golf game. He just doesn't want to spend the rest of his life playing it.

Mr. DEVINE: At 65, I decided that I would retire and put in for the benefits and so forth, and--but I was not good at retiring.

(To man) As I mentioned, there's more than one...

ROLLIN: And so he did what more and more retirees are doing: using his old skills, he got a new job in environmental protection for the state of New Jersey. Devine is 72 now, and outside of a bad knee, he's in good health and works four days a week, with a pleasant difference he says, from the old days.

Mr. DEVINE: I was more aggressive then. I was always trying to get ahead. And I'm more relaxed now. I just do the jobs as they come to me. If they need extra help, I'll do that, too. But I don't go really looking for it.

ROLLIN: So, the ambition is gone?

Mr. DEVINE: It's gone.

ROLLIN: But not the fun?

Mr. DEVINE: The fun is still there.

ROLLIN: Compared to a life of leisure, work in general is more fun for many

seniors.

Professor PHYLLIS MOEN (Cornell University): Men who work in their 70s after retirement tend to be less depressed, more satisfied, less bored, feel more productive.

ROLLIN: A major reason more elderly people like Jim Devine can work is that they're living longer and healthier than ever before. As we approach a new century, thanks largely to modern medicine, life expectancy in America is up to 76 years, compared to 47 years at the turn of the last century. And today, once you make it to 65, you have better than a 40 percent chance of reaching 85 and beyond. The great majority of Americans still prefer to spend their elderly years at leisure, but a survey of baby boomers indicates a possible change. Eighty percent said they intend to work full or part time after age 65. Even now, a small but growing number of people are working in later life, even into their 70s. 1.7 million Americans 70 or older worked at least part time last year, up from 1.3 million in 1990. Most of them are not only healthier, but better educated and have higher household incomes than nonworkers.

Prof. MOEN: These people want to work, and they want some extra money, but they're really working because they want to remain active and socially engaged.

ROLLIN: Unless they're women and in lower-skilled jobs. Most older women, many of the widowed, don't have the kind of work history that leads to good pension and Social Security benefits that men have.

Ms. MARY MORRA (Part-Time Worker): Boys? Both boys?

ROLLIN: Seventy-two-year-old Mary Morra says she enjoys the contact with people here at this supermarket in Bronxville, New York.

Ms. MORRA: Still raining hard outside?

ROLLIN: But, with a sick husband at home, she says she needs work in order not to have to depend on her children.

Ms. MORRA: Some of them want to help me, but they have their own families. If I really, really had to, they would be there.

ROLLIN: But you like to be...

Ms. MORRA: But I like to be on my own. I like to do it myself.

ROLLIN: Food Emporium is one of a number of companies that has gone out of its way to find elderly workers.

Ms. MAUREEN McLOUGHLIN (Director, Human Resources): They're very dependable. They usually come in before their scheduled time, and they tend to have greater longevity on the job. So, they really make one of the perfect part-time workers for us.

ROLLIN: The part-time aspect suits both employers and these elderly workers, who insist on having more of a balance between their jobs and the rest of life, a life they see as enriched by work. Betty Rollin, NBC News, Trenton, New Jersey.

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Futurist

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LENGTH: 3469 words

HEADLINE: The centenarians are coming!!

BYLINE: Wagner, Cynthia G

BODY:

Headnote:

The remarkable achievement
of centenarians isn't just the
fact that they've made it to
100; it's that they've made
living beyond 100 seem a
worthwhile goal.

Jeanne Calment was 13 years old when a Dutch painter named Vincent van Gogh came to her home town, Arles, in the south of France in 1888. A century later, she could still remember him: "Very ugly, ungracious, impolite, crazy. I forgive him. They called him 'the Nut.'"

Both van Gogh and Calment have become world famous-van Gogh, for painting pictures that people pay millions of dollars for, and Calment, for becoming the world's oldest person.

Jeanne Calment was born in 1875, before the Eiffel Tower was built. She was both van Gogh's contemporary and, a century later, ours. When she died in 1997 at age 122, she had broken all human longevity records.

But her record may not last long. Centenarians-people living to age 100 and beyond-are on the rise. Counting the Superold

Centenarians as a group are not easy to count. For one thing, it is difficult to verify cases of exceptional longevity; sloppy historians and ambiguous records may inadvertently add years to an individual's life because he or she was given the same name as an older relative who had died. People allegedly living to 150 years and beyond in the Russian Caucasus were discredited when many were found to be using birth certificates of aunts and uncles with the same names, according to preeminent centenarian researcher Thomas Perls, director of

the New England Centenarian Study at Harvard Medical School.

(Photograph Omitted)

Captioned as: Opposite: Jeanne Calment lived 122 years, 164 days-the longest confirmed life-span in history-before passing away in 1997. Her birth certificate, dated February 21, 1875, earned her a place in the Guinness Book of Records, bringing worldwide fame.

Until recent years, there haven't been enough centenarians to count separately from other senior citizens. Now, global record keepers such as the United Nations Population Division are raising the bar: "Elderly" now means "85 and older," rather than merely "65 and older," reflecting the swelling ranks of people nearing the century mark. Today, a 65-year-old must live 57 more years to catch up with Jeanne Calment.

The U.N.'s 1998 World Population Revision, released last October, included for the first time the numbers of octogenarians (people aged 80-89), nonagenarians (90-99), and centenarians (100 and older). (Yet to make it into the statisticians' books are decacentenarians-persons in their 110s-and dodecacentenarians-those in their 120s, like Jeanne Calment.)

"In 1998, around 135,000 persons in the world are estimated to be aged 100 or over," the Population Division reported. "The number of centenarians is projected to increase 16-fold by 2050 to reach 2.2 million persons." Research on Centenarians

The rapid growth in the number of centenarians has been a neglected phenomenon, but researchers are now showing interest, according to Michel Allard, Victor Lebre, and Jean-Marie Robine, co-authors of the case study Jeanne Calment: From Van Gogh's Time to Ours. Allard is a physician and gerontologist, Lebre was Calment's physician and friend, and Robine is a demographer.

France began studying centenarianism seriously in 1989 when the IPSEN Foundation, a nonprofit organization specializing in longevity research, began a major epidemiological study, the authors report.

"Madame Jeanne Calment was one of a small group of centenarians," Allard, Lebre, and Robine write. "For example, in 1953, there were scarcely 200 centenarians in her native France; in 1988, the number exceeded 3,000. At the time, nothing, or almost nothing, was known about them. However, they foreshadow the emergence of a new stratum of the population, illustrating a more and more probable, almost certain future, both individual and collective. Today, the number is over 6,000."

The U.S. Census Bureau estimates nearly 66,000 Americans now over age 100, compared with about 3,500 in 1900. Entertainer George Burns died in 1996 shortly after turning 100; the Delany sisters became bestselling authors (Having Our Say) well after entering their second century of life; legendary theater director George Abbott worked into his 90s and, at age 106 in 1994, advised on the revival of his hit musical Damn Yankees; he died at 107.

(Photograph Omitted)

Captioned as: Athlete Ben Levinson, age 103, practices a shot put at the 1998 Nike World Masters Games. Studies show that persons of extraordinary age tend to experience a slower aging process than others and that, if they make it past their 90s, most enjoy good health until the very end of life.

Centenarians' personal stories were collected for *Centenarians: The Bonus Years*, a 1995 book by Lynn Peters Adler, founder of the Arizona Centenarian Program and the National Centenarian Awareness Project. While the book celebrates the achievement of long life, Adler notes that the centenarians are not just "our living links to the past," but also pioneers and role models for future centenarians: "Hopefully, the models of centenarians here will give assurance that such longevity is becoming more possible and often desirable, as well as raise thought-provoking issues to be addressed for and by future centenarians."

Decreasing Mortality Rates

Mortality rates have fallen almost everywhere in the world during the twentieth century, according to Joseph Chamie, director of the U.N. Population Division's Department of Economic and Social Affairs. Improved public health, nutrition, and medical breakthroughs such as the development of antibiotics and vaccines are all part of the twentieth century's reduction of mortality. One observer credits plumbers more than doctors for humans' increased survival rates, as improved sanitation has reduced the incidence of infectious diseases.

Economic progress, in general, helps people live longer, as evidenced by the higher mortality rates in less-developed regions: Major exceptions to the global success story include Africa, where HIV/AIDS is taking a devastating toll, and eastern Europe, where declining economic conditions since the breakup of the Soviet Union have thwarted attempts to improve life expectancy and death rates.

Genetics may help explain why certain individuals live longer than others. The Calment family clearly lived well in Arles, with four generations proving resilient against food shortages, plagues, and other privations between 1700 and 1900. The researchers conclude, "Two factors are evident: a greater longevity and a vigor in this family."

Gender also is a factor, as women tend to outlive men in general. The United Nations reports that there are nearly two women to every man above the age of 80; among centenarians, the ratio is four to one. The good news for men is that those who survive into their 100s tend to retain better mental function than their female peers, according to Harvard's Thomas Perls.

Lifestyles of the Superold There does not seem to be a single, one-lifestyle-fits-all formula for centenarianism, but people who live a long time tend to make life worth living. Strict diets and fitness regimens may make you healthier and thus improve your chances for living longer, but such programs are not for everyone. The current "world's oldest person," Sarah Clark Knauss (118) of Allentown, Pennsylvania, reportedly feasts on chocolates, pretzels, and potato chips and shuns vegetables. Her advice for longevity is not to worry about your age. Jeanne Calment smoked in moderation, but finally quit of her own accord when she was 117 (offering hope that it is never too late for anyone to quit smoking). She drank port (vintage only, please) and enjoyed chocolates. She married and outlived her husband; she also outlived her one child.

On the other hand, American centenarians Sadie and Bessie Delany never married. Bessie (who died at 104 in 1995) was quoted, "When people ask me how we've lived past 100, I say, 'Honey, we never married; we never had husbands to worry us to death.'" Indeed, a low level of "worry," or stress, is a strong marker in successful agers, as is a facility for coping with stress when it does come about. As Centenarians author Lynn Adler observes, "People who reach 100 are not quitters."

(Photograph Omitted)

Captioned as: Cambridge University graduate Molly Maxwell holds a picture of herself in her youth. In 1997, she became the oldest person to receive a Cambridge degree (age 103), 80 years after leaving the university.

Centenarians also exercise their minds: The Delany sisters, black women in post-slavery America, both attended college, as did their eight brothers and sisters; Bessie became a dentist and Sadie (who died this year at age 109) became a highschool teacher in an era when most women stayed home.

Education and the desire to keep on learning throughout life are two factors associated with longevity in general. Education is an important sociodemographic factor because it increases individuals' chances for a higher economic and health status. Now, researchers at the Charles A. Dana Foundation in New York and at the Harvard Medical School are working with centenarians to learn what the impacts of brain health are on aging. Brain autopsies of centenarians have revealed a remarkable lack of the physical ravages of Alzheimer's disease and dementia, according to Margery Silver of Harvard's New England Centenarian Study. "It has been common thinking that dementia is inevitable with old age. That isn't so," she says.

Harvard researcher Thomas Perls postulates that this puzzling good brain health among centenarians may be a "survival of the fittest" phenomenon; since Alzheimer's claims the lives of its victims in their 80s and early 90s, those who reach their late 90s are likely to hang on to their superior mental faculties for years to come.

Life-Span vs. Life Expectancy Perls points out that life-span and life expectancy are two very different things. Average life expectancy refers to how long individuals are expected to survive given the circumstances of their birth-and this number has soared in the twentieth century from an average of about 45 years to 63 for men and nearly 68 for women worldwide, according to U.N. figures. Life expectancy remains low in less-developed countries-51 years for men, 53 for women-but is higher in more developed countries-71 for men, 78 for women.

Life-span, on the other hand, refers to the maximum potential age of human beings; that is, the age they may reach if their lives are not taken by disease or misadventure. While life expectancy has clearly increased, life-span has not. The maximum life-span remains about 120 years. As science learns more about the aging process, researchers hope to develop techniques to slow or even reverse the effects of aging. Already, observation of centenarians has shown them to have slower rates of biological aging.

Perls notes the association of late motherhood with longer lives: "As we reviewed the pedigrees of a number of our centenarian subjects living in the suburban Boston area, we came across a substantial number of women who had children in their 40s," he wrote in *Scientific American* (January 1995). "There was even one that had a child at the age of 53 years. This struck us as unusual given that maternal age greater than 40 is a relatively rare event.... However, a history of older maternal age among our centenarian subjects made sense to us since aging relatively slowly is a likely necessary characteristic of achieving extreme old age and women who do so should be able to bear children at an older age."

(Photograph Omitted)

Captioned as: Centenarian advocate Lynn Peters Adler (center), chats with 103-year-old Merle McEathron (right) and 102-year-old Lenore Schaeffer, the world's oldest competitive ballroom dancer.

(Photograph Omitted)

Captioned as: Jeanne Calment meets the press on the occasion of her 121st birthday. "I waited 110 years to become famous," she once said.

Perls concluded that "it is not the act of having a child in your 40s that promotes long life, but rather it is an indicator that the woman's reproductive system is aging slowly. A slow rate of aging would therefore bode well for the woman's subsequent ability to achieve very old age."

So slowing down the aging process would seem to be a key in extending the human life-span-the potential outer limits of human aging. A new branch of health science has emerged around the concept of anti-aging, finding the genetic keys to slowing or reversing the aging process. While some researchers, such as Harvard's Thomas Perls and colleagues, focus on understanding the genetic makeup of centenarians, others are looking for genetic fixes for the rest of us, such as the work on telomeres by researchers at the University of Texas Southwestern Medical Center and elsewhere. Telomeres are the protective caps on the ends of chromosomes that normally shorten with cell division; researchers believe that resupplying cells with the enzyme telomerase will rebuild the telomeres and rejuvenate older cells-thus extending the human life-span indefinitely.

Rethinking Old Age Aging itself is not a disease; it is the aging process that leads to death. Among centenarians-the survivors of the ravages of the aging process-death tends to come quickly, with shorter periods of disability. A study in 1995 by James Lubitz of the Health Care Financing Administration showed that death is far less costly among the very old: The last two years of life for those who died at 70 averaged \$ 22,600 in medical expenses, compared with just \$ 8,300 for centenarians.

"The research implies, happily, that as the oldest old become more numerous, they may not become a massive drain on the economy," Perls says. "Counter to prevalent theories of aging, many people in their late 90s or 100s lead active, healthy lives. If they represent a 'survival of the fittest' cohort, the time may have come to abandon our past perceptions of our oldest citizens."

And aging baby boomers have been a driving force in a societywide health and

fitness trend for the past few decades that may pay off. Says Perls, "People used to say, 'Who would want to be 100?' Now they're realizing it's an opportunity." Centenarians

as Time Travelers? Just as Jeanne Calment connected us to the nineteenth century, future centenarians will connect us to the twenty-second. Madame Calment's biographers offer this scenario:

"Let's now imagine that a little girl is born in 1999: If she reaches the same age as Madame Calment, she will live to the year 2122. By then, living conditions, hygiene, medicine (preventative and curative), lifestyles, behavior, and genetics (why not?) will have progressed and she will easily live 10% longer-not just 122 years, but 135-which will take her to the year 2135. What a prospect! She might be your child or grandchild, but we know neither who nor where, only that she will see a third of the twenty-second century."CG

Sidebar:

Emerging Issues in an Aging Society Many businesses will benefit from the growing number of elderly in the population. There will likely be increasing demand for golfing, cruises, drugs and health services of all kinds, eyeglasses, hearing aids, and telemetry bracelets for absent-minded elderly who wander off and need to be located.

Many products will be redesigned to better fit with elderly needs: There will be more easygrip doorknobs, phones with bigger buttons, larger-sized type in books and magazines, bigger traffic signs, and longer "yellow" lights

Reversal of Trend Toward Early Retirement? One growing issue is the rapid reduction in the retirement age. In 1890, about 68% of Americans over 65 continued to work. This dropped to 56% in 1920, then 41% in 1950. By 1970, only 25% of people over 65 worked, and that number was cut to 12.2% in 1980. In 1993, only 10.9% of Americans over 65 were still on the job. Social Security, pensions, and personal savings have encouraged people to retire early. When the early retirement trend is combined with the trend toward greater longevity, the result is a growing challenge to government and private retirement programs. A likely result is that the trend toward early retirement will reverse, and more people over 65 will remain in the work force.

Intergenerational Issues May Heat Up The extension of the life-span is raising a number of important issues:

Women in their 60s are now able to have babies thanks to advancing science. Older parents may be less able to care for children and are more likely than younger parents to die or become incapacitated.

Elderly retired people are consuming an increasing share of government funds. Must working adults with young children support older people who are still capable of working but choose not to?

Euthanasia and assisted suicide are increasingly tolerated. How should society respond? "Deadbeat kids"-children who evade supporting their elderly parents-may join "deadbeat dads" as a focus of social opprobrium. Children may become angry as their idle parents fritter away the children's hoped-for

inheritance. Scarcity of resources will lead to more rationing of services and hard choices: Should a heart transplant be given to a wealthy 85-year-old or a 40-year-old with five children to support?

Conflicts will intensify between the needs of the elderly and the needs of the workplace. Caregivers will feel torn. Results may include absenteeism, interrupted workdays, decreased productivity

Workers may express growing anger about taxes they must pay to support retirees. A proposal in Singapore would give a worker two votes against one for a retiree. -Graham T.T. Molitor Graham T.T. Molitor is vice president of the World Future Society and president of Public Policy Forecasting, 9208 Wooden Bridge Road, Potomac, Maryland 20854. Telephone 1-301-762-5174.

Sidebar:

Resources on

Centenarians and Longevity Books: Jeanne Calment: From Van Gogh's Time to Ours by Michel Allard, Victor Lebre, and JeanMarie Robine. W.H. Freeman, 41 Madison Avenue, New York, New York 10010. 1998. 136 pages. \$ 22.95. (Save 30% by ordering from www.wfs.org/specials.htm.) Centenarians: The Bonus Years by Lynn Peters Adler. Foreword by Walter M. Bortz II. Health Press, P.O. Drawer 1388, Santa Fe, New Mexico 87504. 1995. 348 pages. Illustrated. \$ 25. (Save 30% by ordering from www.wfs.org/specials.htm.) The Longevity Strategy: How to Live to 100 Using the Brain-Body Connection by David Mahoney and Richard Restak. The Dana Press/John Wiley & Sons, Inc. 1998. 250 pages. Paperback. Available from the Futurist Bookstore for \$ 14.95 (\$ 13.50 for Society members), cat. no. B-2157.

Reversing Human Aging by Michael Fossel. Quill. 1996. 307 pages. Paperback. Available from the Futurist Bookstore for \$ 16 (\$ 14.50 for Society members), cat. no. B-1999. Stopping the Clock by Ronald Klatz and Robert Goldman. Keats Publishing. 1996. 369 pages. Available from the Futurist Bookstore for \$ 22.95 (\$ 20.95 for Society members), cat. no. B-2002.

Cheating Death by Marvin Cetron and Owen Davies. St. Martin's Press. 1998. 224 pages. Available from the Futurist Bookstore for \$ 21.95 (\$ 19.95 for Society members), cat. no. B-2119.

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* "Extended Life-Spans: Are You Ready to Live to 120 or More?" by Marvin Cetron and Owen Davies, THE FUTURIST (April 1998).

* "The Conquest of Disease: It's Almost within Sight" by William B. Schwartz, THE FUTURIST (January 1999).

Organizations: The New England Centenarian Study, Harvard Division on Aging, 643 Huntington Avenue, Boston, Massachusetts 02115. Web site www.med.harvard.edu.

National Centenarian Awareness Project, Attention Lynn Peters Adler, 3135 East Marshall Avenue, Phoenix, Arizona 85016. Web site www.adlercentenarians.com. American Medical Association, Web site www.ama-assn.org.

American Academy of AntiAging Medicine, 1510 West Montana Street, Chicago, Illinois 60614. Web site www.llongevity.com.

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LEVEL 1 - 29 OF 217 STORIES

Copyright 1999 Lakeland Ledger Publishing Corporation
The Ledger (Lakeland, FL)

April 11, 1999, Sunday

SECTION: Health '99; Pg. 11

LENGTH: 478 words

HEADLINE: ELDERLY POPULATION EXPECTED TO SKYROCKET; IN THE NEXT CENTURY, AS MANY AS ONE IN FIVE PEOPLE IN THE U.S. WOULD BE ELDERLY, COMPARED TO ABOUT ONE IN EIGHT NOW

BYLINE: ROBIN WILLIAMS ADAMS The Ledger

BODY:

LAKELAND -- The United States is on the brink of the aging boom already being felt in Florida, the state with the highest percentage (19 percent) of elderly residents.

People 65 and older could total 80 million nationwide by the middle of the next century.

As many as one in five people in the U.S. would be elderly, compared to about one in eight now, according to U.S. Census Bureau predictions.

More than 3 million people are 85 or older now. By 2050, those "oldest old" are expected to total 19 million.

Life expectancy increased from an average of 47 years for people born in 1900 to 76 years for people born in 1991.

Improved death rates, caused by better medical care, modify at-birth predictions.

Someone who was 50 years old in 1996 could expect to live 27.1 more years if male or 31.5 years if female, said Frank Hobbs, a demographer for the U.S. Census Bureau.

The outlook gets better with age.

People who were 65 in 1996 could expect to live 15.7 more years if they were men and 18.9 years if they were women.

"The longer you live, the longer you can expect to live, on average," Hobbs said. "You've escaped that previous risk of dying."

The average person born in 1991 who reaches 65 can expect to live until 82.

That's based on death rates in 1991. If those rates keep improving, Hobbs said, so will expected years of life.

The Ledger (Lakeland, FL) April 11, 1999, Sunday

Living longer means more chance of living with chronic illness, such as diabetes or arthritis, said Dr. Carl Eisdorfer, chairman of the University of Miami's psychiatry department and a past president of the American Society on Aging.

"We are keeping more people alive, but we're keeping a lot of them alive who have chronic illnesses and would

PLEASE SEE POPULATION, 18

Population

CONTINUED FROM 11

have died," he said.

The sheer number of seniors -- and their range of age from 65 to older than 100 -- makes blanket predictions about their needs difficult.

"The well elderly, or 'welderly,' as we call them, this group is so vastly different than the frail elderly," said Dr. Bruce Rybarczyk, a Chicago clinical psychologist who specializes in older adults.

"We're increasingly wising up to the idea that the generalizations you can make about a 75-year-old are less accurate than at any other age."

LIFE EXPECTANCY AT AGE 65

As overall life expectancy increases, so does the number of years people can expect to live after reaching age 65. Growth has been less noticeable, however, for black men.

SOURCES: National Center for Health Statistics, Centers for Disease Control, American Association for World Health

AMERICANS AGE 65 AND OVER

From 34 million in 1997, roughly 1 in 8 of the nation's population, the number of senior citizens is expected to reach 80 million, about 1 in 5, by 2050.

SOURCES: Bureau of the Census, American Association for World Health

GRAPHIC: MARK WILLIAMS/The Ledger: Graphs; Charts

LANGUAGE: ENGLISH

LOAD-DATE: April 13, 1999

LEVEL 1 - 10 OF 217 STORIES

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Las Vegas Review-Journal (Las Vegas, NV)

May 23, 1999 Sunday, FINAL EDITION

SECTION: K; Pg. 1K

LENGTH: 710 words

HEADLINE: GRAY MATTER

BYLINE: John Hughes

BODY:

By John Hughes
Associated Press

WASHINGTON _ Computer companies are catching on _ grandma and grandpa want to surf the World Wide Web.

With the number of older Americans on the Internet growing, but only one out of four people older than age 60 owning computers, high-tech companies are viewing the elderly as one of the last largely untapped U.S. markets.

Companies including Microsoft, Intel and America Online are distributing instructional videos on computer use, sponsoring training seminars and creating Web sites that cater to the elderly.

"We're finding a lot of interest," said Craig Spiezle, director of Microsoft's senior initiative. "Clearly, the growth is huge."

People older than 50 are the second-fastest-growing group on the Internet, trailing only 16-to-24-year-olds, according to a study last year by Nielsen Media Research and CommerceNet.

But the older-than-50 group accounts for only 17 percent of the people who use the Internet, the study found. And only 25 percent of people older than 60 own a computer, compared with 50 percent for the rest of the population, according to research by Microsoft and the American Society on Aging.

So company officials are taking action.

Intel, the world's largest chip maker, has donated equipment for computer training centers and sponsored Web sites catering to the elderly.

America Online, the nation's largest Internet provider, has boosted its content directed at seniors, forming partnerships with groups such as the American Association of Retired Persons.

IBM offers computer discounts to members of the nonprofit computer training group SeniorNet. On-line auctioneer e-Bay has run print ads aimed at older customers, and computer maker Gateway has sponsored training seminars and run television ads.

"We see it as a very important market," said Greg Lund of Gateway. "These are people who are not only not scared of technology, they're willing to experiment with it."

Microsoft is conducting one of the more high-profile efforts, spending millions of dollars and hiring a five-person staff dedicated to reaching older customers. The Redmond, Wash., software giant announced this month that it is shipping 10,000 free videos to community groups to introduce seniors to computers.

Last week, Microsoft issued guidelines for businesses and Web site developers on

how to make Internet sites more user-friendly and accessible for seniors. Cynthia Creighton, a 57-year-old former civil servant taking a computer training class in Portland, Ore., said she uses her computer to send poems to her daughters.

"It's been a marvelous way to keep in touch," she said.

Company officials see something else _ profits. Industry officials say many of the elderly have the key essentials to becoming computer owners _ time and money.

The most recently available census data, from 1993, showed that 70-to-74-year-olds, followed by 65-to-69-year-olds, were the wealthiest age groups in America based on net worth.

'High-tech companies are definitely catching on,' said Mark Carpenter, online communications director for the AARP. "Lots of times when you are 22 years old you can't afford to buy a personal computer."

Frances Jette, 59, of Hudson, N.H., was only one week into her first computer training class earlier this year when she plunked down \$ 1,500 to buy her first computer. Now she has set up a Web page to sell the clocks she makes, and she checks it each day for orders.

"It was much well worth it," she said.

Industry experts say the increasing focus on the elderly has been a natural progression. With their children and grandchildren often already plugged in, seniors see computers as valuable for checking stock prices, getting health and travel tips and, above all, exchanging e-mail and digital photographs.

"They want to keep in touch with their family and friends," said Laura Fay of SeniorNet in San Francisco.

And with retirees living longer, and often viewing Social Security as insufficient to support them, they also want training for a new job.

Ed Kelley, who signed up with Green Thumb Inc., a nonprofit group that provides computer training to the low-income elderly, said, "There's absolutely nothing in here I can't learn."

LANGUAGE: ENGLISH

LOAD-DATE: May 25, 1999



FactSheets™

CHILDREN AND MEDIA VIOLENCE

Want to do
something?
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Did you know?

- By the time an average child (one who watches two to four hours of television daily) leaves elementary school, he or she will have witnessed 8,000 murders and over 100,000 other acts of violence (Huston, 1992).
- By the time a child is 18 years old, he or she will witness (with average viewing time) 200,000 acts of violence including 40,000 murders (Huston, 1992).
- On an individual day, there are about 5 to 6 violent acts per hour on prime-time television, and 20 to 25 acts of violence on Saturday morning children's television (Gerbner, 1990).
- Weekly, in the United States, this adds up to about 188 hours of violent programs or about 15% of the program time (Huesmann, 1992).
- Cable can add to the violence by rerunning old shows and the showing of more violent new ones.
- Many popular R-rated films available on video contain far more violence than seen on commercial television.
- Children with VCR or cable access have seen more R-rated films than their non-cable, non-VCR counterparts (Huston, 1992).
- Since 1955, reports, studies and congressional testimonies by experts in the field have overwhelmingly concluded that "the mass media are significant contributors to the aggressive behavior and aggression related attitudes of many children, adolescents and adults" (Surgeon General, 1972; National Institute of Mental Health, 1982; American Psychological Association, 1992).
- Two large meta analysis studies have been conducted on research linking media violence to aggression in children. One looked at 67 studies and over 30,000 subjects (Anderson, 1977). The other looked at 230 studies and almost 100,000 subjects (Hearold, 1986). Both supported a number of conclusions: "First, there is a positive association between televised violence exposure and behavior. Second, exposure to violent programming not only increases aggressive behavior, but is associated with lower levels of prosocial behavior."

What's Happening:

The National Association for the Education of Young Children focuses on three effects of media violence on children:

- "Children may become less sensitive to the pain and suffering of others" (desensitization).
- Children "may be more likely to behave in aggressive or

- harmful ways towards others" (increases aggression).
- Children "may become more fearful of the world around them" (Mean World syndrome).

Many factors in the portrayal of media violence contribute to its affect on children and teens (Comstock, 1994):

- Is the aggressive behavior on screen rewarded or punished?
- Is the violence gratuitous, is it justified or does it lack consequences?
- Does the viewer identify with the aggressor or the victim?
- Does the viewer become engaged with or aroused by the violence on screen?
- What is the age of the child? Although violence affects children of all ages, middle childhood, ages 8 to 12, seem particularly sensitive.
- What is the total amount of television watched?
- Does the child see television violence as realistic?

SOURCES

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Ruby Shamir
05/27/99 11:27:02 AM

Record Type: Record

To: Jeffrey A. Shesol/WHO/EOP@EOP

cc:

Subject: media violence

In addition to the information below -- which is mostly on television violence -- I also have some research on the effects Media Violence. I am looking for more stuff.

Violent Programming Content

- The level of violence in prime time television has remained at approximately five violent acts per hour, while the level of violence in children's Saturday morning programming is much higher at about 20 to 25 violent acts per hour. [Big World, Small Screen, 1992]
- Children witness 8,000 murders and 100,000 other assorted acts of violence by the time they graduate from elementary school, and an estimated 200,000 acts of violence, and 16,000 simulated murders, by the time they are teens. [AMA Fact Sheet from Center for Media and Public Affairs, 1992]
- According to the 1996 National Television Violence Study, a three-year study financed by the cable industry, the majority of television programs (57%) contained some violent content.

The National Television Violence Study also found that perpetrators of violent acts on television go unpunished 73% of the time and that 25% of violent acts on television involve the use of a handgun. Children's programs posed special concerns because they were least likely to depict the long-term consequences of violence (5%) and they portray violence in a humorous fashion 67% of the time.

37TH STORY of Level 2 printed in FULL format.

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MAY 4, 1999, TUESDAY

RH statement

SECTION: IN THE NEWS

LENGTH: 1773 words

HEADLINE: PREPARED STATEMENT OF
L. ROWELL HUESMANN

PHD

PROFESSOR OF PSYCHOLOGY AND COMMUNICATION STUDIES,
UNIVERSITY OF MICHIGAN

PAST PRESIDENT,

INTERNATIONAL SOCIETY FOR RESEARCH ON AGGRESSION

BEFORE THE SENATE COMMITTEE ON COMMERCE, SCIENCE AND TRANSPORTATION

SUBJECT - VIOLENT VIDEOS AND VIOLENT VIDEO GAMES:

WHY DO THEY CAUSE VIOLENCE AND WHY DO THEY SELL?

"MARKETING VIOLENCE TO CHILDREN."

BODY:

Distinguished Senators, Ladies, and Gentleman. I am Rowell Huesmann, Professor of Psychology and Communication Studies at the University of Michigan and Past-President of the International Society for Research on Aggression.

I have been studying violent behavior for over 25 years. In 1972 I was the author of one of the major studies that influenced the Surgeon General to issue a warning about media violence. In 1982 I wrote the NIMH 10 year follow-up report on the influence of media violence, and most recently I was the primary author of the Human Capital Initiative report on violence. It is a pleasure to be here today, although the message I want to deliver is not a pleasant message. My message is this. The telecommunications revolution of the 20th Century has created a new environment for our children. In this environment television, movies, videos, internet displays, and electronic games have assumed central roles in socializing our children while parents have lost influence. For better or worse the mass media are having an enormous impact on our children's values, beliefs, and behaviors. In particular, the widespread portrayal of violence in these media is having an insidious effect on increasing violence in society. Now this is not to say that these media are the primary cause of violence in our society. That is not to say that other factors ranging from neurophysiological predispositions, to parenting failures, to impoverished environments, to violent environments, to the profusion of guns in our society are not important. They are! But so is the amount of violence to which are children are exposed in these old and new mass media every day. Not every child who watches a lot of violence or plays a lot of violent games will grow up to be violent. Other forces must converge as they did recently in Colorado. But just as every cigarette you smoke increases the chances that some day you will get lung cancer, every exposure to violence increases the chances that some day a child will behave more violently than they otherwise would.

Hundreds of studies have confirmed that exposing our children to a steady diet of violence in the media makes our children more violence prone. The psychological processes involved are not mysterious. Children learn by

key roles
in socializing
kids

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just like
cigarettes

simple:
kids learn
by what
they observe

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observing others, and the mass media provide a very attractive window for these observations. Children imitate the behaviors they see, and children deduce what is right and wrong from what they see. Children hone their ideas and behaviors by practicing them, by rehearsing them over and over. Games that reward success are a very good way to get children to practice a lot. As children observe more violence, imitate it, practice it, are rewarded for it, they become more tolerant of violence. For many children the greater tolerance for violence that they learn from the mass media and the scripts for violent behavior that they acquire from the mass media will not be very noticeable because of other countervailing factors in their lives. But media violence does affect every child.

↑ tolerance for violence

Are these effects temporary? Unfortunately no. Research shows that the more aggressive child usually grows up to be the more violent adult. Adults may be resistant to influence from the games they play as adults and the movies and TV they watch, but their adult social habits have been affected by what they saw when they were children.

If this is true, you may say, why are there so many voices that won't accept these truths? Well, if one does not want to believe a truth about human behavior, one can always focus on exceptions. No single study is ever perfect particularly in the social sciences. A few researchers have made a reputation for themselves by burying the body of studies indicting media violence under a sand pile of supposed flaws, and a myth has arisen that there is not a consensus among researchers. In actuality there is a clear consensus that media violence stimulates aggression. But media violence is an enormous financial success. Violence attracts viewers and players, and violence can be a cheap way to attract. Even well intentioned people find it difficult to sacrifice concrete financial success for abstract moral advancement.

myth

How much violence are our children exposed to in the electronic media? The average 7th grader is watching about 4 hours per day of TV and 60% of those contain some violence. The average 7th grader is playing electronic games at least 4 hours per week, and 50% of those games are violent. But these are only averages; many, many children are exposed to much more media violence every week. Because of demographic influences, many of the children who are exposed the most to media violence are also exposed the most to real violence around them. The two combine to reinforce children's views that the world is a hostile place in which one should retaliate if disrespected. The violence around the child constantly primes aggressive ideas. When angered, frustrated, stressed, it is perfectly understandable that a child exposed to all this violence behaves more violently.

★
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game
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violent

Why so attractive to children? Why do they watch violent shows and movies? Why do they buy violent games? Again psychologists understand this pretty well. We know children are attracted to visual action and movement and changes in scene and music and sound. Non-violent shows like Sesame Street deliberately include these to attract children, but violent shows generally naturally have these characteristics. Children also find it pleasurable to be excited and then to have the excitement resolved the way a suspenseful scene with danger to a protagonist will do. Violent games reward children who kill more. For violent movies, if children identify with the hero, and they are likely to, they receive vicarious pleasure when the hero saves the world by killing the bad guy and being rewarded for his actions.

Is violence cheaper to produce? Violent and non-violent video games probably cost about the same on the average. However, violent TV shows appear to be a little cheaper to produce on the average. Statistics collected by Professor James Hamilton at Duke show that from 1991-93 the average production fee per hour for network prime time TV programming was about \$1,094K for non-violent

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shows and \$998K for violent shows - about 10% cheaper in other words. A more telling statistic may be the finding that, among shows with some violence, those with more violence actually cost less. Each additional violent act seems to reduce the cost about \$1,500.

Of course, these are only averages. A very high quality series such as 'The Cosby Show' with high priced actors, directors, and writers will cost a lot more than the average violent show. If it is a hit, it may produce enormous profits. If not, it may produce enormous deficits. What really counts is the ability of a video game to attract enough buyers to cover its cost, and the ability of a TV show to attract enough sponsors to cover its cost or to attract enough syndicated buyers.

Here, a variety of marketing issues become important. For example, foreign markets become very important in these calculations, and generally violent shows and games are easier to sell in foreign markets than other kinds of games or shows. Studies by James Hamilton at Duke have shown that the probability of a show being exported successfully increases about 16% if it is violent.

The bottom line is that children and adults are attracted to violence; and so violence makes money. But does that mean that nothing should be done? Imagine that the Surgeon General is presented with a series of studies testing the harmfulness of a widely distributed product that many children love. There are an extensive number of wellcontrolled experiments spanning more than 30 years showing unambiguously that using this product immediately causes symptoms of a particular affliction in children. There are an equally large number of field surveys showing that the incidence of this affliction is always higher among people who use this product regularly. There are a smaller number of longitudinal studies that have examined the long term effects of this product in different environments. Most have shown at least some evidence of detrimental long term effects though it has been difficult to disentangle the product's long term effects from the effects of those personal factors that cause people to use this product. Of course, not everyone who uses this product gets the affliction, and not everyone who gets the affliction has used the product. However, it is known from these studies that if a child with a 50% risk for getting this affliction uses the product, the best estimate of the child's risk for getting the affliction rises to between 60% and 70%. Moreover, the affliction is very difficult to cure, usually persists over years, and may well result in death. The processes by which the product produces the affliction have become well understood by scientists doing research in the area. Furthermore, the incidence of the affliction has grown dramatically since the product was first introduced. However, because the product is attractive to many people and even addictive, it has achieved tremendous economic importance. What should the Surgeon General do? As you probably recognize, this has been exactly the situation for cigarettes and lung cancer. But this has also been exactly the situation for media violence and violent behavior. The level of statistical evidence is actually just about the same in both cases - a correlation of about .3 between using the product and the affliction. Not everyone who uses the product gets the affliction, and other factors contribute to the affliction, but we know using the product increases the statistical risk. In both cases the Surgeon General long ago concluded that the substances were harmful and issued warnings about them. In both cases economic interests with large investments in the product feel threatened and have disparaged the research and opposed interventions to reduce use of the product.

So what is the solution? Better parental control, more government control, telling children not to be affected by violent video games or media

using
product
↑ risk

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violence, electronic chips that cut out violence, boycotting sponsors and manufacturers of violence? All of these may be needed. Each society needs to make decisions based on what is best for it. But it is time for every society to take this problem seriously and act. The future of our children and society is too precious for us not to act.

END

LANGUAGE: ENGLISH

LOAD-DATE: May 5, 1999



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MAY 17, 1999 ISSUE

THE STATE OF THE PALESTINIANS

Watch and Learn

by Gregg Easterbrook

Yes, the media do make us more violent.

Millions of teens have seen the 1996 movie *Scream*, a box-office and home-rental hit. Critics adored the film. The Washington Post declared that it "defly mixes irony, self-reference, and social wry commentary." The Los Angeles Times hailed it as "a bravu ra, provocative send-up." *Scream* opens with a scene in which a teenage girl is forced to watch her jock boyfriend tortured and then disemboweled by two fellow students who, it will eventually be learned, want revenge on anyone from high school who crossed them. After jock boy's stomach is shown cut open and he dies screaming, the killers stab and torture the girl, then cut her throat and hang her body from a tree so that Mom can discover it when she drives up. A dozen students and teachers are graphically butchered in the film, while the characters make running jokes about murder. At one point, a boy tells a big-breasted friend she'd better be careful because the stacked girls always get it in horror films; in the next scene, she's grabbed, stabbed through the breasts, and murdered. Some provocative send-up, huh? The movie builds to a finale in which one of the killers announces that he and his accomplice started off by murdering strangers but then realized it was a lot more fun to kill their friends.

Now that two Colorado high schoolers have murdered twelve classmates and a teacher--often, it appears, first taunting their pleading victims, just like celebrity stars do in the movies!--some commentators have dismissed the role of violence in the images shown to the young, pointing out that horrific acts by children existed before celluloid or the phosphor screen. That is true--the Leopold-Loeb murder of 1924, for example. But mass murders by the young, once phenomenally rare, are suddenly on the increase. Can it be coincidence that this increase is happening at the same time that Hollywood has begun to market the notion that mass murder is fun?

For, in cinema's never-ending quest to up the ante on violence, murder as sport is the latest frontier. Slasher flicks began this trend; most portray carnage from the killer's point of view, showing the victim cowering, begging, screaming as the blade goes in, treating each death as a moment of festivity for the killer. (Many killers seek feelings of power over their victims, criminology finds; by reveling in the pleas of victims, slasher movies promote this base emotion.) The 1994 movie *Natural Born Killers* depicted slaying the helpless not only as a way to have a grand time but also as a way to become a celebrity; several dozen onscreen murders are shown in that film, along with a discussion of how great it makes you feel to just pick people out at random and kill them. The 1994 movie *Pulp Fiction* presented hit men as glamour figures having loads of interesting

fun; the actors were mainstream stars like John Travolta. The 1995 movie *Seven*, starring Brad Pitt, portrayed a sort of contest to murder in unusually grotesque ways. (Screenwriters now actually discuss, and critics comment on, which film's killings are most amusing.) The 1995 movie *The Basketball Diaries* contains an extended dream sequence in which the title character, played by teen heartthrob Leonardo DiCaprio, methodically guns down whimpering, pleading classmates at his high school. A rock soundtrack pulses, and the character smiles as he kills.

The new Hollywood tack of portraying random murder as a form of recreation does not come from schlock-houses. Disney's Miramax division, the same mainstream studio that produced *Shakespeare in Love*, is responsible for *Scream* and *Pulp Fiction*. Time-Warner is to blame for *Natural Born Killers* and actually ran television ads promoting this film as "delirious, daredevil fun." (After it was criticized for calling murder "fun," Time-Warner tried to justify *Killers* as social commentary; if you believe that, you believe *Godzilla* was really about biodiversity protection.) Praise and publicity for gratuitously violent movies come from the big media conglomerates, including the newspapers and networks that profit from advertising for films that glorify murder. Disney, now one of the leading promoters of violent images in American culture, even feels that what little kids need is more violence. Its Christmas 1998 children's movie *Mighty Joe Young* begins with an eight-year-old girl watching her mother being murdered. By the movie's end, it is 20 years later, and the killer has returned to stalk the grown daughter, pointing a gun in her face and announcing, "Now join your mother in hell." A Disney movie.

stats

One reason Hollywood keeps reaching for ever-more-obscene levels of killing is that it must compete with television, which today routinely airs the kind of violence once considered shocking in theaters. According to studies conducted at Temple University, prime-time network (non-news) shows now average up to five violent acts per hour. In February, NBC ran in prime time the movie *Eraser*, not editing out an extremely graphic scene in which a killer pulls a gun on a bystander and blasts away. The latest TV movie based on *The Rockford Files*, which aired on CBS the night of the Colorado murders, opened with a scene of an eleven-year-old girl in short-shorts being stalked by a man in a black hood, grabbed, and dragged off, screaming. *The Rockford Files* is a comedy. Combining television and movies, the typical American boy or girl, studies find, will observe a stunning 40,000 dramatizations of killing by age 18.

diff. b/w what
adults + kids
shd see

In the days after the Colorado slaughter, discussion of violent images in American culture was dominated by the canned positions of the anti-Hollywood right and the mammon-is-our-God film lobby. The debate missed three vital points: the distinction between what adults should be allowed to see (anything) and what the inchoate minds of children and adolescents should see; the way in which important liberal battles to win free expression in art and literature have been perverted into an excuse for antisocial video brutality produced by cynical capitalists; and the difference between censorship and voluntary acts of responsibility.

The day after the Colorado shooting, Mike De Luca, an executive of New Line Cinema, maker of *The Basketball Diaries*, told *USA Today* that, when kids kill, "bad home life, bad parenting, having guns in the home" are "more of a factor than what we put out there for entertainment." Setting aside the disclosure that Hollywood now categorizes scenes of movie stars gunning down the innocent as "entertainment," De Luca is correct: studies do show that upbringing is more determinant of violent

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behavior than any of her factor. But research also clearly shows that the viewing of violence can cause aggression and crime. So the question is, in a society already plagued by poor parenting and unlimited gun sales, why does the entertainment industry feel privileged to make violence even more prevalent?

studies
show
link

Even when researchers factor out other influences such as parental attention, many peer-reviewed studies have found causal links between viewing phony violence and engaging in actual violence. A 1971 surgeon general's report asserted a broad relationship between the two. Studies by Brandon Centerwall, an epidemiologist at the University of Wisconsin, have shown that the postwar murder rise in the United States began roughly a decade after TV viewing became common. Centerwall also found that, in South Africa, where television was not generally available until 1975, national murder rates started rising about a decade later. Violent computer games have not existed long enough to be the subject of many controlled studies, but experts expect it will be shown that playing such games in youth also correlates with destructive behavior. There's an eerie likelihood that violent movies and violent games amplify one another, the film and television images placing thoughts of carnage into the psyche while the games condition the trigger finger to act on those impulses.

Leonard Eron, a psychologist at the University of Michigan, has been tracking video violence and actual violence for almost four decades. His initial studies, in 1960, found that even the occasional violence depicted in 1950s television--to which every parent would gladly return today--caused increased aggression among eight-year-olds. By the adult years, Eron's studies find, those who watched the most TV and movies in childhood were much more likely to have been arrested for, or convicted of, violent felonies. Eron believes that ten percent of U.S. violent crime is caused by exposure to images of violence, meaning that 90 percent is not but that a ten percent national reduction in violence might be achieved merely by moderating the content of television and movies. "Kids learn by observation," Eron says. "If what they observe is violent, that's what they learn." To cite a minor but telling example, the introduction of vulgar language into American public discourse traces, Eron thinks, largely to the point at which stars like Clark Gable began to swear onscreen, and kids then imitated swearing as normative.

Defenders of bloodshed in film, television, and writing often argue that depictions of killing don't incite real violence because no one is really affected by what they see or read; it's all just water off a duck's back. At heart, this is an argument against free expression. The whole reason to have a First Amendment is that people are influenced by what they see and hear: words and images do change minds, so there must be free competition among them. If what we say, write, or show has no consequences, why bother to have free speech?

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Defenders of Hollywood bloodshed also employ the argument that, since millions of people watch screen mayhem and shrug, feigned violence has no causal relation to actual violence. After a horrific 1992 case in which a British gang acted out a scene from the slasher movie *Child's Play 3*, torturing a girl to death as the movie had shown, the novelist Martin Amis wrote dismissively in *The New Yorker* that he had rented *Child's Play 3* and watched the film, and it hadn't made him want to kill anyone, so what was the problem? But Amis isn't homicidal or unbalanced. For those on the psychological borderline, the calculus is different. There have, for

example, been at least two instances of real-world shootings in which the guilty imitated scenes in *Natural Born Killers*.

Most telling, Amis wasn't affected by watching a slasher movie because Amis is not young. Except for the unbalanced, exposure to violence in video "is not so important for adults; adults can watch anything they want," Eron says. Younger minds are a different story. Children who don't yet understand the difference between illusion and reality may be highly affected by video violence. Between the ages of two and eight, hours of viewing violent TV programs and movies correlates closely to felonies later in life; the child comes to see hitting, stabbing, and shooting as normative acts. The link between watching violence and engaging in violence continues up to about the age of 19, Eron finds, after which most people's characters have been formed, and video may no longer correlates to destructive behavior.

use, not
prevalence, of
guns, is ↑

Trends in gun availability do not appear to explain the murder rise that has coincided with television and violent films. Research by John Lott Jr., of the University of Chicago Law School, shows that the percentage of homes with guns has changed little throughout the postwar era. What appears to have changed is the willingness of people to fire their guns at one another. Are adolescents now willing to use guns because violent images make killing seem acceptable or even cool? Following the Colorado slaughter, The New York Times ran a recounting of other postwar mass murders staged by the young, such as the 1966 Texas tower killings, and noted that they all happened before the advent of the Internet or shock rock, which seemed to the Times to absolve the modern media. But all the mass killings by the young occurred after 1950--after it became common to watch violence on television.

When horrific murders occur, the film and television industries routinely attempt to transfer criticism to the weapons used. Just after the Colorado shootings, for instance, TV talk-show host Rosie O'Donnell called for a constitutional amendment banning all firearms. How strange that O'Donnell didn't call instead for a boycott of Sony or its production company, Columbia Tristar--a film studio from which she has received generous paychecks and whose current offerings include *8MM*, which glamorizes the sexual murder of young women, and *The Replacement Killers*, whose hero is a hit man and which depicts dozens of gun murders. Handguns should be licensed, but that hardly excuses the convenient sanctimony of blaming the crime on the weapon, rather than on what resides in the human mind.

guns
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And, when it comes to promoting adoration of guns, Hollywood might as well be the NRA's marketing arm. An ever-increasing share of film and television depicts the firearm as something the virile must have and use, if not an outright sexual aid. Check the theater section of any newspaper, and you will find an ever-higher percentage of movie ads in which the stars are prominently holding guns. Keanu Reeves, Uma Thurman, Laurence Fishburne, Geena Davis, Woody Harrelson, and Mark Wahlberg are just a few of the hip stars who have posed with guns for movie advertising. Hollywood endlessly congratulates itself for reducing the depiction of cigarettes in movies and movie ads. Cigarettes had to go, the film industry admitted, because glamorizing them gives the wrong idea to kids. But the glamorization of firearms, which is far more dangerous, continues. Today, even female stars who otherwise consider themselves politically aware will model in sexualized poses with guns. Ads for the new movie *Goodbye Lover* show star Patricia Arquette nearly nude, with

very little between her and the viewer but her handgun.

But doesn't video violence merely depict a stark reality against which the young need be warned? American society is far too violent, yet the forms of brutality highlighted in the movies and on television--prominently "thrill" killings and serial murders--are pure distortion. Nearly 99 percent of real murders result from robberies, drug deals, and domestic disputes; figures from research affiliated with the FBI's behavioral sciences division show an average of only about 30 serial or "thrill" murders nationally per year. Thirty is plenty horrifying enough, but, at this point, each of the major networks and movie studios alone depicts more "thrill" and serial murders annually than that. By endlessly exploiting the notion of the "thrill" murder, Hollywood and television present to the young an entirely imaginary image of a society in which killing for pleasure is a common event. The publishing industry, including some tnr advertisers, also distorts for profit the frequency of "thrill" murders.

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keeps violent
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*only NC-17
is enforced*

The profitability of violent cinema is broadly dependent on the "down-rating" of films--movies containing extreme violence being rated only R instead of NC-17 (the new name for X)--and the lax enforcement of age restrictions regarding movies. Teens are the best market segment for Hollywood; when moviemakers claim their violent movies are not meant to appeal to teens, they are simply lying. The millionaire status of actors, directors, and studio heads--and the returns of the mutual funds that invest in movie companies--depends on not restricting teen access to theaters or film rentals. Studios in effect control the movie ratings board and endlessly lobby it not to label extreme violence with an NC-17, the only form of rating that is actually enforced. Natural Born Killers, for example, received an R following Time-Warner lobbying, despite its repeated close-up murders and one charming scene in which the stars kidnap a high school girl and argue about whether it would be more fun to kill her before or after raping her. Since its inception, the movie ratings board has put its most restrictive rating on any realistic representation of lovemaking, while sanctioning ever-more-graphic depictions of murder and torture. In economic terms, the board's pro-violence bias gives studios an incentive to present more death and mayhem, confident that ratings officials will smile with approval.

When r-and-x battles were first fought, intellectual sentiment regarded the ratings system as a way of blocking the young from seeing films with political content, such as Easy Rider, or discouraging depictions of sexuality; ratings were perceived as the rubes' counterattack against cinematic sophistication. But, in the 1960s, murder after murder after murder was not standard cinema fare. The most controversial violent film of that era, A Clockwork Orange, depicted a total of one killing, which was heard but not on-camera. (Clockwork Orange also had genuine political content, unlike most of today's bigstudio movies.) In an era of runaway screen violence, the '60s ideal that the young should be allowed to see what they want has been corrupted. In this, trends in video mirror the misuse of liberal ideals generally.

Anti-censorship battles of this century were fought on firm ground, advocating the right of films to tackle social and sexual issues (the 1930s Hays office forbid among other things cinematic mention of cohabitation) and free access to works of literature such as Ulysses, Story of O, and the original version of Norman Mailer's The Naked and the Dead. Struggles against censors established that suppression of film or writing is wrong.

But to say that nothing should be censored is very different from saying that everything should be shown. Today, Hollywood and television have twisted the First Amendment concept that occasional repulsive or worthless expression must be protected, so as to guarantee freedom for works of genuine political content or artistic merit, into a new standard in which constitutional freedoms are employed mainly to safeguard works that make no pretense of merit. In the new standard, the bulk of what's being protected is repulsive or worthless, with the meritorious work the rare exception.

POTUS

Not only is there profit for the performers, producers, management, and shareholders of firms that glorify violence, so, too, is there profit for politicians. Many conservative or Republican politicians who denounce Hollywood eagerly accept its lucre. Bob Dole's 1995 anti-Hollywood speech was not followed up by any anti-Hollywood legislation or campaign-funds strategy. After the Colorado murders, President Clinton declared, "Parents should take this moment to ask what else they can do to shield children from violent images and experiences that warp young perceptions." But Clinton was careful to avoid criticizing Hollywood, one of the top sources of public backing and campaign contributions for him and his would-be successor, Vice President Al Gore. The president had nothing specific to propose on film violence--only that parents should try to figure out what to do.

When television producers say it is the parents' obligation to keep children away from the tube, they reach the self-satire point of warning that their own product is unsuitable for consumption. The situation will improve somewhat beginning in 2000, by which time all new TVs must be sold with the "V chip"--supported by Clinton and Gore--which will allow parents to block violent shows. But it will be at least a decade before the majority of the nation's sets include the chip, and who knows how adept young minds will prove at defeating it? Rather than relying on a technical fix that will take many years to achieve an effect, TV producers could simply stop churning out the gratuitous violence. Television could dramatically reduce its output of scenes of killing and still depict violence in news broadcasts, documentaries, and the occasional show in which the horrible is genuinely relevant. Reduction in violence is not censorship; it is placing social responsibility before profit.

The movie industry could practice the same kind of restraint without sacrificing profitability. In this regard, the big Hollywood studios, including Disney, look craven and exploitative compared to, of all things, the porn-video industry. Repulsive material occurs in underground porn, but, in the products sold by the mainstream triple-X distributors such as Vivid Video (the MGM of the erotica business), violence is never, ever, ever depicted--because that would be irresponsible. Women and men perform every conceivable explicit act in today's mainstream porn, but what is shown is always consensual and almost sunnily friendly. Scenes of rape or sexual menace never occur, and scenes of sexual murder are an absolute taboo.

It is beyond irony that today Sony and Time-Warner eagerly market explicit depictions of women being raped, sexually assaulted, and sexually murdered, while the mainstream porn industry would never dream of doing so. But, if money is all that matters, the point here is that mainstream porn is violence-free and yet risqué and highly profitable. Surely this shows that Hollywood could voluntarily step back from the abyss of glorifying violence and still retain its edge and its income.

Following the Colorado massacre, Republican presidential candidate Gary Bauer declared to a campaign audience, "In the America I want, all of these producers and directors, they would not be able to show their faces in public" because fingers "would be pointing at them and saying, 'Shame, shame.'" The statement sent chills through anyone fearing right-wing thought-control. But Bauer's final clause is correct--Hollywood and television do need to hear the words "shame, shame." The cause of the shame should be removed voluntarily, not to stave off censorship, but because it is the responsible thing to do.

Put it this way. The day after a teenager guns down the sons and daughters of studio executives in a high school in Bel Air or Westwood, Disney and Time-Warner will stop glamorizing murder. Do we have to wait until that day?

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July 17, 1999, Saturday, Late Edition - Final

SECTION: Section C; Page 1; Column 2; Business/Financial Desk

LENGTH: 656 words

HEADLINE: Gates Hits \$100 Billion Mark, More or Less

BYLINE: By AMY HARMON

BODY:

Last month, in the largest gift ever by a living person to a charitable foundation, William H. Gates, the chairman of the Microsoft Corporation, donated \$5 billion to support education and health care causes.

Yesterday, in a few hours of stock market trading, Mr. Gates's holdings surged by just about that amount, brushing \$100 billion for the first time.

The mixture of awe and dismay that has long characterized America's fixation on Mr. Gates's personal wealth was perhaps best summed up yesterday by Vincent Malgapo, a contributor to the Silicon Investor electronic discussion forums: "Bill Gates MSFT stock worth \$100 Billion right now!" read the comment, which was posted at 11:41 A.M. "WOW!"

Mr. Gates, who owns 19.8 percent, or about one billion shares, of the company he co-founded in 1975, owes his world record to the remarkable performance of Microsoft's stock. Shares of the software company climbed 5.4 percent yesterday to a record high of \$99.4375, on expectations that it will establish a separate tracking stock for its Internet properties.

The company is the first to top \$500 billion in market value. If it were a country it would have the ninth-largest economy in the world, behind Spain, which has a gross domestic product of \$553 billion.

But the ballooning of Microsoft's stock price simply does not hold the same fascination as that of its chairman's brokerage account.

"He finally did it," said Paul Saffo, director of the Institute for the Future in Menlo Park, Calif. "This is what we've all been waiting for. How much interest do you suppose it generates? I bet it's a 747 per day."

Philip Greenspun, creator of the Bill Gates Personal Wealth Clock, a Web site that continuously calculates the value of Mr. Gates's Microsoft stock, had a more pointed speculation.

"Maybe this will convince my students they shouldn't work so hard to become rich," said Mr. Greenspun, a researcher at the Massachusetts Institute of Technology's laboratory for computer science. "Because they're probably not going to be richer than Bill Gates, so they might as well do something interesting and valuable to society instead."

The New York Times, July 17, 1999

At a time of sustained economic prosperity, America's proclivity to celebrate wealth is reflected in the high marks Mr. Gates still receives in national opinion polls. And the 43-year-old executive, who lives in a \$60 million mansion on the shores of Lake Washington with his wife and two children, has recently begun to contribute more to philanthropy.

But the \$100 billion mark may also mark a change in popular perception.

"Gates has crossed a psychological marker and it's going to increase pressure on him to recycle more and more of that money through his foundations," said Ron Chernow, an economic historian. "There will be more attention focused on the extraordinarily lopsided distribution of wealth."

Of course, Mr. Gates is not the only software entrepreneur to become fabulously wealthy in recent years. Microsoft's co-founder, Paul Allen, and its chief executive, Steve Ballmer, are among the world's five richest people, along with the investor Warren E. Buffett, whose 39.9 percent stake in the investment holding company Berkshire Hathaway Inc. is valued at about \$42.5 billion, making him second to Mr. Gates.

Dozens of founders of fledgling Internet companies have become worth millions on paper in a matter of months.

And by some calculations, Mr. Gates is poorer than John D. Rockefeller, who had in excess of 2 percent of the gross national product at the peak of his wealth in 1913.

Still, it may not be long before Mr. Gates passes another milestone.

"The key is when he reaches a trillion," said Lewis D'vorkin, an executive editor at Forbes magazine, which publishes an annual list of the world's 400 richest people. "If Microsoft share price grows in the next five years as fast as it has in the last five, he hits the big one in 2004."

GRAPHIC: Photos: William H. Gates, the richest man in the world, got a little bit richer yesterday. (Reuters)(pg. C1); An aerial view of the \$60 million mansion in Medina, Wash., on the shores of Lake Washington, where William H. Gates lives with his wife, Melinda, and their two children. (Reuters)(pg. C14)

LANGUAGE: ENGLISH

LOAD-DATE: July 17, 1999

LEVEL 1 - 137 OF 141 STORIES

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July 9, 1999, Friday, Late Edition - Final

SECTION: Section A; Page 12; Column 5; National Desk

LENGTH: 303 words

HEADLINE: Upbeat Data on Crime and Youth

BYLINE: AP

DATELINE: WASHINGTON, July 8 .

BODY:

Despite fears about violence in schools, the number of children committing crimes or being hurt in them has been dropping since 1993, according to an annual Government report on the state of American children that was released today.

The report said the situation of children and teen-agers was improving and mostly hopeful, with the numbers of vaccinations and preschool enrollment up while those for teen-age smoking and pregnancies were down.

"The trend is in the right direction," said Kristin Moore, president of Child Trends, a research group. "We're sailing with the wind."

But Ms. Moore noted the absence of progress in reducing teen-age alcohol consumption or in increasing health insurance coverage.

The annual report issued by the Federal Interagency Forum on Child and Family Statistics is designed to be a broad assessment of the state of the nation's children, a collection of statistics from across the Federal Government.

Lately, much of the attention on teen-agers has dealt with violence, particularly shootings at schools. But the report found that the number of serious violent crimes committed for every 1,000 children ages 12 to 17 had declined since 1993 and was now at the lowest rate since 1986. In 1997, there were 31 such crimes for every 1,000 children as compared with 52 per 1,000 in 1993, according to the Justice Department.

Still, in 1997 there were 706,000 violent crimes involving teen-agers.

Fewer teen-agers were injured or killed in crimes, too. There were 27 victims for every 1,000 people ages 12 to 17 in 1997 as compared with 44 in 1,000 in 1993, the agency said.

Part of the decline can be traced to the overall decline in all types of crime, which is tied to the strong economy, said Margaret A. Zahn, a criminologist at North Carolina State University.

LANGUAGE: ENGLISH

LEVEL 1 - 19 OF 141 STORIES

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July 14, 1999, Wednesday, Late Edition - Final

SECTION: Section A; Page 23; Column 1; Editorial Desk

LENGTH: 619 words

HEADLINE: Asking More From Matrimony

BYLINE: By Douglas J. Besharov; Douglas J. Besharov is a resident scholar at the American Enterprise Institute and a professor at the School of Public Affairs at the University of Maryland. Andrew R. West assisted with this article.

DATELINE: WASHINGTON

BODY:

In 1986, a much-discussed study contended that a woman over 40 had a less than 1 percent chance of getting married -- or, in the words of Newsweek, she was more likely to be "killed by a terrorist."

It was a vivid phrase but an inaccurate one, it turned out. Other researchers quickly corrected the study. Women were getting married, they were just getting married later.

Now comes a new study from the National Marriage Project at Rutgers University claiming that the marriage rate has declined by roughly 43 percent since 1960. According to this report, the marriage rate of single women 15 years old and older declined to 49.7 per thousand in 1996, from 87.5 per thousand in 1960.

Once again, the demise of marriage is being exaggerated. How? Age 15 is the wrong cut-off for comparing marriage rates in 1960 and 1996, because people now just don't wed at such an early age. Since 1960, the median age of women getting married for the first time has increased by four and a half years, to 24.8 from 20.3.

To measure marriage rates accurately, most demographers today calculate the percentage of women who are "ever married." Assuming that one should not count teen-agers because so few marry, in 1960 the proportion of women 20 and older who had ever been married was 90 percent. Thirty-six years later the proportion of women who were then or had at one time been married stood at 83 percent -- only about 8 percent lower.

That's the statistic for women who get married. What about staying married? Here, the situation has worsened. Divorce rates rose sharply through the 60's and 70's. Although divorce is down slightly since its 1980 peak, about 1 marriage in 3 still fails. Moreover, remarriage after divorce or a spouse's death is way down, partly because the stigma attached to cohabitation has been substantially reduced and partly because more women can survive financially on their own.

The New York Times, July 14, 1999

To measure these combined trends, demographers calculate the percentage of women "currently married." Here, by my calculations, we can see a big change. If one accounts for later marriages and longer life spans by counting only those Americans between the ages of 20 and 74 (after age 74, too many husbands are dying to get a fair count of marriage), only 64 percent of women were currently married as of 1996, versus 76 percent in 1960.

Yes, marriage bonds are weaker than ever. And people now divorce for what, to many, seem like insubstantial reasons. Out-of-wedlock birth rates remain high, and cohabitation rates continue to climb. But this does not mean that young people have rejected marriage. If anything, they want more from marriage than ever before.

These days, young people tend to marry later, after they have completed their education and have a better idea of who they are. Because they have seen so much divorce, many want to be very sure before making such a big decision. Studies show they want marriage to be a partnership, with equality between men and women, and to be emotionally satisfying in ways never dreamed of by their parents, let alone grandparents. And they think that a bad marriage is worse than no marriage -- so they are more willing to divorce even if they have young children. Young women are also less willing to wed just because they are pregnant.

One does not have to sympathize with all these lofty aspirations (or ignore their inconsistencies) to recognize that young people aren't giving up on marriage; they are just modernizing it.

So, instead of exaggerating the death of marriage, and instead of making obsolete assumptions about when young people should marry, we should try to understand this seismic change in their behavior and attitudes.

LANGUAGE: ENGLISH

LOAD-DATE: July 14, 1999

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July 11, 1999, Sunday, Late Edition - Final

SECTION: Section 1; Page 1; Column 1; National Desk

LENGTH: 1687 words

HEADLINE: Despite Low Prestige and Pay, More Answer the Call to Teach

BYLINE: By MARY B. W. TABOR

BODY:

After years of shying away from the field, a growing number of college students, including those from elite liberal arts colleges, now say they want to be schoolteachers.

Just over 10 percent of all freshmen say they want to teach in elementary or secondary schools, according to a new survey by the Cooperative Institutional Research Program at the University of California at Los Angeles. The percentages, for 1998, the latest year available, are the highest since the early 1970's and nearly twice what they were at their low point, in 1982.

Students at some of the nation's top universities, like Harvard and Princeton, are also showing a growing interest.

Education and policy experts say these numbers reflect a shift in attitudes about teaching -- from a career plagued by low pay and low prestige to a career that is attracting smart and altruistic people.

Interest in teaching, the experts say, is being fueled by students' search for meaningful work, concern about the plight of at-risk children and a response to the national call for teachers with degrees in academic subjects, as well as in education.

"I'm seeing a significant shift toward education, toward government and public policy and community action type work," said Maureen Tobin, director of the career development center at Kenyon College, the oldest private liberal arts college in Ohio, where about 20 percent of the class of 1998 planned to become teachers.

The U.C.L.A. survey, first conducted in 1966, polls 300,000 freshmen at over 600 American colleges and universities each year about their lives and interests, including what they want to do after graduating.

The survey does not necessarily reflect actual career choices, which may change after freshman year. Still, other signs of renewed interest in teaching are appearing as well.

Applications to many of the nation's top graduate schools of education, which can also include programs in counseling, human development or psychology, are on the rise. While the number of students graduating from medical schools, law schools and business schools has dropped or held steady in recent years, the number of students earning degrees in education has increased, the National

The New York Times, July 11, 1999

Center for Education Statistics said.

The number of bachelor's and master's degrees in education rose 31 percent from 1986 to 1996 (the last year available), compared with 22 percent in other fields.

Recruiters at some teacher-placement organizations say applicant pools are steady or growing. Teach for America, for example, says it has recorded a strong increase in applications in recent years, especially from schools like Spelman College, Cornell University, the University of Michigan, Stanford University and Princeton. Last fall, Teach for America, which recruits college graduates to teach in low-income districts for a minimum of two years, received applications from 3,025 people for 500 positions, up from 2,745 applicants the year before.

"We've certainly noticed over the past two years that there is an increase in interest from college students," said Wendy Kopp, president of Teach for America.

"Part of that can be attributed to the fact that we have become more sophisticated in our recruiting efforts. But there is also a mood on college campuses right now that is conducive to people being interested in teaching. People are looking for ways to assume a significant challenge and to make a difference right out of college."

In response to the growing interest in improving the quality of teachers, many top liberal arts colleges are setting up or revitalizing teacher education programs. These programs, which provide the necessary coursework to get a teaching degree or certification, have seen a surge in enrollment as well.

At Princeton University, for example, the number of students enrolled in its teacher preparation program has risen to 25 from 5 since 1990. (The high was in 1975, when 77 students were enrolled.)

In the last 10 years, the number of students in Colby College's education and human development program has doubled, to almost 100, said Mark Tappan, who directs the program with his wife, Lyn Mikel Brown.

And Bennington College's teacher education program has grown to 24 students from 2 since its inception two years ago. The program allows students to obtain both a bachelor's degree in liberal arts and a master's in education in five years.

Rosalind A. Hoffa, an associate dean at Amherst College and director of its career center, has been watching interest in teaching grow on her campus as well.

In early 1998, after years of refusing to give credits for teacher education courses taken at nearby Mount Holyoke College, Amherst reversed itself, Ms. Hoffa said. The college is now formally helping students earn teaching credentials through the Holyoke program. To date, 35 students have asked to participate.

Many liberal arts colleges do not offer the necessary coursework and student teaching experience required by most states for certification. As a result, many graduate schools of education are reporting growing numbers of applications

The New York Times, July 11, 1999

from new college graduates with liberal arts degrees.

Harvard's Graduate School of Education, for one, has reported a 34 percent increase in applications since 1990, said Roland Hence, a university spokesman.

The number of applications to the teacher education programs at Columbia University's Teachers College has risen to more than 830 this year from 700 in 1994.

"We are getting a lot of career changers," said Barry M. Rosen, a spokesman for Teachers College. "But there is also a rise in applications from new college graduates and the average G.R.E. scores of the applicants has been going up as well."

Many career counselors and college administrators say students are responding, in part, to the national call for new teachers. The Federal Department of Education has estimated that schools will need to hire 2.2 million teachers over the next 10 years to meet a wave of retirements, rising enrollments and demands for smaller class sizes.

It is precisely that call and the desire to make a difference that has drawn students like Sarah Bertucci into teaching.

When she arrived at Princeton in the fall of 1993, Ms. Bertucci figured she would major in geology and use her passion for nature and numbers to make a name for herself doing scientific research, architecture or engineering.

"I saw myself in a nontraditional job for women," said Ms. Bertucci, who grew up in Rochester. "I did not want to be a teacher."

But that summer after freshman year, she got a job as a teacher's assistant at an alternative high school in Colorado.

"I loved the relationships with the students," she said. "I learned so much from them. It hooked me pretty fast. The minute I got back to college, I ran over to the teacher education program and said, 'Sign me up.' "

Now 23, she finished her student teaching requirements last November and is looking for a job at a school near Boston.

David Robinson, a 23-year-old graduate student from Albany, said he decided to become a teacher instead of a corporate executive after an unsatisfactory internship he had while he was a student at the University of Notre Dame.

"I just got a feeling for the corporate life and realized it wasn't for me," said Mr. Robinson, who graduated with a bachelor's degree in English literature in 1998 and is finishing up his master's at Teachers College. "I realized that it was my tutoring experiences that were the most rewarding on a personal level."

This fall, Mr. Robinson will begin teaching 9th and 10th grade English at the Bronx Leadership Academy in the South Bronx.

Still, despite indications of growing interest in teaching, the realities of the job can still be discouraging, especially in urban schools, which find it

The New York Times, July 11, 1999

hard to compete with suburban ones for new teachers.

Michael Casserly, executive director of the Council of the Great City Schools, a coalition of urban school systems, said schools in big cities can expect half of their new teachers to quit within the first three to five years as a result of stress, long hours and difficult working conditions.

"The fact that the numbers are up is a good sign," Mr. Casserly said. "The challenge for us is to draw more of those new teachers into the urban systems, where the shortages are greatest and burnout is so high."

And while teachers' salaries are rising, they still lag behind those in other fields. The American Federation of Teachers said first-year teachers made an average of \$25,735 in 1997-98. By contrast, new engineers were making about \$42,862 and those working in business administration made \$34,831.

It was in part the pay issue that derailed Jonathan W. Thatcher. Mr. Thatcher, 21, who will be a senior at Amherst this fall, decided recently to scrap his plans to become a teacher and to go instead to law school.

"It was a combination of things," Mr. Thatcher said from his home in Mechanicsburg, Pa. "Coming out of Amherst, there are heavy expectations that you are going to do something and do something big. That pressure is there."

After a minute, he added: "On a more personal level, my father lost his job several years ago and his pension is not that much. If I could make the kind of salary so that someday I could help them out if they got in a pinch, that would make me very happy."

But others think that teaching is worth the sacrifice.

Sheldon K. Reid went to Harvard University in 1992 with plans to head to medical school after graduation. But after sophomore year, Mr. Reid, 25, took a year off to do community service and tutor at-risk high school students. By the middle of his senior year, the Long Island native decided to put medical school on hold and get his master's degree in education. He is now using his degree in biochemistry to teach science at Newton North High School outside of Boston.

"I feel I'm really making a difference," said Mr. Reid, who also teaches music at the school. "And as long as I can keep giving it my all, I'll definitely keep doing it."

GRAPHIC: Photo: David Robinson, who is finishing his master's degree at Columbia University's Teachers College, has been hired to teach English this fall to 9th- and 10th-graders at the Bronx Leadership Academy in the South Bronx. (Philip Greenberg for The New York Times) (pg. 17)

Graph: "Enticing Teachers" tracks percentage of college freshmen expressing an interest in teaching careers, from 1973 to 1998. (Source: U.C.L.A. Cooperative Institutional Research Program) (pg. 1)

LANGUAGE: ENGLISH

LOAD-DATE: July 11, 1999

LEVEL 1 - 9 OF 86 STORIES

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THE HARTFORD COURANT

May 14, 1999 Friday, STATEWIDE

SECTION: MAIN; Pg. A1

LENGTH: 1019 words

HEADLINE: PUBLIC TO PRIVATE;

;
PRIVATE SCHOOLS HAVE BECOME AN ATTRACTIVE CHOICE FOR SOME STUDENTS, PARENTS AND
TEACHERS.;

;
TEACHERS: A SLOWER PACE CUTS DOWN ON STRESS

BYLINE: WARREN WOODBERRY JR.; Courant Staff Writer

BODY:

Frustrated with grading hundreds of papers at home, a 120-student class roster and a lack of school discipline, Jessica Lemoine quit teaching at Farmington High School and took a job as a mathematics instructor at nearby Miss Porter's private school.

Lemoine no longer puts up with frequent faculty meetings, cafeteria duty or the bureaucracy she once wrestled with in the public sector. Her job at the all-girl school offers her less work and more time at home.

"Porter has an administration that encourages me to be here, which is outstanding," Lemoine said of the school where she teaches smaller classes of students in the ninth and 10th grades. "They realize part of you is your family."

In recent school years, some public school teachers like Lemoine have left their systems for less demanding, less stressful jobs at some of Connecticut's upscale, prestigious private schools. These schools, although they pay far less than public schools, are drawing individuals seeking work in more personal, family-like environments where faculty turnover is low, classes are small and discipline problems are rare.

Although state education officials do not keep statistics on public school teachers leaving for private schools, they suspect the number is growing. But Tom Murphy, a spokesman for the state Department of Education, said the door swings both ways, and that many teachers leave private schools for the higher pay at public schools.

The National Center for Education Statistics has projected that national private school enrollment will increase from 5 million to 6.2 million by 2005, and that means private schools will need more teachers.

"I think there is a lot of freedom," Alice Baxter, dean of faculty at Loomis Chaffee School in Windsor, said of private schools. "Private schools can offer opportunities that are not at the public level."

THE HARTFORD COURANT, May 14, 1999

State certification is not usually required of private school teachers. Most allow for professional growth with graduate study, workshops, conferences and seminars. Some offer faculty tuition remission or direct grants to their children. And some private boarding schools offer faculty rent-free housing on campus and/or meals for staff and their families at school cafeterias.

Before moving to Miss Porter's in September, Lemoine spent two years in Farmington. There, she said, some students cursed her and some did not bother to attend as many as 40 of her sessions. A third-year teacher with a lifetime teaching certificate in Massachusetts, Lemoine said a main reason she abandoned public school was because she did not want to repeat a certification program she has already completed.

One major disadvantage to teaching in public schools is the discipline problems, some private school teachers said.

"There is a very important distinction between the public school classroom and the private school classroom," said Peter Tacy, executive director of the Connecticut Association of Independent Schools. "One which is obvious is that if the student is not behaving appropriately, the school can actually ask the student to leave and that's that."

Researchers at the Klingenstein Center at Teachers College, Columbia University, said teachers are drawn to private schools because of their autonomy and empowerment, unique atmosphere and quality of students and school facilities.

Murphy, however, said that not all teachers and public schools make for a good match.

"You can't assume that it's only the teacher's decision to reject the public school and say, 'I'm going to go,' where it could just be the environment," he said. "They might not have the right fit in the school or have the right skills for class management."

When public school teachers choose private school over public school they give up much higher salaries, but often make up the difference in with the perks they receive.

Less-experienced private school teachers earn about \$10,000, compared with \$30,000 for state public school teachers. Veteran private school teachers earn about \$50,000, compared with \$60,000 for state public school educators with a sixth-year certification, one degree below a doctorate.

At The Hotchkiss boarding school in Salisbury, faculty and students can participate in many activities, including golf, tennis, swimming, squash and lacrosse.

"It has a lot of facilities some colleges would like to have," said George Faison, a 13-year Hotchkiss English teacher.

After teaching 20 years in Massachusetts public schools, Faison, 59, said he wanted a change. He took a \$10,000 pay cut and moved with his wife, Lorraine, on campus for free room and board.

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The drop in salary paid off. Faison's son, Edward, received free tuition at Hotchkiss to graduate in 1991, and Faison has taken sabbaticals in Greece and Italy to study Greek drama for his ninth-grade mythology course.

In its college-like setting, Faison said, Hotchkiss students are motivated learners and believe teachers make educational contributions that are difficult to achieve in public schools.

"I marvel at the feat that people can go on in the public school setting," Faison said. "With that many kids, and doing it so well -- they are miracle workers."

Private schools rebound in state

School/Town/Grades/Enrollment/Yearly Tuition/% on scholarship.

Cornerstone Christian School/Manchester/K-12/135/\$1,000 to \$4,000, based on family income/25.

Corpus Christi School of Religion/Wethersfield/preschool-8/507/\$1,750/0.

Emmanuel Christian Academy/Newington/K-12/250/\$2,500/0.

Hartford Seventh Day Adventist Area School/Hartford/k-8/130/\$2,400/10.

Hebrew Academy of Greater Hartford/Bloomfield/preschool-8/205/\$7,000/25.

Northwest Catholic High School/West Hartford/9-12/594/\$6,420/NA.

The Master's School/Simsbury/preschool-12/442/\$9,800 for high school/55.

Solomon Schechter Day School/West Hartford/preschool-8/266/average \$8,500/33.

St. Francis of Assisi School/Torrington/K-8/212/starting at \$1,400/0.

Trinity Christian Elementary School/Windsor/1-4/63/\$2,400/1.

GRAPHIC: PHOTO 1: (color), TOM BROWN / THE HARTFORD COURANT

PHOTO 2: (b&w), JOANNE HOYOUNG LEE / THE HARTFORD COURANT

PHOTO 3: (b&w), SHANA SURECK-MEI / THE HARTFORD COURANT

GRAPHIC: (b&w), THE HARTFORD COURANT

; PHOTO 1: HELP IS GIVEN to Kate Geisler by Watkinson School mathematics teacher Paige Kenausis. The former public school administrator left the stress of that job for a work schedule that accommodates her two children.

PHOTO 2: LEAVING Farmington High School, Jessica Lemoine of Canton took a job as a mathematics instructor at Miss Porter's School, a private school for girls in Farmington, shown in the background.

PHOTO 3: DURING A CLASS, George Faison, an English teacher at The Hotchkiss School in Salisbury, enjoys a comment from ninth-grader Devin McEwan. Faison joined the school after 20 years in

Massachusetts public schools.

GRAPHIC: Private schools rebound in state. [Library note: please see chart at the end of the story above.]

LANGUAGE: ENGLISH

LOAD-DATE: May 17, 1999

LEVEL 1 - 12 OF 86 STORIES

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American Demographics

May, 1999

SECTION: INDICATORS; Pg. 27

LENGTH: 78 words

HEADLINE: News They Can't Use

BODY:

High-school civics teachers might wince when they see these figures. A study by the National Center for Education Statistics finds that less than half of high-school students read about national news in any given week, and even fewer talk about politics with their parents. While many students (43 percent) believe controversial books don't belong in a public library, nearly nine out of ten say people should be allowed to speak out against religion or church.

GRAPHIC: Graphs 1 through 6, READ ALL ABOUT IT; Graph 1, Students read national news (%); Graph 2, Students watch/listen to nat'l news (%); Graph 3, Students watch/listen to news with parents; Graph 4, Parents read national news (%); Graph 5, Parents watch/listen to nat'l news (%); Graph 6, Parents say child watch/listens to news; Graphs 1 through 6, Source: National Center for Education Statistics

LANGUAGE: ENGLISH

LOAD-DATE: May 7, 1999

LEVEL 1 - 15 OF 86 STORIES

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April 11, 1999, Sunday, Final Edition

SECTION: MAGAZINE; Pg. W30

LENGTH: 873 words

HEADLINE: THEN & NOW; The modern classroom is a much different place than the one you may recall

BYLINE: Linda Perlstein

BODY:

In America's elementary schools, far more has changed in the last 30 years than just the boundaries on classroom globes. You probably have some idea of that from the last time you tried to help your kid on her division by telling her to "borrow." Duh, Mom, we "regroup" now.

Many tools, of course, are different. The compasses are now safer plastic instead of perilously pointy metal, and there are fancy scientific calculators in math classes. Teachers no longer are smeared with blue ink from making copies on recalcitrant "ditto" machines. Film strips are still around, but the 16mm projector (shut your eyes and you can hear it: "thwucka-thwucka-thwucka") has been replaced, of course, by the VCR. Third-graders long ago stopped spending half an hour a day on penmanship drills. How could they? They're busy learning how to "keyboard," as in computers. And you won't find a potato peeler in the kitchen: Lunch isn't cooked in the cafeteria anymore.

But what's changed the most, longtime elementary school teachers say, is what, and how, children learn -- and teachers are constantly struggling to keep up. Regina Mitchell, who has spent three decades teaching in Montgomery County -- and is now at Rock Creek Forest Elementary School -- puts it this way: "The population has changed, the curriculum has changed, and the style I have to teach has changed. There's no such thing as having a file cabinet of ideas you can run to because you've been teaching 20 years." Things are just changing too fast for that.

Learning is hands-on as a rule these days, with ready-made kits provided for each curriculum. Thirty years ago, learning mostly just came out of books, and the teacher who wanted to use actual stuff to demonstrate concepts usually had to conjure it up herself. Old habits die hard for long-timers like Mitchell: "You can tell the dinosaur teachers -- our closets are filled with any container, any this or that, that could become a science experiment," she says. As for the younger breed: "These little kids" -- her fellow teachers, she means -- "they don't know how easy life is. It's all in a box!"

Students are introduced to more sophisticated concepts at earlier ages -- raise your hand if you learned about opportunity costs in fifth grade. The simplistic short stories of the basal readers have been replaced by folk tales from around the world and novels. Children have to think more analytically, explain how they got their answers. What they learn in one class is integrated

The Washington Post, April 11, 1999

into another. Years ago, science was science. Now, it's science and reading and math and writing. And standardized tests are no longer a once-a-year nuisance; they're a year-round obsession.

Decades ago, children new to English sat through class while other kids helped them learn the language, word by word; now they get supplemental instruction. Special education kids, on the other hand, had their own classes; now, for the most part, they're included with everyone else.

Oh, and don't forget Ritalin. "Back then," says Paula Woods, who has taught in Howard County since 1968 and is now at Manor Woods Elementary, "hyper kids were hyper kids."

Herewith some facts and figures to peruse -- with your kids -- about how schools have, and have not, changed. Expect a quiz.

Linda Perlstein covers education for The Post's Metro section.

THE SCHOOLS 1966 1996

Number of public elementary schools 73,400 61,165

Number of students (in millions) 28.2 32.8

Spending per student \$ 3,167 \$ 6,961

% of students in public schools 86 88

Number of students per class 28 24

% of legally desegregated school districts 89 100

% of districts with both black

and white students 56 77

% of black children in school with

white students* 16 94

% of teachers using PCs in class 0 69

THE STUDENTS

White enrollment as % of students 86 77

% transported to school at public expense* 40 58

% getting subsidized lunch 36 38

THE TEACHERS

Average salary \$ 30,508 \$ 37,300

The Washington Post, April 11, 1999

Median experience in years 10 15

Mean age 41 43

% with master's degree or above 17 52

Men as % of teachers 10 9

% eating lunch with their students 63 46

% in a union 70 90

% who would become a teacher again 84 67

* Includes elementary and secondary school students, not just elementary as is the case with the rest of the statistics.

Calculated in 1996 dollars.

SOURCES: National Center for Education Statistics (special thanks to Tom Snyder) and National Education Association (special thanks to Charlie Ericksen). All data are for public schools.

GRAPHIC: ILL,,MICHAEL SLOAN

LANGUAGE: ENGLISH

LOAD-DATE: April 11, 1999

LEVEL 1 - 25 OF 86 STORIES

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Science

December 4, 1998

SECTION: No. 5395, Vol. 282; Pg. 1830; ISSN: 0036-8075

IAC-ACC-NO: 53588773

LENGTH: 3178 words

HEADLINE: What Can We Really Learn from TIMSS?Third International Mathematics
and Science Study

BYLINE: Schmidt, William H.; McKnight, Curtis C.

BODY:

There has recently been great concern about the quality of precollege education in science and mathematics in the United States and other countries. Evaluation of the state of education as well as policy options requires data on the practices and results of national education systems. The goal of the Third International Mathematics and Science Study (TIMSS) was to provide such data. It included an analysis of the education systems of over 40 countries, including textbooks and several achievement tests. The admittedly complex results of such a multifaceted study (1) have received considerable publicity and some criticism. Some have questioned whether TIMSS can even be used to inform policies related to science and mathematics education (2). Here we summarize some of the results (3-8), argue that many of the findings are robust, and discuss the implications for education policy.

Dimensions of TIMSS

The TIMSS study was wide-ranging, with many facets. Cross-national comparative achievement testing was done in each participating country in science and mathematics. Testing was done for the two adjacent grades containing the most 9-year-olds (hereafter referred to as third and fourth grades, as was the case in the United States), the two containing the most 13-year-olds (hereafter, seventh and eighth grades), and the final year of secondary school. The latter population included a sample of the entire population of students in the final year of secondary school who took science and mathematics general knowledge tests. It also included a specialized sample of those in their final year who had taken advanced courses in either mathematics or science (or both): that is, only physics for science and the appropriate advanced mathematics course (a mixture of precalculus and calculus in the United States).

Although this has received less attention, TIMSS also included analysis of official curriculum documents and textbooks as well as surveys of students, teachers, school officials, and national officials (3). The goal was to develop a map of the structure of each national education system, both to inform study of that system and to guide sampling for achievement testing. A referee monitored sampling designs and implementations, and significant deviations

were indicated in reported results.

The use of adjacent grades in the third/fourth- and seventh/eighth-grade populations allowed the estimation of differences between cross-section samples of grade pairs, which is a fair surrogate for gains that might have been measured by a true longitudinal design.

Some Results of TIMSS

The TIMSS results show a decline in the relative standing of U.S. students from fourth to eighth grade in both mathematics and science, as compared to those in other countries. In science, U.S. third- and fourth-grade students were near the top of participating countries, whereas U.S. seventh- and eighth-grade students placed just above the cross-national average. In mathematics, the drop was from above the cross-national average to below it.

To relate achievement results more directly to curricular emphases, around 20 sub-areas were defined from the test items in each of mathematics and science for these two pairs of grades. Sub-areas where U.S. students did score somewhat better (for example, earth science, fractions, and decimals) corresponded to topics that received more extensive emphasis and coverage as revealed by the curriculum document and textbook analyses. The lower U.S. seventh- and eighth-grade scores for mathematics, compared to third- and fourth-grade scores, were true not only globally but also across most of the 20 sub-areas in mathematics. Use of paired grades also allowed single-grade "difference scores" to be computed. In the United States, in both science and mathematics, the seventh- to eighth-grade differences were consistently smaller than the third- to fourth-grade gains.

These achievement data seem to be clearly consistent with information gathered as part of the curriculum, textbook, and teaching data. U.S. curricula, as an aggregate, consistently covered more topics than did the curricula of virtually all other TIMSS countries. The U.S. mathematics and science textbooks included more topics and were the largest (literally) among those of the TIMSS countries. U.S. teachers covered more topics than those of most other TIMSS countries. They spent little time on most topics. For example, the only topic to receive more than 19 class periods of instruction in eighth grade was common fractions, a topic typically finished in earlier grades in many high-achieving TIMSS countries.

There was a close match between curricular differences and achievement differences. At fourth grade, only one nation (Korea) outperformed U.S. students on the total science score. When examined in detail, however, U.S. students' performance was weakest in all four areas related to physics and physical science. Similar weaknesses held at eighth grade. These results suggest that no serious foundation in physics was provided through the first 8 years, as compared to that provided by other TIMSS countries. Direct data on curricular emphases (for example, whether attention was to be focused on physical science topics) and textbook content (for example, pages devoted to physical science topics), as well as teacher reports of time spent covering physical science topics, support this suggestion (7, 8).

Similarly, in geometry the relative performance of U.S. students was much lower by the seventh and eighth grades than it was in the third and fourth grades (see the table). Analyses of documents and textbooks showed that U.S.

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treatment of geometry was comparatively weak after fourth grade [little focus on geometry in official curricula and few textbook pages devoted to it (and those only to simple aspects of geometry such as naming polygons)] (6, 8).

Nations with Average Scores

Significantly Higher Than the U.S.

GRADE 4

GRADE 8

Nation	% Correct	Nation	% Correct
Hong Kong	74	Japan	80
Australia	74	Singapore	76
		Korea	75
GRADE 8		Hong Kong	73
		Czech Republic	66
		France	66
		Bulgaria	65
		Belgium-Flemish	64
		Russian Federation	63
		Slovak Republic	63
		Thailand	62
		Slovenia	60
		Hungary	60
		Switzerland	60
		Netherlands	59
		Belgium-French	58
		Canada	58
		Australia	57

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Israel	57
Austria	57
Latvia	57
International(*)	56
New Zealand	54
England	54
Denmark	54

Nations with Average Scores

Not Significantly Different From the U.S.

England	74	Lithuania	53
Scotland	72	Romania	52
Japan	72	Scotland	52
Singapore	72	Iceland	51
Korea	72	Norway	51
Canada	72	Greece	51
Slovenia	72	Spain	49
Netherlands	71	Sweden	48
United States	71	United States	48
Czech Republic	71	Cyprus	47
		Portugal	44

Nations with Average Scores

Significantly Lower Than the U.S.

Austria	67	Iran, Islamic
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Latvia	67	Republic	43
Ireland	66	Kuwait	38
New Zealand	66	Colombia	29
Hungary	66	South Africa	24
International(*)	64		
Iceland	63		
Israel	62		
Norway	58		
Greece	53		
Thailand	53		
Cyprus	53		
Portugal	52		
Iran, Islamic			
Republic	42		
Kuwait	36		

SOURCE: I.V.S Mullis, M.O. Martin, A. E. Beaton, E. J. Gonzalez, D. L. Kellu, T. A. Smith, Mathematics Achievement in the Primary School Years: IEA's Third International Mathematics and Science Study (Center for the Study of Testing, Evaluation, and Educational Policy, Boston College, Chestnut Hill, MA, 1997), p. 47. A. E. Beaton et al., Mathematics Achievement in the Middle School Years: IEA's Third International Mathematics and Science Study (Center for the Study of Testing, Evaluation, and Educational Policy, Boston College, Chestnut Hill, MA, 1996), p. 41.

(*) Average of national averages of the participating countries.

Table 1. Performance of students in various countries on the TIMSS geometry achievement tests in the third and fourth, and seventh and eighth grades. Countries are grouped in comparison to the scores of the United States.

Other aspects of mathematics and science curricula were also consistent with the pattern of results from third to eighth grade. The U.S. curriculum appears not only to have been unfocused but highly repetitive, lacking coherence, and providing little rigorous intellectual challenge during the middle years, particularly when compared to those of other TIMSS countries (4, 8). Children in most TIMSS nations began the study of algebra, geometry, physics, and chemistry during fifth through eighth grades. In contrast, U.S. students continued studying elementary arithmetic and science as late as eighth grade.

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In addition, out of almost 40 areas in mathematics and science combined and at fourth and eighth grades, the United States was the only nation not to show differences from one adjacent grade to the next that would rank it in the top quartile of countries in at least one area (8). This pattern echoes the U.S. pattern of dividing attention among many topics. The cumulative effect of such small gains is seen in the consistent decline of U.S. rankings.

Most recent criticisms of TIMSS results have focused on the end-of-secondary-school results. These included a general knowledge test for mathematics and science designed to draw on knowledge at about the eighth-grade level in all countries. These results showed still lower comparative rankings of U.S. students in both mathematics and science, which given the relatively average to poor standing at eighth grade and the general pattern of many U.S. students not continuing to study science or mathematics should hardly be surprising.

The end-of-secondary results must be viewed in the context of the results from the other grades tested and, in the case of the advanced topics, from the analysis of curriculum documents and textbooks. The results for physical science in fourth and eighth grade also hardly seem to justify surprise at weak comparative performance in physics at the end of secondary school. The end-of-secondary results are consistent both with achievement results at earlier points at the sub-area level and with curricular and textbook data.

Some Criticisms of TIMSS

One criticism of the TIMSS results has been that the differences from sub-area to subarea of achievement results indicate that the results are not robust and should not be used to inform policy discussions. However, the differences in achievement are consistent with and seem to reflect curricular differences. Curricular and systemic differences are legitimate variables that policy can affect. This sensitivity of achievement to curricular factors is thus a demonstration of robustness rather than a basis for criticism.

A second criticism has been that the sampling at the end of secondary school is inadequate and invalidates the TIMSS results. Were those particular results to be inadequate, they would hardly invalidate the more robust and less problematic results in the earlier grades and the relationship of achievement differences to curricular differences. As it is, the sampling and population definitions were more problematic at the end of secondary school, and more exceptions had to be documented. However, the consistency of the findings with the curricular results and the achievement results from the earlier grades indicates that these data provide at least general indications of the cumulative effect of schooling in mathematics and science, even if the interpretation of those indications is not as straightforward.

The end-of-secondary populations were designed for a yield study of what comes out of the pipeline of precollege education in mathematics and the sciences. It was never assumed that the students would be similar in age, years of schooling, or in percent of age cohort still in school. Were those the criteria, then the end-of-secondary results would be of questionable use (9). However, from a policy perspective it seems worthwhile to compare the yield of national educational systems. What is known at the end of secondary school is relevant to establishing policies to enhance international economic competitiveness. These data are thus useful as one indicator of comparative

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strengths and weakness that can help to inform policy discussions.

References and Notes

- (1.) W. H. Schmidt and C. C. McKnight, *Educ. Eval. Pol. Anal*, 17, 337 (1995).
- (2.) I.C. Rotberg, *Science* 280, 1030 (1998).
- (3.) TIMSS reports are issued from various sources. The international TIMSS Study Center is located at Boston College and has issued several reports, including I. V. S. Nullis et al., *Mathematics and Science Achievement in the Final Year of Secondary School: IEA's Third International Mathematics and Science Study* (TIMSS International Study Center, Boston College, Chestnut Hill, MA, 1998). They also issued separate reports for primary school and for middle school mathematics and science. All of these reports are available at www.csteep.bc.edu/TIMSS. The National Center for Education Statistics (NCES) of the U.S. Department of Education has issued a separate series of U.S.-oriented reports that also place descriptive results in an international context. This series includes *Pursuing Excellence: A Study of U.S. Twelfth-Grade Mathematics and Science Achievement in International Context* (NCES 98-049, U.S. Government Printing Office, Washington, DC, 1998). Corresponding reports are available from NCES on third- and fourth-grade science and mathematics and on seventh- and eighth-grade science and mathematics at nces.ed.gov/timss. In addition, a series of monographs have been prepared at the U.S. TIMSS Research Center (4-8).
- (4.) W. H. Schmidt, C. C. McKnight, S. A. Raizen, *A Splintered Vision: An Investigation of U.S. Science and Mathematics Education* (Kluwer, Dordrecht, 1997).
- (5.) W. H. Schmidt et al., *Characterizing Pedagogical Flow: An Investigation of Mathematics and Science Teaching in Six Countries* (Kluwer, Dordrecht, 1996).
- (6.) W. H. Schmidt, C. C. McKnight, G. A. Valverde, R. T. Houang, D. E. Wiley, *Many Visions, Many Aims: A Cross-National Investigation of Curricular Intentions in School Mathematics* (Kluwer, Dordrecht, 1997).
- (7.) W. H. Schmidt, S. A. Raizen, E. D. Britton, L. J. Bianchi, R. G. Wolfe, *Many Visions, Many Aims: A Cross-National Investigation of Curricular Intentions in School Science* (Kluwer, Dordrecht, 1997).
- (8.) W. H. Schmidt, C. C. McKnight, L. Cogan, P. Jakwerth, R.T. Houang, *Facing the Consequences* (in press).
- (9.) In the context of this question of "comparability versus yield," the naming of the NCES end-of-secondary report (*Pursuing Excellence: A Study of U.S. Twelfth-Grade Mathematics and Science Achievement in International Context*) seems particularly unfortunate. The report focuses on the United States, where the end of secondary school is the 12th grade, and thus seeks to put U.S. 12th-grade results in an international context. It does not imply that the end of secondary school in all TIMSS countries is the same as the U.S. 12th grade.

William H. Schmidt and Curtis C. McKnight

Science December 4, 1998

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LEVEL 1 - 27 OF 86 STORIES

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The Ethnic NewsWatch
Journal of Blacks in Higher Education, The

October 31, 1998

SECTION: No. 21; Pg. 82

LENGTH: 922 words

HEADLINE: News and Views: The Enduring State of Segregation in Southern Higher Education

BODY:
News and Views: The Enduring State of Segregation in Southern Higher Education

At the conclusion of the Civil War, 19 southern and border states established public black colleges for the purpose of training academics to teach at the segregated black public schools in their states. For most of the next century, black students seeking public higher education in the southern states were required to attend the segregated institutions since they were barred from admission to the predominantly white institutions in the state. After the 1954 Supreme Court decision in *Brown v. Board of Education*, blacks won admission to the flagship universities in each of these states.

Yet in the ensuing years, black college students continued to be steered to the predominantly black colleges in the South. Admission requirements at white flagship state universities were often rigged to discourage matriculation by blacks. Large numbers of college-bound African-American students had poor qualifications for college because they came from rigidly segregated and poorly funded public schools. On most white campuses, black students did not feel welcome. Hostile racial attitudes meant that many black students preferred the safety and security of the black colleges. For the most part, the higher education systems of these states remained solidly segregated and unequal.

Then in 1992, the U.S. Supreme Court ruled in *United States v. Fordice* that these states must take affirmative steps to end their systems of segregated higher education. Under court order many states began to take serious steps to integrate their higher education systems. North Carolina set up a racially targeted scholarship program to attract black students to white campuses and white students to black campuses. In Florida a feeder program now assists students from predominantly white community colleges to win admittance to the state's historically black university. Other states moved popular academic programs to black campuses in order to increase the number of white students. Mississippi even considered merging black and white campuses into one institution.

But six years after *Fordice* segregation has persisted in southern higher education. According to a new report by the Southern Education Foundation (SEF) entitled *Miles to Go: A Report on Black Students and Postsecondary Education in the South*, "remnants of the past continue to restrict opportunity for black students, limiting their aspirations, and threatening the region's hopes for a brighter future."

The Ethnic NewsWatch, October 31, 1998

According to the report, in many states there has been little or no progress in increasing access to college for black youth. For example, in Mississippi blacks made up 40.5 percent of the college freshmen in 1976. Thirty years later, in 1996, blacks make up only 40.8 percent of all college freshmen. In Tennessee, the black percentage of all college freshmen actually declined from 22.3 percent in 1976 to 17.7 percent in 1996. In Arkansas and Kentucky the percentage of all bachelor's degree recipients who were black actually declined from 1976 to 1996.

Regrettably, the report breaks no new ground. It relies for the most part on U.S. Department of Education statistics that are widely available and have been reported extensively in other publications, including JBHE. The report is valuable in that it presents the summary information in a concise, easy-to-read format with a generous number of graphs and tables. The SEF report is of further value because it has received widespread distribution and press coverage outside the normal channels that specialize in higher education. Most people in the academic world are well aware of the persistence of the segregated higher education systems in the southern states. But, from time to time, it is important to bring this message to the larger audience, one that is repeatedly bombarded with messages from conservatives that America's race problem has substantially been resolved.

Black Access to Higher Education, Particularly Quality Higher Education,
Remains Restricted in a Majority of the

Southern and Boarder States

Black % Black % of

Black % of of All Freshmen at

18- to 24- College Flagship

Year-Old Freshmen University State Population in 1996 in 1996 Alabama 31.6
25.1 9.9 Arkansas 20.7 19.9 9.4 Delaware 22.2 16.2 6.4 Florida 20.0 17.6 7.7
Georgia 32.3 23.9 7.1 Kentucky 8.2 9.9 7.0 Louisiana 36.7 31.6 18.6 Maryland
30.6 28.8 16.3 Mississippi 43.6 40.8 10.2 Missouri 13.0 6.8 7.7 North Carolina
26.3 23.5 11.8 Ohio 12.7 9.1 8.7 Oklahoma 8.7 10.1 8.4 Pennsylvania 10.8 9.1 4.6
South Carolina 36.1 20.2 21.5 Tennessee 19.3 17.7 5.2 Texas 12.9 13.8 4.1
Virginia 21.7 17.3 11.8 West Virginia 3.5 5.4 3.8

Source: Southern Education Foundation.

ETHNIC-GROUP: African American/Caribbean/African

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LEVEL 1 - 71 OF 86 STORIES

Copyright 1997 American Demographics, Inc.
Forecast

November, 1997

SECTION: Vol. 17, No. 11; Pg. 7

LENGTH: 576 words

HEADLINE: Demographics of Student Debtors

BODY:

Do student loans discourage young college graduates from taking low-paying occupations? If they do, the effect is slight, according to the National Center for Education Statistics' surveys of the class of 1993.

The likelihood that students will borrow for their college education varies according to the student's demographics and educational choices. More than six in ten black and Hispanic college students take out loans to pay for school, compared with 48 percent of non-Hispanic white students. Students from poorer households are more given to borrowing, as are students who take longer to graduate, and those who go to private schools. Yet most debtors don't stay in debt long. In June 1994, only 37 percent of those who received a bachelor's degree in 1993 were still carrying undergraduate debt.

Anxieties about debt do not prod the average student toward a higher-paying job. Borrowers and non-borrowers are equally likely to say that good income potential is important in determining what kind of work they seek (45 percent of each group say this). In 1994, 56 percent of employed borrowers and 54 percent of non-borrowers said their current job was closely related to their undergraduate degree.

Borrowers are slightly less likely to apply to graduate or professional school: 27 percent did, compared with 31 percent of non-borrowers. The share of students who considered graduate school but then decided against applying was 75 percent among borrowers and 71 percent for non-borrowers. But only 10 percent of the borrowers who decided against graduate school said the primary reason was too much undergraduate debt. Free copies of Early Labor Force Experiences and Debt Burden are available for a limited time from the National Library of Education; telephone (800) 424-1616, or the National Education Data Resource Center (NEDRC); telephone (703) 845-3151. The report is also available for download at this Internet address: <http://nces.ed.gov/pubs97/97286.html>.

MORTARBOARD MORTGAGES

(percent of 1993 bachelor's degree recipients who took out student loans, average amount borrowed, and distribution of borrowing, by sex, race/ethnicity, age, and type of institution)

Note: This table may be divided, and additional information on a particular entry may appear on more than one screen

	% who borrowed	average borrowed
total	49%	\$ 10,167
male	50	10,428
female	49	9,945

Forecast, November, 1997

black, non-hispanic	64	9,570
hispanic	61	7,966
white, non-hispanic	48	10,321
age received bachelor's degree		
24 or younger	45	10,360
25 to 29	65	9,626
30 or older	55	9,725
degree-granting institution		
public, four-year	46	8,696
private, nonprofit four-year	54	12,760

	amount borrowed			
	less than \$ 5,000	\$ 5,000 to \$ 9,999	\$ 10,000 to \$ 14,999	\$ 15,000 or more
total	29%	28%	21%	22%
male	28	29	20	23
female	29	28	21	22
black, non-hispanic	34	22	24	20
hispanic	42	26	15	17
white, non-hispanic	27	29	21	23
age received bachelor's degree				
24 or younger	29	28	20	23
25 to 29	26	31	24	20
30 or older	31	29	19	22
degree-granting institution				
public, four-year	34	30	19	17
private, nonprofit four-year	20	24	23	32

Source: National Center for Education Statistics

LANGUAGE: ENGLISH

LOAD-DATE: November 18, 1997

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HEADLINE: The incredible shrinking pipeline; women students of computer science

BYLINE: Camp, Tracy

BODY:

The ratio of women involved in computer science from high school to graduate school has been dwindling at a startling pace over the past decade. Is there hope in sight?

The pipeline shrinkage problem concerning women in computer science is a known phenomenon [ILLUSTRATION FOR FIGURE 1 OMITTED]. Although women make up 50% of high school computer science (CS) classes [10], the percentage of bachelor's degrees in CS awarded to women in the 1993-94 academic year was only 28.4% [7].(1) At the graduate level, for the academic year 1993-94, the percentages of degrees in CS awarded to women dropped even further: 25.8% at the M.S. level and 15.4% at the Ph.D. level. In addition, for women who become faculty members, the pipeline shrinks through the academic ranks. According to the Computing Research Association's Taulbee Survey, only 15.6% assistant professors, 9.4% associate professors, and 5.7% full professors were women in CS Ph.D.-granting departments during the academic year 1993-94 [1].

The title of this article, however, is the incredible shrinking pipeline: The percentage of bachelor's degrees awarded in CS to women decreased almost every year over the last decade. In other words, not only does the pipeline shrink from high school to graduate school, but it also shrinks at the bachelor's level [ILLUSTRATION FOR FIGURE 2 OMITTED]. Furthermore, while the percentage of bachelor's degrees awarded in CS to women decreased, corresponding percentages of other science and engineering disciplines increased. Since the number of women at the bachelor's level affects the number of women at levels higher in the pipeline and in the job market, these facts are of great concern.

There are a number of reasons why we need to improve the percentage of degrees awarded in CS to women. In short, there is a critical labor shortage in CS and, although women are more than half the population, they are a significantly underrepresented percentage of the population earning CS degrees.

In this article, we look at the harsh facts concerning the percentage of degrees awarded in CS to women. We study the trend of degrees awarded in CS since 1980, and compare the trend in CS to other science and engineering disciplines. We consider the relationship between the percentage of degrees awarded to women by a CS department and the college the CS department is

within. We find that CS departments in engineering colleges graduate, on average, proportionately fewer women than CS departments in non-engineering colleges. We request that the community respond to the facts and speculations presented in this article.

Degree Trends: 1980-81 Through 1993-94

We have already established that as women progress from high school to graduate school, they will be part of a smaller and smaller proportion of students. In addition, from 1983-84 to 1992-93, the percentage of B.A./B.S. degrees awarded in CS to women consistently decreased. The percentages of M.S. degrees awarded in CS to women were more stable over this period, and the percentages of Ph.D. degrees awarded in CS to women (though still meager) increased.

The National Center for Education Statistics at the U.S. Department of Education classifies CS departments within the Computer and Information Sciences (CIS) category. Figure 3 illustrates the percentage of degrees awarded within different fields of study in CIS for B.A./B.S., M.S., and Ph.D. levels in 1993-94. As illustrated, the bulk of the degrees awarded are in the general computer science category, with information science and systems a distant second. We, therefore, use the acronym CS in this article to represent all CIS fields. Table 1 lists the number of B.A./B.S., M.S. and Ph.D. degrees awarded in CS from 1980-81 to 1993-94 and the percentage of recipients that were women.

Table 1. Degrees awarded in CS: 1980-81 to 1993-94

Academic Year	B.A./B.S. Degrees	% Women	M.S. Degrees	% Women	Ph.D. Degrees	% Women
1980-81	15,121	32.5	4,218	23.0	252	9.9
1981-82	20,267	34.8	4,935	26.5	251	8.4
1982-83	24,510	36.3	5,321	28.3	262	13.0
1983-84	32,172	37.1	6,190	29.3	251	10.4
1984-85	38,878	36.8	7,101	28.7	248	10.1
1985-86	41,889	35.7	8,070	29.9	344	13.1
1986-87	39,589	34.7	8,481	29.4	374	13.9
1987-88	34,523	32.4	9,197	26.9	428	11.2
1988-89	30,454	30.8	9,414	28.0	551	15.4
1989-90	27,257	29.9	9,677	28.1	627	14.8

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1990-91	25,083	29.3	9,324	29.6	676	13.6
1991-92	24,557	28.7	9,530	27.8	772	13.3
1992-93	24,241	28.1	10,163	27.1	805	14.4
1993-94	24,200	28.4	10,416	25.8	810	15.4

Although the percentages of Ph.D. degrees awarded in CS to women are very low, the numbers from the three most recent years available suggest the percentages are in an upward trend. However, due to the shrinking of the pipeline at the B.A./B.S. level, it is unlikely this upward trend will continue. From Table 1, we conclude there is some good news at the Ph.D. level.

* The number of Ph.D. degrees awarded in CS continues to increase.

* The percentage of Ph.D. degrees awarded in CS to women in 1993-94 was equal to the percentage of Ph.D. degrees awarded in CS to women in 1988-89 (the year when the percentage was at its highest level).

* The percentage of Ph.D. degrees awarded in CS to women in 1993-94 was almost 50% higher than the percentage of Ph.D. degrees awarded in CS to women a decade ago (10.4% versus 15.4%).

Some members of our community are concerned about the first point. As the number of Ph.D. degrees awarded in CS continues to increase, university positions are more difficult to obtain. Furthermore, many recent Ph.D. graduates do not seem prepared for the realities they face in the job market [4].(2) In contrast to this viewpoint, we present the following numbers. First, the unemployment rate for people with a Ph.D. in CS is extremely low (1.1%) [6].(3) Second, the underemployment rate for people with a Ph.D. in CS, or the rate of people with a Ph.D. in CS who work outside the CS discipline, is low (3.6%) [6]. Third, there is only a 4% Ph.D. surplus in CS, which is "the lowest surplus of any science and engineering field." [6].

There is mixed news at the M.S. level as well. The number of M.S. degrees awarded in CS continues to increase, but the percentage of M.S. degrees awarded in CS to women has reached its lowest level since 1980-1981. Due to the shrinking of the pipeline at the B.A./B.S. level, it is likely the percentage of M.S. degrees awarded in CS to women over the next few years will continue to decline.

Table 2. B.A./B.S. degrees awarded in all disciplines: 1980-81 to 1993-94

Academic	B.A./B.S.	%
Year	Degrees	Women

1980-81	935,140	49.8
1981-82	952,998	50.3
1982-83	969,510	50.6
1983-84	974,309	50.5
1984-85	979,477	50.7
1985-86	987,823	50.8
1986-87	991,264	51.5
1987-88	994,829	52.0
1988-89	1,018,755	52.5
1989-90	1,051,344	53.2
1990-91	1,094,538	53.9
1991-92	1,136,553	54.2
1992-93	1,165,178	54.3
1993-94	1,169,275	54.5

At the B.A./B.S. level, there is only bad news: The number of B.A./B.S. degrees awarded in CS has steadily decreased since 1985, and the decrease is occurring at a faster pace for women than men. The fact that the number of B.A./B.S. degrees awarded in CS is decreasing at a faster pace for women than men is especially striking when one considers the total population receiving B.A./B.S. degrees, and the percentage of bachelor's degrees awarded to women by disciplines similar to CS.

Table 2 lists the total number of B.A./B.S. degrees awarded in all disciplines from 1980-81 through 1993-94, and the percentage of the recipients that were women. The number of B.A./B.S. degrees awarded in all disciplines continues to increase, and the increase is at a faster pace for women than for men.

Figures 4 and 5 compare the trend of degrees awarded in CS with the trends of degrees awarded in disciplines similar to CS from 1980-81 through 1993-94. The majors within a discipline are determined by the National Center for Education Statistics:

* Bio/Life = Biological/Life Sciences which includes biology, biochemistry and biophysics, botany, cell and molecular biology, microbiology/bacteriology, zoology, and other biological sciences.

* Eng = chemical, civil, electrical, mechanical, and other engineering-related technologies.

* Math = mathematics and statistics.

* Phy = Physical Sciences which includes astronomy, chemistry, geology, physics, and other physical sciences.

Figure 4 illustrates that while the number of B.A./B.S. degrees awarded in other science and engineering disciplines decreased from 1985-86 to 1993-94, the decrease in CS was the most extreme. From 1985-86 to 1993-94, Eng decreased 18.2% (95,660 to 78,225), Math decreased 16.0% (17,147 to 14,396), and Phy decreased 15.3% (21,717 to 18,400), but CS decreased 42.2% (41,889 to 24,200). Bio/Life increased 33.4% (38,524 to 51,383) during the same period. Figure 5 illustrates that the percentages of B.A./B.S. degrees awarded to women by science and engineering disciplines (except CS) increased annually over the last 13 years. CS is the only science and engineering discipline where the percentage of bachelor's degrees awarded to women decreased. From 1980-81 to 1993-94, Bio/Life increased 16.3% (44.1% to 51.3%), Eng increased 44.7% (10.3% to 14.9%), Math increased 10.0% (42.1% to 46.3%), and Phy increased 36.6% (24.6% to 33.6%), but CS decreased 12.6% (32.5% to 28.4%). From 1983-84 to 1993-94, CS decreased 23.5%.

In summary, even though more women are awarded B.A./B.S. degrees, and even though the percentages of B.A./B.S. degrees awarded to women in disciplines similar to CS increased, the percentage of B.A./B.S. degrees awarded in CS to women decreased.

The College of Engineering Effect

We now consider the relationship between the percentage of degrees awarded to women by a CS department, and the college the CS department is within. We find that CS departments in engineering colleges graduate proportionately fewer women on average than CS departments in non-engineering colleges.

We derived the results in the following manner. The National Center for Education Statistics provided a list of the number of degrees awarded in CS for two academic years: 1991-92 and 1992-93. This list was itemized by gender, institution, and degree. A CS department within a university was classified in either an engineering college (CoE) or a non-engineering college (which we denote as A&S), based on the description of the university within the 1993 Peterson's Guide to Graduate Programs in Engineering and Applied Sciences. (Only universities that offer graduate degrees in CS were considered, since most universities without a CS graduate program are within A&S. See [3] for more details.)

Table 3. Data classified in this study

	B.A./B.S.	M.S.	Ph.D.
Academic	Degrees	Degrees	Degrees

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Year	Classified	Classified	Classified
1991-92	11,561 (47.1%) from 263 depts.	7,139 (74.9%) from 243 depts.	671 (86.9%) from 86 depts.
1992-93	11,591 (47.8%) from 260 depts.	7,618 (75.0%) from 241 depts.	691 (85.8%) from 94 depts.

Table 4. The College of Engineering effect

Academic	B.A./B.S.	%	M.S.	%	Ph.D.	%
Year/College	Degrees	Women	Degrees	Women	Degrees	Women
1991-92/CoE	3,633	22.5	2,613	23.6	360	11.7
1991-92/A&S	7,928	28.3	4,526	29.2	311	12.5
1992-93/CoE	3,710	22.8	3,082	23.4	351	12.2
1992-93/A&S	7,881	26.8	4,536	28.2	340	13.2

Although we were not able to classify every department, and although we only considered B.A./B.S. degrees from departments that offer M.S. or Ph.D. degrees, we were able to classify a large number of the CS degrees awarded in 1991-92 and 1992-93 into either CoE or A&S. For example, we were able to classify 47.1% of all B.A./B.S. degrees awarded in CS in 1991-92 (11,561 of 24,557). These 11,561 degrees were awarded from 263 CS departments. (See Table 3 for further details on the data classified in this study.) Note that we only considered degrees awarded in CS; we did not include degrees awarded in computer engineering. (The percentage of degrees in computer engineering awarded to women is dramatically lower than the percentage of degrees awarded in CS to women. For example, only 11.7% of the B.A./B.S. degrees awarded in computer engineering went to women in 1992-93.)

The results are displayed in Table 4. The table contains the number of degrees classified into either CoE or A&S at the B.A./B.S., M.S., and Ph.D. levels, and the percentage of female recipients for the two academic years analyzed. At both the B.A./B.S. and M.S. levels, if a CS department moves from A&S to CoE, the percentage of degrees awarded to women decreases by approximately 18%-26%. At the Ph.D. level, the decrease is less pronounced; if

a CS department moves from A&S to CoE, the percentage of Ph.D. degrees awarded to women decreases by approximately 7%-8%.

The results shown in Table 4 suggest that CS departments in engineering colleges, on average, graduate proportionally fewer women than CS departments in non-engineering colleges. We performed statistical analysis on the percentage of women graduates for the 1991-1992 academic year. We found the difference between the percentage of B.A./B.S. degrees awarded to women by CS departments in engineering colleges and the percentage of B.A./B.S. degrees awarded to women by CS departments in non-engineering colleges was statistically significant with the traditional cutoff of $\text{ALPHA} = 0.01$. The difference for bachelor's degrees was significant both on the raw percentage data and when the percentages were transformed using the arcs in transformation [9]. The difference in the M.S. degrees awarded was significant at $\text{ALPHA} = 0.2$. The statistical analysis strongly suggests that the proportion of females graduating with B.A./B.S. degrees is significantly lower when a CS department is within an engineering college. (In other words, it is highly unlikely the observed difference is a random event.) The statistics do not allow a similar confidence in the significance of the M.S. data.

Table 5. Future predictions of B.A./B.S. degrees awarded in all disciplines: 1994-95 to 2006-07

Academic Year	B.A./B.S. Degrees	% Women
1994-95	1,181,000	54.9
1995-96	1,186,000	55.2
1996-97	1,183,000	55.4
1997-98	1,169,000	56.5
1998-99	1,140,000	56.1
1999-00	1,138,000	56.0
2000-01	1,151,000	56.2
2001-02	1,169,000	56.5
2002-03	1,191,000	56.7
2003-04	1,216,000	57.0
2004-05	1,237,000	57.6

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2005-06	1,253,000	57.8
2006-07	1,268,000	58.0

Over the last decade, we are aware universities that have moved their from a non-engineering college to college (for example, Pennsylvania State University and University of Washington). If CS departments continue to move to engineering colleges, we may continue to see a decrease in the percentage of B.A./B.S. degrees awarded in CS to women. There are, however, other factors that may affect the percentage of B.A./B.S. degrees awarded in CS to women as well.

Future Predictions: 1994-95 through 2006-07

The computer industry is growing rapidly. There is a critical shortage of computer scientists in today's job market - nearly 190,000 unfilled information technology positions, not counting small business, government, and nonprofit employers, exist in the U.S. alone [2]. Furthermore, in the year 2005, it is predicted the number of computer professionals employed as computer scientists and system analysts will be almost double what the numbers were in 1994 [6]. In 1994, there were more than 149,000 and 482,000 computer scientists and system analysts, respectively, in the work force. In 2005, it is predicted there will be more than 282,000 and 927,000 computer scientists and system analysts, respectively, in the work force. As Table 1 shows, we have only been graduating approximately 35,000 students with degrees in CS each year. Thus, it is critical the number of B.A./B.S. degrees awarded in CS over the next decade increases instead of continuing on its current decreasing trend. Fortunately, there is positive evidence a dramatic increase will occur in the near future.

Table 5 lists the projected total number of B.A./B.S. degrees awarded in all disciplines over the next decade, and the projected percentage of the recipients that will be women [8]. The National Center for Education Statistics predict the number of B.A./B.S. degrees awarded at the turn of the century will be slightly fewer than the number currently awarded. However, the number of B.A./B.S. degrees awarded a decade from now will overcome this turn of the century decrease, as well as significantly that is currently being awarded. Furthermore, while the number of B.A./B.S. degrees awarded will fluctuate over the next decade, the percentage of B.A./B.S. degrees awarded to women will continue on its upward trend.

Although the total number of degrees awarded at the B.A./B.S. level is expected to decrease over the next five years, we should see a dramatic increase, not a further decrease, in the number of B.A./B.S. degrees awarded in CS. According to the 1996 CRA Taulbee Survey, the number of B.A./B.S. degrees awarded in CS should increase in the near future, as the number of new bachelor students enrolled in computer science Ph.D-granting departments increased 40% in fall 1996 [1]. Since the number of B.A./B.S. degrees awarded in CS by Ph.D-granting departments should dramatically increase in the near future, we expect to see a corresponding increase in the number of B.A./B.S. degrees awarded in CS by non-Ph.D-granting departments.

However, one question remains: How will the increase in the number of B.A./B.S. degrees awarded in CS affect the percentage of women recipients? As listed in Table 1, the decrease in the number of B.A./B.S. degrees awarded in

CS over the last decade was at a faster pace for women than for men. Will the increase in the number of B.A./B.S. degrees awarded in CS occur at a faster pace for women? Or will the proportion of women continue to lag behind their male colleagues? The 1996 CRA Taulbee Survey does not classify the 40% increase of bachelor students in CS by gender [1], so we can only speculate on what the outcome will be.

First, we consider why there is such an increase in the number of new bachelor students in CS. The 1996 CRA Taulbee Survey suggests the marketplace and the Web contributed to this increase [1]; the job opportunities in CS are becoming well-known, and the Web has brought more attention to our discipline than anything in the past.

Second, let us speculate on how the Web will affect the percentage of B.A./B.S. degrees awarded in CS to women. The seventh study of Web users at the Graphic, Visualization, & Usability Center (GVU) at Georgia Institute of Technology states that the core demographics of Web users are stabilizing [5]. In other words, the rate of change in the demographics is much slower than in previous years; for example, the percentage of female respondents to the seventh survey is almost exactly the same as the percentage of female respondents to the survey the previous year. In the seventh survey, with almost 20,000 unique participants, 31.3% of the responses were from females. While other available Web surveys claim a higher proportion of female respondents, we find the GVV survey is appropriate in our speculation. The GVV survey claims that, by the nature of their sampling method, the respondents represent active Web users. If the Web has affected the increase in new students enrolled at the bachelor's level, we believe it is the active users that are contributing to this effect.

The percentage of B.A./B.S. degrees awarded in CS to women in 1993-94 was 28.4%. Since the female ratio of active Web users is slightly higher (31.3% versus 28.4%), we may see a slight increase in the percentage of degrees awarded in CS to women in the near future. This slight increase, however, is much lower than the 37.1% we enjoyed in 1983-84.

Community Response

Why has the number of B.A./B.S. degrees awarded in CS decreased since 1985? Why is the decrease occurring at a faster pace for women than men? While the number of B.A./B.S. degrees awarded in CS in 1993-94 is almost equivalent to the number of B.A./B.S. degrees awarded in CS in 1982-83 (24,200 versus 24,510), why is the percentage of degrees awarded to women dramatically smaller today (28.4% versus 36.3%)? The percentage of B.A./B.S. degrees awarded to women in all disciplines increased from 1980-81 to 1993-94; the percentages of B.A./B.S. degrees awarded to women in disciplines similar to CS increased over the same time period. Why has the percentage of B.A./B.S. degrees awarded to women in CS decreased? Why is the percentage of B.A./B.S., M.S., and Ph.D. degrees awarded to women by CS departments in engineering colleges smaller than the corresponding percentages in non-engineering colleges? Will the percentage of degrees awarded in CS to women continue to lag behind, as we speculate they will, in the next decade? And, most importantly, what can we, as a community, do to improve the situation?

In a paper on women in science and engineering, John White, Dean of Engineering at Georgia Institute of Technology, said, "If we want a different outcome, we're going to have to do things differently. We're making too little

progress doing more of the same thing. The time for evolution is passed; it's time for revolution" [11]. White requests a revolution to improve on the small amount of progress in attracting and retaining more women in science and engineering over the last decade. Instead of progress, however, we have seen a deterioration in CS. In order to eventually make progress, computer scientists and educators seem to need dramatic change in direction. We hope the CS community will become involved in exploring the options and steering those changes. The ACM Committee on Women in Computing (ACM-W) (4) has established a web site <<http://www.acm.org/women>> that includes data, references, and some of the ideas suggested for improving the current situation. There is also an interactive survey available at the web site.

We urge the CS community to consider the posed questions and respond to the survey. We will compile the responses of the community and present the results, including strategies proposed for attracting and retaining women in CS, in a future issue of Communications. If we work together, perhaps we can identify and implement the changes that are necessary to reverse the alarming decline of women's participation in CS.

1 The number of degrees awarded for the academic years 1994-95 and beyond are not yet available from the National Center for Education Statistics at the U.S. Department of Education.

2 Faculty members have a responsibility to disseminate information about the job market to their students, thus allowing students to make informed decisions.

3 The two most recent CRA Taulbee surveys cite the unemployment rate of new Ph.D. graduates at 1.7% in 1995 and 0.8% in 1996 [1]. Some claim the unemployment rate of the Taulbee surveys may be misleading [4]; for example, the 1995 and 1996 surveys do not know what 18.5% and 15.2%, respectively, of the Ph.D. graduates are doing. The unemployment rate from [6], however, is based on a report from the Survey of Doctorate Recipients conducted by the National Science Foundation. Since the two unemployment rates are comparable, we believe the rate is sound.

4 The mission of ACM-W is to engage in activities that aim to increase the representation of women in computing.

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HEADLINE: National assessment of early elementary teachers' perceived self-efficacy for teaching tobacco prevention based on the CDC guidelines; Centers for Disease Control and Prevention

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AUTHOR-ABSTRACT:

A national random sample of 505 early elementary school teachers completed a 47-item survey to determine their perceived self-efficacy for teaching tobacco prevention education based on the Centers for Disease Control and Prevention guidelines for grades K-3, their training status on tobacco prevention, and their level of teaching about tobacco prevention. Results indicated most of the teachers were female, White, held a bachelor's or master's degree, never smoked, and had not received formal tobacco prevention training. The teachers' scores were high for efficacy expectations, and for outcome expectations. Conversely, for outcome value, teachers ranked tobacco prevention fifth out of six health topics, as the most important health topic to teach elementary students. Also, teachers trained in four tobacco areas or more had statistically significantly higher scores for efficacy expectations than those trained in three or fewer areas. Statistically significant positive associations were also found between years of teaching tobacco prevention and efficacy and outcome expectation scores, and between the amount of time that tobacco prevention was taught during the past school year and outcome value.

BODY:

A compelling need exists in the United States to effectively implement school-based health programs on tobacco prevention.[1] Tobacco use is documented as the most preventable cause of illness and death in the United States[2,3] and a major public health problem among youth in the United States.[4] Adverse effects of smoking on the health of children and adolescents who smoke include a reduction in lung growth, lung function, and physical fitness. Adverse effects for smokeless tobacco use include periodontal disease and lesions in the oral soft tissue.[4]

The health status of future generations must be protected. To achieve this public health goal, measures should be taken to empower children and adolescents to abstain from tobacco use and help those who use tobacco to stop.[1] Data indicate that the onset, regular use, and dependence on tobacco products (nicotine addiction) most often begins between 10 and 18 years of age.[5] Also, current estimates show that more than 3,000 children and adolescents begin

smoking each day,[1] and approximately 2.1 million children 12 through 17 years of age are smokers.[6]

A variety of school-based tobacco prevention programs have been implemented to reduce tobacco use among youth. However, several programs have shown only modest effects in achieving this goal.[7-9] Moreover, a higher prevalence of current smoking has been reported among high school students in 1995 than in 1993 and 1991.[10] As a result, recommendations have been made that tobacco prevention education should be administered before the prime age at which tobacco initiation occurs (12 to 14 years),[11] before initiation rates begin to increase rapidly (soon after 10 years of age),[12] and before grade six, when tobacco prevention programs focus on pre-smoking onset issues.[7]

The aforementioned findings prompted the Centers for Disease Control and Prevention (CDC) to recommend that tobacco prevention education programs be appropriately designed and implemented in grades K-12.[1] In response to the recommendations, and relative to the present study, the CDC developed instructional concepts for school health programs to implement in an effort to prevent tobacco use and addiction among children in grades K-3 (Table 1).[1] Relative to the implementation process and the present study, consideration must also be given to factors which can positively affect the implementation of tobacco prevention programs, such as the training teachers receive on tobacco prevention,[13,14] their beliefs that they can effectively teach tobacco prevention curricula, and their beliefs that tobacco prevention is important for their students.[15]

A comprehensive review of the literature failed to reveal any assessments of early elementary teachers' perceived self-efficacy for teaching tobacco prevention education, and whether self-efficacy for teaching about tobacco prevention was related to formal training status for tobacco prevention, or experience in teaching tobacco prevention education. Thus, this study employed Bandura's self-efficacy model[16] to investigate early elementary teachers' perceived self-efficacy for teaching tobacco prevention education based on the CDC instructional concepts for tobacco prevention (K-3) (Table 1). Bandura's self-efficacy model is comprised of the following three components[16]: efficacy expectations, which refer to one's belief regarding his/her ability to perform a certain behavior needed to produce a desired outcome; outcome expectations, which measures one's belief that performing a certain behavior will result in a specific outcome; and outcome value, which denotes the degree of importance one ascribes to the outcome.[16]

More specifically, this study answered the following questions: What is the level of early elementary teachers' perceived confidence in their ability (efficacy expectation) to effectively teach early elementary students the CDC concepts for tobacco Prevention education? What is the level of early elementary teachers' belief that the CDC concepts for tobacco prevention education, when effectively taught, will have a positive impact on their students (outcome expectations)? What is the level of early elementary teachers' perceived importance of tobacco prevention education (outcome value)? What is the training status of early elementary teachers for tobacco prevention education? If teachers were trained, what are the areas of tobacco prevention in which they received training? What impact will experience in teaching tobacco prevention education and training in tobacco prevention education have on the teachers' efficacy expectation, outcome expectation, and outcome value scores?

METHODS

Participants

Based on the coterminous 48 states, a national random sample of 300 second grade teachers and 300 third grade teachers was selected. A data base list of each state's school districts was obtained.[17] From each state's list, a systematically selected random sample of seven school districts was identified. Two elementary schools were systematically and randomly identified from each of the seven school districts, resulting in a total of 672 elementary schools. Out of this total, a simple random sample of 300 teachers was selected from the 336 schools which requested the attention of a second grade teacher and mailed a survey. Likewise, a simple random sample of 300 teachers was selected from the remaining 336 schools which requested the attention of a third grade teacher and mailed a survey. In the event that a survey was returned because the school was closed, another school was randomly selected from the backup list comprised of the remaining 72 schools.

Instrument Development

A 47-item survey instrument was developed for the study. The survey items were closed-format design. The first section consisted of two outcome value items and five background items. For outcome value, the teachers were requested to rank, from 1 = the highest to 6 = the lowest, six categorical health topics[18] according to their perceived importance regarding curriculum development for elementary students, and for reducing a person's chance of dying prematurely of an illness. The total score for outcome value was calculated by adding the numbers from the two items. The possible range of scores for outcome value was 2-12. The second section of the survey contained 15 efficacy expectation items. The third section consisted of 15 outcome expectation items. A Likert-type unipolar response format was used for the second and third sections of the survey. The possible range of scores for the second and third sections was 0-75. The final section of the survey contained seven demographic items.

Content and face validity were established by a national panel of authorities in the area of school-based tobacco prevention education and/or the self-efficacy model. Authorities consisted of researchers affiliated with universities, the CDC, and a research and social marketing firm. Notable suggestions regarding format and content of the instrument were used to produce the final instrument. A pilot study with a convenience sample of 36 early elementary teachers indicated that no further changes were required.

Construct validity was determined through principal axis factoring using varimax rotation.[19] The eigenvalues of the factor scree plot indicated that the instrument consisted of three distinct factors. The minimum factor loading for the agreement of correlation of each item with the total pattern of responses was set at the absolute value of .33, which was found to be within the range presented by various researchers who have reported factor analysis (.30-.40).[20-23] Further, the items for the three a priori factors correlated most highly with their intended factors.

Stability reliability was conducted by distributing the instrument to 23 early elementary teachers approximately one week following the first distribution. Pearson correlation coefficients found that stability

reliability was .90 for efficacy expectation, and .46 for outcome expectation. Spearman's rho indicated a stability reliability of .67 for outcome value. Calculating Cronbach alphas on the responses from the total sample revealed that internal reliability for efficacy and outcome expectations was .92 and .95, respectively.

Procedures

A two-wave mailing procedure was used during the spring of 1996. Initially, each teacher was mailed a copy of the survey, a hand-signed cover letter describing the purpose of the study, [24] \$ 1 gratuity, [25] and a prestamped preaddressed return envelope. [26] Approximately two weeks following the first mailing, the teachers received a handsigned cover letter which thanked those who responded and encouraged those who did not to respond. Another copy of the survey and a prestamped, preaddressed return envelope were also included in the second mailing. To ensure anonymity and confidentiality, the surveys were not coded. The SPSS statistical software package was used for all data analyses. [27] A level of significance was determined a priori at .05 to reduce the likelihood of making a Type I error.

Table 1 CDC Concepts for School-based Health Programs to Prevent Tobacco Use and Addiction Among Early Elementary Students

Knowledge -- Students will learn that:

- * A drug is a chemical that changes how the body works.
- * All forms of tobacco contain a drug called nicotine.
- * Tobacco use includes cigarettes and smokeless tobacco.
- * Tobacco use is harmful to health.
- * Stopping tobacco use has short-term and long-term benefits.
- * Many persons who use tobacco have trouble stopping.
- * Tobacco smoke in the air is dangerous to anyone who breathes it.
- * Many fires are caused by persons who smoke.
- * Some advertisements try to persuade persons to use tobacco.
- * Most young persons and adults do not use tobacco.
- * Persons who choose to use tobacco are not bad persons.

Attitudes -- Students will demonstrate that:

- * A personal commitment not to use tobacco.
- * Pride about choosing not to use tobacco.

Skills -- Students will be able to:

- * Communicate knowledge and personal attitudes about tobacco use.
- * Encourage other persons not to use tobacco.

Note. From Centers for Disease Control and Prevention. Guidelines for school health programs to prevent tobacco use and addiction. MMWR. 1994;43(RR-2):10-11.

RESULTS

Out of the 600 surveys mailed to early elementary teachers, 531 were returned, which produced an 89% return rate. However, 22 teachers returned incomplete surveys, and four stated they were not second or third grade teachers. Thus, a total of 505 surveys were used for the final analyses.

Demographic data of the teachers indicated that most teachers were female (92%), White (89%), held a bachelor's (51%) or master's (41%) degrees, and never smoked (73%). Mean age was 43.6 years (SD = 9.27). Mean number of years teaching was 16.8 (SD = 8.8). Forty-three percent taught second grade, 44% taught third grade, and 13% taught more than one grade. Approximately two-thirds of the teachers taught in rural communities. Analysis of the racial composition of the student bodies of the schools found the following data: White (M = 78.5, SD = 27.2), African-American (M = 13.6, SD = 24.0), and Hispanic (M = 6.0, SD = 14.9).

Data for tobacco prevention background items are illustrated in Table 2. A little over two-thirds of teachers (68%) reported teaching tobacco prevention three years out of the past three years. A wide range of responses (0-1,920 minutes) emerged for the best estimate of total time teachers reported teaching about tobacco prevention during the past school year (M = 150.0 minutes, SD = 196.3 minutes). The most frequently reported measure of total time teaching about tobacco prevention was 120 minutes. Further, one of five (20%) reported they received formal training on tobacco prevention, of which 20% received training on the consequences of tobacco use.

Table 2 Tobacco Prevention Background Data for Respondents

Item	n	%	M	SD	N
How many years out of the past three years taught about tobacco prevention					
0 years	72	14	2.30	1.11	502
1 Year	43	9			
2 Years	45	9			
3 Years	342	68			
Total time (minutes) taught tobacco prevention during last school year			150	196.27	478
Received formal training					
Yes	102	20			
No	396	80			498

Areas of training received(*)

Consequences	99	20	
Social influences	81	16	
Prevalence of tobacco use	61	12	
Communication skills	92	18	
Implement program	61	12	
Parents/families	34	7	
Evaluate program	21	4	
Other	6	1	498

Location of school

Inner City	15	3	
Urban	32	7	
Suburban	134	27	
Rural	310	63	491

Racial composition of schools

White	78.48	27.17	484
African-American	13.64	24.05	463
Hispanic	6.05	14.93	461
Other	3.52	11.41	458

Note. (*) Multiple responses were an option. As a result, the item numbers do not total 498, and the item percentages do not total 100%.

The efficacy expectation subscale of the instrument was comprised of 15 items, which were summed to create a total score (Table 3). For the knowledge items, most teachers were highly confident in their ability to effectively teach their students all but one CDC concept: that most young persons and adults do not use tobacco. In comparison, approximately two-thirds of teachers felt highly confident in their ability to effectively teach their students the attitudes and skills items. To better understand the dispersion of the scores, the potential range was divided to represent three groups: low (0-24), medium (25-50), and

high (51-75) perceived efficacy expectations. Eighty-five percent of teachers were found to score in the high group, with 14% in the medium group. Overall, the mean score for efficacy expectations was very high: 61.5 (SD = 10.7).

Close to three-fourths of teachers felt highly confident regarding their overall ability to effectively teach the CDC concepts on tobacco prevention. A Pearson product-moment correlation coefficient revealed a high positive statistically significant relationship between the teachers' efficacy expectation total scores and their overall confidence scores ($r = .83$, p [is less than] .001).

The outcome expectation subscale was comprised of 15 items which were summed to create a total score (Table 4). For knowledge based items, at least three-fourths or more of teachers reported it was highly likely that, if the CDC concepts were taught effectively, students would be more knowledgeable regarding all concepts except the one that most young persons and adults do not use tobacco. For attitude items, approximately three-fourths of teachers believed it was highly likely that students would be better able to make a personal commitment and show pride about choosing not to use tobacco if the CDC concepts were effectively taught. Likewise, close to three-fourths of teachers believed it was highly likely that students would be better able to communicate about tobacco smoke and encourage other persons not to use tobacco if the CDC concepts were effectively taught.

Ninety percent of teachers expressed that, overall, it was highly likely that students would be more knowledgeable about tobacco if the CDC concepts were taught effectively, while 72% of teachers expressed that overall students would be more willing not to use tobacco. As with the efficacy expectation subscale, the range of scores was divided into three groups: low, medium, and high. Eighty-six percent were found to be in the high scoring group (51-75), with 13% in the medium group (25-50). Similar to the efficacy expectation subscale, the mean score for outcome expectation was very high: 62.4 (SD = 10.7). Also, a moderate positive statistically significant relationship appeared

Suzanne M. Perry-Casler, PhD, Project Coordinator, The James and Jennifer Harrell Center for the Society of Domestic Violence, College of Public Health, University of South Florida, Tampa, FL 33612-3807; James H. Price, PhD, MPH, Professor of Health Education; Susan K. Telljohann, HSD, CHES, Associate Professor of Health Education, Dept. of Health Promotion; Barbara K. Chesney, PhD, MPH, Associate Professor of Sociology, Dept. of Sociology, Anthropology and Social Work, University of Toledo, Toledo, OH 43606. This article was submitted February 14, 1996, and accepted for publication April 28, 1997. between the teachers' outcome expectation total score and their overall score on students' knowledge about tobacco and students' willingness to not use tobacco ($r=.71$, p [less than].001, and $r=.55$, p [less than].001, respectively).

Teachers were also queried about the value they place on tobacco prevention as it relates to two groups: early elementary students and people in general (Table 5). Teachers were requested to rank the six health topics from 1=the highest to 6=the lowest for each group. Tobacco use was ranked fifth as the most important health topic to include in a curriculum on healthy lifestyles for early elementary students, and it was ranked fourth as the most important topic for people to reduce their chances of dying prematurely of an illness.

Analysis of variance (ANOVA) tests were computed to examine the effects of various independent variables on the teachers' efficacy expectation and outcome expectation scores. Two-way ANOVAs revealed that neither efficacy expectation or outcome expectation scores differed significantly based on gender of the teachers or grades they taught. In comparison, a two-way ANOVA computed for training status and number of areas in which they were trained found that the efficacy expectation scores were statistically significantly different between teachers who were trained in four or more areas of tobacco prevention and those who were trained in three areas or fewer ($F=3.8$, $df=2$, $p=.03$). One-way ANOVAs found that neither efficacy expectation or outcome expectation scores differed significantly based on educational level, type of community in which the teachers' schools were located, or smoking status.

The effect of smoking status on the aforementioned scores was further analyzed by randomly selecting 19 teachers from the total group of never smokers ($N=369$), and 19 from the total group of former smokers ($N=115$). This approach provided a match for the 19 teachers who reported that they were current smokers. One-way ANOVAs showed no significant differences in either the efficacy expectation scores or the outcome expectation scores based on smoking status.

Pearson correlation coefficients found a statistically significant correlation between efficacy expectation scores and number of years the teachers taught tobacco prevention ($r=.25$, $p[\text{less than}].001$) and between outcome expectation scores and number of years teachers taught tobacco prevention ($r=.15$, $p[\text{less than}].01$). For both analyses, teachers who taught tobacco prevention four or more years had statistically significant higher efficacy and outcome expectation scores than teachers who taught tobacco prevention for three or fewer years. While statistically significant, the correlation scores were very modest in practical terms. In contrast, no statistically significant correlations were observed between years of teaching experience, racial composition of the schools, and either the efficacy or outcome expectation scores.

With respect to outcome value scores, Mann-Whitney U tests revealed no statistically significant differences between outcome value scores based on gender of the teachers, formal training received, and the number of areas in which they received formal training. Likewise, Kruskal-Wallis one-way analysis of variance tests revealed no statistically significant differences between outcome value scores based on educational level, grades taught, type of community in which the schools were, how many years out of the past three years teachers taught tobacco prevention, and smoking status of the teacher. Spearman rho correlations were not statistically significant for relationships between outcome value scores and age, years of teaching experience, and racial composition of the school. Conversely, a statistically significant positive association was observed between outcome value scores and best estimate of total time tobacco prevention was taught during the past school year ($[P_i]=.19$, $p[\text{less than}].001$). The more minutes teachers reported teaching tobacco prevention during the past school year, the higher the outcome value score. Again, this was a very modest relationship.

DISCUSSION

This national study employed Bandura's self-efficacy model[6] to assess second and third grade teachers' perceived self-efficacy for teaching tobacco prevention education based on the CDC guidelines for K-3 (Table 1). In

addition, the effects the teachers' experience and training status with regard to teaching tobacco prevention education would have on the teachers' efficacy expectation, outcome expectation, and outcome value scores were analyzed.

Data indicated that most teachers appeared to have high efficacy expectations with respect to their ability to effectively teach the CDC's K-3 instructional concepts on tobacco prevention. A major function of the self-efficacy model is to identify strengths and weaknesses of individuals' efficacy expectations regarding a specific behavior.[16] Thus, to better understand what this finding represents, more in-depth analyses of the knowledge, attitude, and skills items of the efficacy expectation subscale were conducted (Table 3). The highest percentages of teachers who comprised the highly confident group were found to cluster within the knowledge items. This was the area where their strength appeared to be the greatest. In comparison, a lower percentage of teachers reported that they felt highly confident in their ability to teach their students the CDC attitude and skills items for tobacco prevention.

[TABULAR DATA NOT REPRODUCIBLE]

Based on the self-efficacy theory, efficacy expectations can vary according to the individuals' perceived level of difficulty of the task.[16] One reason that a lower percentage of teachers felt highly confident regarding the attitude and skills items, which consist of intrapersonal and interpersonal communication skills, may be that they viewed these tasks as more difficult to teach than the knowledge items. This is understandable since only 18% of teachers reported receiving formal training in communication skills for tobacco prevention.

Most teachers were found to also have high perceived outcome expectations for teaching the CDC tobacco prevention concepts effectively. In-depth analyses of the knowledge, attitudes, and skills components of the outcome expectation subscale provided results (Table 4) which parallel those from the efficacy expectation subscale. Compared to the knowledge items, a lower percentage of teachers reported it was highly likely that, when taught effectively, the CDC instructional concepts would have a positive impact on students' attitudes regarding tobacco use, and their skills to communicate effectively on tobacco use. In terms of this finding, the teachers may have been less sure about the outcome as a result of their lower efficacy expectations for teaching communication skills.

A major concern regarding the aforementioned efficacy and outcome expectation findings is that the traditional information model (knowledge based) for teaching tobacco prevention education has proven to be the least successful in producing a positive change in students' attitudes and behavior regarding tobacco use[29-31]; whereas the social influence model (modeling skills to resist pressure to use tobacco and making a public commitment not to smoke) has proven to be the most successful in producing a positive change in students' attitudes and behavior for tobacco use.[29-31] Thus, it is suggested that intense in-service training in the social influence model may increase teacher self-efficacy in these areas, which in turn might facilitate a reduction in immediate and long-term tobacco use among youth.

One of the key issues regarding the social norms and the acceptability of tobacco use is that youth tend to overestimate the relevance of tobacco use among their peers and adults.[28] Thus, teaching students the concept of a

tobacco free norm is essential to reduce their chances of using tobacco.[28] A perplexing issue here is that the lowest percentage of teachers in the highly confident group for efficacy expectation (48%) and in the highly likely group for outcome expectations (68%) was found regarding the prevalence of tobacco use; that most young persons and adults do not use tobacco. This deficiency, which may indicate that the teachers are uncertain about or overestimate the prevalence of tobacco use, could hinder the success of tobacco prevention programs. This finding, with the fact that only 12% of teachers who have received formal training on tobacco prevention received training on the prevalence of tobacco use, reflects a need to emphasize the prevalence of tobacco use when designing in-service programs for tobacco prevention education.

The occurrence of a specific behavior also depends on the degree to which the outcome of that behavior is valued.[12] Analyses for outcome value indicated that the teachers did not have a clear understanding that tobacco use is the most preventable cause of mortality and morbidity in the United States and that tobacco prevention education can have a positive impact on the health status of Americans.[2, 3] The teachers ranked tobacco prevention fifth as the most important health topic to teach elementary students, and fourth for people to reduce their chances of dying prematurely of an illness (Table 5). One reason why the teachers ranked tobacco prevention so low for elementary students may be that they believed that second and third graders are at a low risk for using tobacco. Also, the teachers may have believed that tobacco prevention is taught during a later grade, so there was no need to address it in the second and third grades.

[TABULAR DATA NOT REPRODUCIBLE]

According to the self-efficacy theory, past performances or experiences may enhance individuals' perceptions of their efficacy expectations.[16] This study supports this contention. Teachers with more experience teaching tobacco prevention and more training in tobacco prevention had statistically significantly higher efficacy expectations scores than teachers who had less experience and training in tobacco prevention. Statistically significant positive associations were also found between the teachers' outcome expectation scores and the number of years the teachers taught tobacco prevention and between outcome value scores and best estimate of total time tobacco prevention was taught during the past school year.

CONCLUSION

Based on the aforementioned findings, the teachers' high scores for efficacy and outcome expectations must be considered with caution. For example, if the teachers were truly knowledgeable about tobacco use, they would have known that tobacco use was the most preventable cause of death in the United States. Moreover, effectively teaching knowledge concepts on tobacco prevention has less of an impact on reducing tobacco use among youth than effectively teaching attitude and skills concepts on tobacco prevention. One must also consider the concept of "reality" when interpreting the findings. Perhaps the teachers simply were over confident of their perceptions of their abilities (efficacy expectations). If not adequately trained, it is plausible that the teachers may have thought they were capable and simply did not understand the limitations of their skills. Bandura contended that efficacy expectations are defined and measured independent of performing a task.[16]

Moreover, high scores for efficacy and outcome expectation scales may not indicate, as does other research, that a measure of self-efficacy predicts performing a specific behavior.[33] If teachers are less confident in their ability to effectively teach the CDC attitude and skill items on tobacco prevention and perceive the outcome of teaching tobacco prevention as questionable regarding these items, then it is plausible that they will not properly implement tobacco prevention programs that emphasize attitude and the social influence model components.

Preservice and in-service tobacco prevention programs should be specifically designed and promoted for primary grade teachers. Emphasis must be placed on the importance of tobacco prevention education from a public health perspective. Finally, intense training must be provided in the areas of social influences and the prevalence of tobacco use so that tobacco prevention programs that include these skills and information can be properly implemented.

Based on the random national sampling technique used in this study, the findings may have strong external validity for all second and third grade teachers. However, the study's limitations must be noted. First, the data collected were anonymous and self-reported; therefore, some teachers may have responded in a socially desirable manner. Second, the monothematic format of the instrument may have resulted in a response set bias by some respondents. Last, a follow-up to this study is needed to determine whether self-reported efficacy expectations for teaching tobacco is congruent with actual teaching behaviors. Until this last issue is determined, findings from this study must be cautiously considered.

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HEADLINE: Tobacco use among high school students - United States, 1997.

BODY:

Tobacco use is the single leading preventable cause of death in the United States.[1] Approximately 80% of tobacco use occurs for the first time among youth aged [is less than] 18 years,[2] and the prevalence of cigarette smoking among adolescents increased during the early 1990s.[3] To determine prevalence rates of cigarette, smokeless tobacco (chewing tobacco or snuff), and cigar use for US high school students, the Centers for Disease Control and Prevention (CDC) analyzed data from the 1997 Youth Risk Behavior Survey (YRBS). This report summarized the results of the analysis, which indicate that the prevalence of current cigarette smoking among US high school students increased from 27.5% in 1991 to 36.4% in 1997 and that, in 1997, 42.7% of students used cigarettes, smokeless tobacco, or cigars during the 30 days preceding the survey.

YRBS, a component of CDC's Youth Risk Behavior Surveillance System,[4] biennially measures the prevalence of priority health-risk behaviors among youth through representative national, state, and local surveys. The 1997 national YRBS used a three-stage cluster sample design to obtain a representative sample of 16,262 students in grades 9-12 in the 50 states and the District of Columbia. The school response rate was 79.1%, the student response rate was 87.2%, and the overall response rate was 69.0%. Data were weighted to provide national estimates, and SUDAAN[R] (Software for the Statistical Analysis of Correlated Data) was used to calculate standard errors for determining 95% confidence intervals. Difference between prevalence estimates were considered statistically significant if the 95% confidence intervals did not overlap. (Use of trade names and commercial sources is for identification only and does not imply endorsement by CDC and the US Dept. of Health and Human Services.)

Students completed a self-administered questionnaire that included questions about cigarette, smokeless tobacco, and cigar use. Lifetime cigarette smokers were defined as students who had ever smoked cigarettes, even one or two puffs. Current product use on [is greater than or equal to] 1 of the 30 days preceding the survey. Frequent cigarette use was defined as smoking cigarettes on [is greater than or equal to] 20 of the 30 days preceding the survey. Any current tobacco use was defined as use of cigarettes, smokeless tobacco, or cigars on [is greater than or equal to] 1 of the 30 days preceding the survey. Data are presented only for non-Hispanic black, non-Hispanic white, and Hispanic students because the numbers of students from other racial/ethnic groups were too small for meaningful analysis.

Prevalence of Cigarette Use

The overall prevalences of lifetime, current, and frequent cigarette use were 70.2%, 36.4%, and 16.7%, respectively (Table 1). The prevalence of lifetime cigarette smoking was higher among Hispanic male students (76.9%) than among white male students (70.4%). The prevalence of current cigarette smoking was higher among white students (39.7%) than Hispanic (34.0%) and black (22.7%) students, and Hispanic students (34.0%) were more likely to report current cigarette smoking than black students (22.7%). Among males, the prevalence of current cigarette smoking was higher among white students (39.6%) than black students (28.2%). Among females, the prevalence of current cigarette smoking was higher among white students (39.9%) than Hispanic (32.3%) and black (17.4%) students, and Hispanic female students (32.3%) were more likely to report current cigarette smoking than black female students (17.4%). Among black students, males (28.2%) were more likely than females (17.4%) to report current cigarette smoking.

Table 1 Percentage of High School Students[a] Who Used Cigarettes, Smokeless Tobacco, or Cigars by Gender, Race/Ethnicity, and Grade -- United States, Youth Risk Behavior Survey, 1997

Cigarette Use

Category	Lifetime[b]		Current[c]	
	%	(95% [CI.sup.h])	%	(95% CI)
Gender				
Male	70.9	([+ or -] 1.9)	37.7	([+ or -] 2.7)
Female	69.3	([+ or -] 2.6)	34.7	([+ or -] 2.8)
Race/Ethnicity[i]				
White,				
non-Hispanic	70.4	([+ or -] 2.3)	39.7	([+ or -] 2.4)
Male	70.4	([+ or -] 2.4)	39.6	([+ or -] 3.8)

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Female	70.3	([+ or -] 3.3)	39.9	([+ or -] 3.2)
Black, non-Hispanic	68.4	([+ or -] 4.4)	22.7	([+ or -] 3.8)
Male	70.1	([+ or -] 4.7)	28.2	([+ or -] 5.5)
Female	66.8	([+ or -] 5.2)	17.4	([+ or -] 3.9)
Hispanic	75.0	([+ or -] 2.7)	34.0	([+ or -] 2.7)
Male	76.9	([+ or -] 3.6)	35.5	([+ or -] 3.6)
Female	72.7	([+ or -] 3.9)	32.3	([+ or -] 3.7)
Grade				
9	67.7	([+ or -] 5.1)	33.4	([+ or -] 5.1)
10	70.0	([+ or -] 3.9)	35.3	([+ or -] 4.1)
11	68.8	([+ or -] 3.1)	36.6	([+ or -] 3.6)
12	73.7	([+ or -] 4.1)	39.6	([+ or -] 4.9)
Total	70.2	([+ or -] 1.9)	36.4	([+ or -] 2.3)

Cigarette Use

Current

Smokeless

Frequent[d]

Tobacco Use[e]

Category	%	(95% CI)	%	(95% CI)
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Gender

Male	17.6	([+ or -] 2.7)	15.8	([+ or -] 3.7)
Female	15.7	([+ or -] 2.1)	1.5	([+ or -] 0.7)

Race/Ethnicity[i]

White,

non-Hispanic	19.9	([+ or -] 2.2)	12.2	([+ or -] 2.5)
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Male	19.8	([+ or -] 3.3)	20.6	([+ or -] 4.0)
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Female	20.1	([+ or -] 3.2)	1.6	([+ or -] 0.9)
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Black,

non-Hispanic	7.2	([+ or -] 1.8)	2.2	([+ or -] 1.1)
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Male	10.1	([+ or -] 3.1)	3.2	([+ or -] 1.7)
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Female	4.3	([+ or -] 1.8)	1.3	([+ or -] 1.2)
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Hispanic	10.9	([+ or -] 2.6)	5.1	([+ or -] 2.3)
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Male	13.2	([+ or -] 3.7)	8.4	([+ or -] 3.3)
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Female	8.1	([+ or -] 2.7)	1.2	([+ or -] 1.0)
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Grade

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9	13.1	([+ or -] 3.8)	9.7	([+ or -] 2.7)
10	15.0	([+ or -] 1.9)	6.8	([+ or -] 1.7)
11	18.9	([+ or -] 2.8)	10.0	([+ or -] 2.5)
12	19.4	([+ or -] 3.1)	10.5	([+ or -] 3.6)
Total	16.7	([+ or -] 1.9)	9.3	([+ or -] 2.2)

Category	Current Cigar Use[f]		Any Current Tobacco Use[g]	
	%	(95% CI)	%	(95% CI)
Gender				
Male	31.2	([+ or -] 2.3)	48.2	([+ or -] 2.8)
Female	10.8	([+ or -] 2.4)	36.0	([+ or -] 2.8)
Race/Ethnicity[i]				
White, non-Hispanic				
Male	32.5	([+ or -] 2.1)	51.5	([+ or -] 2.4)
Female	9.6	([+ or -] 2.6)	40.8	([+ or -] 3.1)
Black, non-Hispanic				
	19.4	([+ or -] 3.2)	29.4	([+ or -] 3.0)

Male	28.1	([+ or -] 5.3)	37.6	([+ or -] 4.7)
Female	11.0	([+ or -] 2.9)	21.5	([+ or -] 4.2)

Hispanic	20.3	([+ or -] 4.4)	36.8	([+ or -] 3.4)
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Male	26.3	([+ or -] 7.0)	41.3	([+ or -] 5.0)
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Female	13.0	([+ or -] 2.8)	31.4	([+ or -] 3.8)
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Grade

9	17.3	([+ or -] 2.9)	38.0	([+ or -] 5.3)
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10	22.3	([+ or -] 3.4)	40.9	([+ or -] 4.1)
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11	24.2	([+ or -] 2.9)	44.2	([+ or -] 3.1)
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12	23.8	([+ or -] 4.2)	47.0	([+ or -] 6.1)
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Total	22.0	([+ or -] 2.1)	42.7	([+ or -] 2.3)
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[a] - N = 16,262.

[b] - Ever tried cigarette smoking, even one or two puffs.

[c] - Smoked cigarettes on [is greater than or equal to] 1 of the 30 days preceding the survey.

[d] - Smoked cigarettes on [is greater than or equal to] 20 of the 30 days preceding the survey.

[e] - Used smokeless tobacco on [is greater than or equal to] 1 of the 30 days preceding the survey.

[f] - Smoked cigars on [is greater than or equal to] 1 of the 30 days preceding the survey.

[g] - Smoked cigarettes, used smokeless tobacco, or smoked cigars on [is greater than or equal to] 1 of the 30 days preceding the survey.

[h] - Confidence interval.

[I] - Numbers of other racial/ethnic groups were too small for meaningful analysis.

The prevalence of frequent cigarette smoking was higher among white students (19.9%) than among Hispanic (10.9%) and black (7.2%) students. Among males, the prevalence of frequent cigarette smoking was higher among white students (19.8%) than black students (10.1%). Among females, the prevalence of frequent cigarette smoking was higher among white students (20.1%) than Hispanic (8.1%) and black (4.3%) students. Among black students, males (10.1%) were more likely than females (4.3%) to report frequent cigarette smoking.

Trend analyses of current cigarette smoking found significantly increasing trends overall and among all racial/ethnic subgroups (p [is less than] 0.001). The overall prevalence of current cigarette smoking increased from 27.5% in 1991 to 36.4% in 1997. Among white students, current cigarette smoking increased from 30.9% in 1991 to 39.7% in 1997. Among black students, current cigarette smoking increased from 12.6% in 1991 to 22.7% in 1997. Among Hispanic students, current cigarette smoking increased from 25.3% in 1991 to 34.0% in 1997.

Prevalence of Smokeless Tobacco Use

The overall prevalence of current smokeless tobacco use was 9.3% (Table 1). The prevalence of current smokeless tobacco use was higher among male students (15.8%) than female students (1.5%) and among white students (12.2%) than black (2.2%) and Hispanic (5.1%) students. White male students (20.6%) were more likely than any other subgroup to report current smokeless tobacco use; Hispanic male students (8.4%) were more likely than black male students (3.2%) to report this behavior. Among Hispanic students, males (8.4%) were more likely than females (1.2%) to report current smokeless tobacco use.

Prevalence of Cigar Use

The overall prevalence of current cigar use was 22.0% (Table 1). Male students (31.2%) were more likely to use cigars than female students (10.8%). This difference held within each racial/ethnic subgroup. Ninth grade students (17.3%) were less likely than 11th grade students (24.2%) to use cigars.

Prevalence of Any Current Tobacco Use

The overall prevalence of any current tobacco use was 42.7% (Table 1). Male students (48.2%) were more likely to report any current tobacco use than female students (36.0%), and this difference held within each racial/ethnic subgroup. The prevalence of any current tobacco use was higher among white students (46.8%) than Hispanic (36.8%) and black (29.4%) students. These differences held for both male and female students. The prevalence of any current tobacco use was higher among Hispanic students (36.8%) than black students (29.4%) overall and among female students (31.4% of Hispanic females and 21.5% of black females).

Editorial Note: This report is the first to include cigarette, smokeless tobacco, and cigar use in a measure of current tobacco use and the first to report on past-month cigar use among a nationally representative sample of high school students. The increasing prevalence of cigarette smoking since 1991, the high rate of smokeless tobacco and cigar use, and the high rate of any tobacco use suggest that a major proportion of US youth already have or are at risk for nicotine addiction[5,6] and the subsequent health problems caused by tobacco

use.[2,6]

In 1997, the prevalence of current cigarette smoking was 32% higher than in 1991; current cigarette smoking increased 80% among black students, 34% among Hispanic students, and 28% among white students. The reasons for the large differences in overall prevalence of current cigarette smoking and the increases in cigarette smoking among students in all the racial/ethnic groups are unclear and require further investigation. CDC is conducting research to help explain these differences and the reasons for continued increases in tobacco use among all youth.

The findings in this report are subject to at least two limitations. First, these data apply only to youth who attend high school and, therefore, are not representative of all persons in this age group. In 1996, only 6% of persons aged 16-17 years were not enrolled in a high school program and had not completed high school.[7] Second, the measure of any current tobacco use described in this report might be an underestimate, because it does not include measures of pipe and "roll-your-own" tobacco smoking.

In 1994, CDC recommended that school-based tobacco-use prevention programs begin in elementary school and continue through 12th grade, with intensive instruction for students in grades six through eight (ie, up to 10 smoking-focused sessions each year).[8] Data from the 1994 School Health Policies and Programs Study indicated that only 55% of middle/junior high and 47% of senior high school health education teachers taught tobacco-use prevention as a major topic.[9] Of these teachers, 43% of middle/junior high and 42% of senior high school teachers taught only one or two classes on the topic. Additional research findings indicate that school-based tobacco-use prevention programs are most effective when supported by community-wide programs that involve parents, peers, mass media, and community organizations.[2]

Tobacco-use prevention activities should be designed to prevent the use of all tobacco products. Such activities should include increasing tobacco prices, reducing access (eg, by implementing and adequately enforcing minors' access restrictions), reducing the appeal of tobacco products (eg, by restricting advertising and promotion), and conducting youth-oriented mass media campaigns and school-based tobacco-use prevention programs.[2,10] Establishing health-oriented social norms (eg, by increasing provision of smoke-free indoor air and decreasing modeling of tobacco use by parents, teachers, and celebrities) and increasing support and involvement from parents and schools also will contribute to prevention.[2]

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HEADLINE: Trends in HIV-Related Sexual Risk Behaviors Among High School Students
-- Selected U.S. Cities, 1991-1997.

BODY:

Despite recent decreases in sexual risk behaviors among high school students nationwide [1], human immunodeficiency virus (HIV) infection was the seventh leading cause of death among persons aged 15-24 years in the United States during 1997 [2]. To determine whether the prevalence of HIV-related sexual risk behaviors among high school students also has decreased in certain urban areas heavily affected by the epidemic, CDC analyzed data from Youth Risk Behavior Surveys (YRBS) conducted in 1991, 1993, 1995, and 1997 in eight large-city school districts: Boston, Massachusetts; Chicago, Illinois; Dallas, Texas; Fort Lauderdale, Florida; Jersey City, New Jersey; Miami, Florida; Philadelphia, Pennsylvania; and San Diego, California. This report summarizes the results of this analysis, which indicate that, from 1991 to 1997, the percentage of high school students engaging in HIV-related sexual risk behaviors decreased in some U.S. cities.

The local YRBS, a component of CDC's Youth Risk Behavior Surveillance System, measures the prevalence of health-risk behaviors among adolescents through representative school-based surveys conducted biennially in selected city school districts. The 1991, 1993, 1995, and 1997 surveys used a two-stage cluster sample design to produce representative cross-sectional samples of students in grades 9-12. The school districts in this report obtained weighted data (i.e., had a scientifically selected sample, an overall response rate of at least 60%, and appropriate survey documentation) for at least 3 of the 4 years. Across all districts and years, sample sizes ranged from 369 to 3343; school response rates ranged from 81% to 100%; student response rates ranged from 62% to 85%; and overall response rates ranged from 60% to 85%.

For each survey, students completed an anonymous self-administered questionnaire that included questions about sexual intercourse, number of sex partners, and condom use. Sexual experience was defined as ever having had sexual intercourse, multiple sex partners as having had four or more sex partners during one's lifetime, current sexual activity as having had sexual intercourse during the 3 months preceding the survey, and condom use as having used a condom at last sexual intercourse among currently sexually active students. Data for racial/ethnic groups other than non-Hispanic black, non-Hispanic white, and Hispanic were combined because, when presented separately, sample sizes were too small for meaningful analysis.

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Data were weighted to provide estimates generalizable to all public school students in grades 9-12 in the respective jurisdictions. SUDAAN was used to calculate 95% confidence intervals (CIs) and to conduct trend analyses. The percentage change in behavior from 1991 to 1997 was calculated as the 1997 prevalence minus the 1991 prevalence divided by the 1991 prevalence and multiplied by 100. Secular trends were analyzed using logistic regression analyses that controlled for sex, school grade, and race/ethnicity. This report provides results from tests of linear trends. For Boston, 1991 data were not available; therefore, Boston's trend analyses were calculated from 1993 to 1997. For Philadelphia, 1993 data were not available; trend analyses for that city excluded data for that year.

Demographic characteristics of the respondents in 1997 closely matched the characteristics of the respondents in 1991, 1993, and 1995 (Table 1). Respondents were distributed evenly across sex and school grade, with slightly smaller percentages of 12th-grade students. The racial/ethnic distributions varied among cities, but generally had larger proportions of black and Hispanic students than of white students.

From 1991 to 1997, the proportion of sexually experienced students decreased significantly in Chicago, Dallas, and Fort Lauderdale; in Boston, the proportion of sexually experienced students decreased significantly from 1993 to 1997 (Table 2). The percentage decrease in these cities ranged from 7% in Dallas to 16% in Chicago. The prevalence of multiple sex partners among students in the same four cities decreased significantly (Table 2). The percentage decrease in these four cities ranged from 12% in Fort Lauderdale to 33% in Chicago.

From 1991 to 1997, the proportion of students in Chicago, Dallas, Fort Lauderdale, and Philadelphia who reported current sexual activity decreased significantly (Table 2). The percentage decrease in these cities ranged from 8% in Dallas to 16% in Chicago.

Condom use among currently sexually active students increased significantly in Chicago, Dallas, Fort Lauderdale, Jersey City, Miami, and Philadelphia from 1991 to 1997 (Table 2). The percentage increase in these cities ranged from 25% in Dallas to 52% in Jersey City.

Reported by: Div of Adolescent and School Health, National Center for Chronic Disease Prevention and Health Promotion; Div of HIV/AIDS Prevention-Intervention, Research, and Support, National Center for HIV, STD, and TB Prevention, CDC.

Editorial Note: Students in all but one of the eight U.S. cities examined in this study demonstrated a significant improvement in at least one HIV-related sexual risk behavior. The decrease in the percentage of urban students reporting sexual experience and multiple sex partners parallels recent national trends in these health-risk behaviors and represents a reversal of the increasing trend that occurred nationally during the 1970s and 1980s [1,3,4]. The increase in four cities in the percentage of currently sexually active students reporting condom use also parallels national trends [1,4]. Although the percentage of currently sexually active students remained stable nationally from 1991 to 1997 [1], this percentage decreased significantly in four of the eight cities included in this report. Declines in sexual risk behaviors among students in these cities are important because these cities have large black and Hispanic populations who have disproportionately higher rates of HIV infection [5].

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The findings in this report are subject to at least three limitations. First, although data for each school district represent students in that jurisdiction, these school districts do not represent all cities heavily affected by the HIV epidemic. Second, these data apply only to adolescents who attended public high school. In the three cities for which data are available, 1996 high school dropout rates ranged from 3% in San Diego to 12% in Philadelphia [6]. Adolescents not enrolled in school are more likely to be sexually experienced and to have had multiple sex partners than adolescents enrolled in school [7]. Finally, the extent of underreporting or overreporting cannot be determined, although the survey questions demonstrate good test-retest reliability [8].

In 1987, CDC began providing fiscal and technical support to local education agencies in these and other cities where the prevalence of acquired immunodeficiency syndrome (AIDS) is high. This support assists schools in implementing HIV-prevention policies and programs for adolescents. For example, in Boston and Miami, the local education agency requires high schools to use a curriculum with demonstrated effectiveness in reducing sexual risk behaviors. In Chicago, high school students participate in peer education to develop social skills to avoid peer pressure. In Dallas, school nursing and counseling services support the HIV-prevention program. In Fort Lauderdale, school-based health centers provide health-care services to students at school, including referrals for HIV counseling and testing. CDC also provides fiscal and technical support to local community planning groups to plan and implement HIV-prevention programs and services for adolescents. The decreases in sexual risk behaviors among high school students in the eight cities analyzed in this report may reflect the impact of these and other efforts, including those of families, local government agencies, and community-based organizations.

Despite the reductions in risk for HIV infection among urban adolescents, many remain at risk. Although school-based HIV-prevention education is widely conducted in U.S. schools, efforts are needed to identify and disseminate effective curricula that can help students avoid risk for HIV infection and to increase the percentage of teachers who receive in-service training in HIV prevention [9]. Community interventions should reinforce school-based HIV prevention and provide additional HIV-related services to all adolescents, particularly those at greatest risk for HIV infection.

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Percentage of high school students who completed
the Youth Risk Behavior Survey, by demographic
Characteristics -- selected U.S. cities, 1997

Characteristic	Fort				Jersey	
	Boston	Chicago	Dallas	Lauderdale	City	Miami
Sex						
Female	50.5	54.3	51.0	49.5	52.5	48.9
Male	49.5	45.7	49.0	50.5	47.5	51.1
Grade						
9	30.6	34.1	38.7	32.1	36.1	32.6
10	25.3	28.5	24.3	26.6	24.3	27.0
11	24.3	21.0	19.3	22.3	20.3	20.5
12	19.3	16.0	17.7	19.0	18.8	17.6
Race/Ethnicity						
White, non-Hispanic	16.4	8.1	11.4	39.8	4.0	10.5
Black, non-Hispanic	36.7	47.8	51.4	31.3	42.0	25.7
Hispanic	20.5	34.7	33.1	18.6	32.0	55.6
Other [*]	26.4	9.4	4.1	10.3	22.0	8.3

Characteristic	San	
	Philadelphia	Diego
Sex		
Female	50.5	49.6
Male	49.5	50.4
Grade		
9	38.7	29.1
10	25.9	27.5
11	20.0	24.3
12	15.3	18.9
Race/Ethnicity		
White, non-Hispanic	23.9	31.7
Black, non-Hispanic	53.8	16.4
Hispanic	8.1	25.8
Other [*]	14.1	26.0

(*)Data for racial/ethnic groups other than non-Hispanic white, non-Hispanic black, and Hispanic were combined because, when presented separately, sample sizes were too small for meaningful analysis.

Percentage of high school students who reported HIV-related sexual risk behaviors, by city -- selected U.S. cities, Youth Risk Behavior Survey, 1991-1997

Ever had sexual intercourse

City	1991 %	(95% CI [*])	1997 %
Boston [ss]	60.6	([plus or minus]3.5)	54.7
Chicago	64.3	([plus or minus]4.7)	53.9
Dallas	66.6	([plus or minus]4.4)	62.1
Fort			
Lauderdale	55.5	([plus or minus]4.6)	50.4
Jersey City	65.0	([plus or minus]9.2)	58.1
Miami	54.8	([plus or minus]5.1)	51.8
Philadelphia [n]	68.0	([plus or minus]7.8)	63.9
San Diego	48.0	([plus or minus]6.5)	44.7

City	(95% CI)	p value [†]
Boston [ss]	([plus or minus]4.0)	0.02
Chicago	([plus or minus]6.9) [less than]0.01	
Dallas	([plus or minus]3.0) [less than]0.01	
Fort		
Lauderdale	([plus or minus]4.7) [less than]0.01	
Jersey City	([plus or minus]2.7)	0.26
Miami	([plus or minus]5.2)	0.32
Philadelphia [n]	([plus or minus]4.6)	0.10
San Diego	([plus or minus]3.1)	0.15

Four or more sex partners

during lifetime

City	1991 %	(95% CI)	1997 %
Boston [ss]	25.9	([plus or minus] 3.6)	20.9
Chicago	29.8	([plus or minus] 4.2)	19.9
Dallas	32.1	([plus or minus] 3.6)	25.8
Fort			
Lauderdale	20.6	([plus or minus] 3.2)	18.2
Jersey City	28.2	([plus or minus] 6.9)	23.2
Miami	20.4	([plus or minus] 4.2)	19.6
Philadelphia [n]	31.6	([plus or minus] 10.9)	28.4
San Diego	15.8	([plus or minus] 4.7)	15.1

City	(95% CI)	p value
Boston [ss]	([plus or minus] 2.9)	0.02
Chicago	([plus or minus] 4.1)	[less than] 0.001
Dallas	([plus or minus] 2.7)	[less than] 0.001
Fort		
Lauderdale	([plus or minus] 2.9)	[less than] 0.01
Jersey City	([plus or minus] 4.0)	0.34
Miami	([plus or minus] 3.4)	0.99

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Philadelphia [n]	([plus or minus]4.1)	0.23
San Diego	([plus or minus]2.0)	0.40

Currently sexually active

	1991		1997
City	%	(95% CI)	%
Boston [ss]	42.0	([plus or minus]3.3)	39.3
Chicago	44.9	([plus or minus]4.6)	37.7
Dallas	47.5	([plus or minus]4.2)	43.7
Fort			
Lauderdale	39.1	([plus or minus]3.8)	34.1
Jersey City	47.1	([plus or minus]7.3)	40.9
Miami	35.0	([plus or minus]3.9)	34.2
Philadelphia [n]	50.7	([plus or minus]6.7)	46.0
San Diego	30.3	([plus or minus]5.1)	31.2

Condom use during last

sexual intercourse

			1991
City	(95% CI)	p value	%
Boston [ss]	([plus or minus]3.7)	0.34	63.9
Chicago	([plus or minus]4.5)	0.04	50.3
Dallas	([plus or minus]3.2) [less than]0.01		48.5

Fort

Lauderdale	([plus or minus]3.7) [less than]0.01	42.9
Jersey City	([plus or minus]3.6) 0.17	39.0
Miami	([plus or minus]4.7) 0.93	45.1
Philadelphia [n]	([plus or minus]4.1) 0.05	47.6
San Diego	([plus or minus]2.6) 0.80	43.1

1997

City	(95% CI)	%	(95% CI)
Boston [ss]	([plus or minus] 5.1)	64.0	([plus or minus]5.7)
Chicago	([plus or minus] 5.6)	67.0	([plus or minus]7.0)
Dallas	([plus or minus] 1.9)	60.8	([plus or minus]4.3)
Fort			
Lauderdale	([plus or minus] 5.2)	64.3	([plus or minus]4.0)
Jersey City	([plus or minus]10.9)	59.1	([plus or minus]4.6)
Miami	([plus or minus] 5.1)	61.8	([plus or minus]4.7)
Philadelphia [n]	([plus or minus] 4.2)	70.5	([plus or minus]5.1)
San Diego	([plus or minus] 9.4)	50.1	([plus or minus]3.7)

City p value

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Boston [ss]	0.84
Chicago	[less than]0.001
Dallas	[less than]0.001
Fort	
Lauderdale	[less than]0.001
Jersey City	[less than]0.01
Miami	[less than]0.001
Philadelphia [n]	[less than]0.001
San Diego	0.13

(*)Confidence interval.

(+)For linear trend including data from 1991, 1993, 1995, and 1997.

(ss.)Percentage and CIs listed in 1991 column are for 1993; trend analysis is for 1993-1997.

(n.)Data for 1993 were not available.

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