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Contrary to Psychological and Popular Opinion, There Is No Compelling Evidence That Older Adults Are Disproportionately Victimized by Consumer Fraud

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Abstract
According to psychological and popular opinion, older persons are especially susceptible to consumer fraud. Research on cognitive and affective aging reveals age-related changes that could increase the vulnerability of older persons to consumer fraud. However, this research does not show that consumer fraud actually is more prevalent among older persons. In generalizing from laboratory findings of cognitive decline to age differences in the prevalence of consumer fraud, psychologists may underestimate the influence in everyday life of possible protective factors associated with old age, including increased experience and changes in goals, lifestyle, income, as well as purchasing and risk behaviors. We review evidence on the prevalence of consumer fraud and conclude that there is no clear indication that it is more prevalent among older persons. Aggregating across all consumer frauds, there is evidence that consumer fraud is less common among older persons than adults of other ages. This evidence is potentially flawed, however, because of failings inherent in the methodologies. In the absence of irrefutable data, it is premature to conclude that consumer fraud is less prevalent among older adults, but it is also premature to conclude that consumer fraud is more prevalent among older persons, as is assumed in conventional and psychological wisdom.

Keywords
cognitive aging, aging and decision making, consumer fraud, successful aging, emotional regulation and aging

Many popular writers, law enforcement agencies, and psychology researchers presume that consumer fraud is particularly prevalent among older persons. This belief is consistent with both the old-age stereotype and psychological research on cognitive and affective aging, which reveals age-related changes that could render older persons more vulnerable to consumer fraud. However, psychological researchers focus on vulnerabilities rather than on age differences in the actual prevalence of consumer fraud. An emphasis on vulnerabilities causes other factors associated with aging that could protect older persons from consumer fraud to be overlooked. In the current article, we show that findings on age differences in the prevalence of consumer fraud are inconsistent with conventional wisdom. We critically examine the nature of the evidence and discuss its implications.

Consumer fraud occurs when salespersons deliberately misrepresent the monetary benefits, advantages, and availability of products and services or charge consumers for products and services that they did not buy (Titus, Heinzelmann, & Boyle, 1995). In two common examples, people pay to receive a prize that is not awarded, or people are billed for Internet services that they did not request (Anderson, 2013). We follow the general practice of distinguishing consumer fraud committed against older persons from elder abuse, which involves physical, psychological, or financial abuse that is usually committed by family members, neighbors, and
friends (Acierno et al., 2010; Metlife, 2011). In contrast to elder abuse, strangers typically perpetrate consumer fraud, and their focus is strictly financial.

Overall crime rates in the United States have declined in recent decades, but the prevalence of consumer fraud has increased (Deevy, Lucich, & Beals, 2012; Federal Trade Commission [FTC], 2013; Kerley & Copes, 2002; Levitt, 2004). Projections based on a U.S. survey suggest that almost 11% of adults 18 years of age and older experienced consumer fraud in the year preceding the survey (Anderson, 2015). The annual financial loss from consumer fraud in the United States has been estimated to be 40–50 billion dollars (Deevy et al., 2012).

Although adults of all ages experience consumer fraud, many authorities suppose that older adults are especially likely to be victimized. The Federal Bureau of Investigation (FBI) noted that older persons possess qualities, such as excellent credit and trustworthy natures, which make them attractive to fraudsters (FBI, 2001, 2013). In an article in the AARP (formerly the American Association of Retired Persons) Bulletin, Kirchheimer (2011) reported that adults older than 65 years of age constitute one eighth of the U.S. population but as much as one third of all victims of consumer fraud. Other writers offer even more dramatic claims about the prevalence of consumer fraud among older persons. According to a statistic that is frequently cited in newspaper articles and online entries, adults older than 65 years of age constitute 80% of the victims of consumer fraud (e.g., Urbina, 2012).1

Responding to public concerns about consumer fraud and other financial crimes committed against seniors, scholars and legislatures have proposed or enacted laws to protect older adults. Martin (2009) recommended establishing a new default rule for elderly consumers: Solicitations should be barred unless older consumers opt in. The State of Delaware Legislature added an extra penalty of $100 for crimes committed against persons 62 years of age or older (National Conference of State Legislatures, 2013). Legislatures in 13 other states have passed laws designed to protect older persons against consumer fraud and other financial crimes (National Conference of State Legislatures, 2013).

Psychological Perspectives

In journal articles and media interviews related to consumer fraud, a number of psychology and neuroscience researchers have stated that older adults are disproportionately victimized. The researchers then propose psychological mechanisms to account for this “fact,” often generalizing from their own findings (e.g., Asp et al., 2012; Bryner, 2008; Castle et al., 2012; Denburg et al., 2007; Jacoby & Rhodes, 2006; Lloyd, 2012). Consider two recent articles in which researchers link their findings to older persons’ increased experience of consumer fraud. An article on the impact of brain lesions on susceptibility to misleading advertising included the statement that fraud prevalence has “reached epidemic levels in older adults” (Asp et al., 2012, p. 1). As primary evidence for this epidemic, the authors of this article cited a survey in which 20% of adults 65 years of age and older reported that they had been victims of financial fraud (Infogroup/ORC, 2010). The authors failed to note that survey respondents were asked whether they had “ever been taken advantage of financially” (Infogroup/ORC, 2010, p. 28). Respondents could have been referring to episodes that occurred when they were much younger. In an article on age differences in trust, a second group of researchers wrote that “Older adults are disproportionately vulnerable to frauds” (Castle et al., 2012, p. 20848). Although neither group of researchers directly examined age differences in the prevalence of consumer fraud, they included speculations in their articles relating the findings to the increased occurrence of consumer fraud in older adults. These conjectures about aging and the prevalence of consumer fraud were subsequently featured in news sources and online blogs in which the researchers’ speculations were sometimes transformed into facts. Two article titles are illustrative of this occurrence: “Neuroscience Team Explains Why Old People Get Scammed” (Urbina, 2012) and “Why Are Elderly Duped? Area in Brain Where Doubt Arises Changes With Age” (Lewis, 2012).

On the basis of laboratory research, there are at least six reasons to hypothesize that older adults are disproportionately victimized by consumer fraud. Most of the researchers who have produced work relevant to this hypothesis have focused on age-related cognitive declines. In other pertinent studies, researchers have examined changes in emotional regulation and trust across adulthood.

First, relative to younger adults, older adults exhibit less accurate episodic memories and increased vulnerability to misinformation ( Craik, 2000; Jacoby & Rhodes, 2006; Zacks, Hasher, & Li, 2000). The AARP suggested that older adults are more susceptible to consumer fraud, in part, because of such age-related memory changes (e.g., Kirchheimer, 2011). For example, older persons might be more accepting of false claims about the past, such as “you forgot to pay me.” Furthermore, the FBI (n.d.) reported that fraudsters rely on the impaired recall of older persons: “Con artists know the effects of age on memory, and they are counting on elderly victims not being able to supply enough detailed
Second, cognitive processing is slower in older adults. Older persons take longer to review and process information than younger adults do, and they also tend to review less information while making their decisions (Löckenhoff, 2011; Salthouse, 1991, 1993). According to the FBI (n.d.), fraudsters press targets to act quickly—“You must act ‘now’ or the offer won’t be good” (“Telemarketing Fraud,” first bullet). In making hasty decisions, older adults may fail to consider fully the potentially bogus nature of the offers.

Third, scores on tests of abstract reasoning and novel problem solving peak at about 30 years of age and then decline across the lifespan. Tests of acquired knowledge rise across the adult lifespan and then decline after about 60 years of age (Salthouse, 2012; Schaie, 2005). If the ability to detect and resist fraud depends, in part, on abstract reasoning and acquired knowledge, then rates of consumer fraud might increase in old age as reasoning and knowledge decline.

Fourth, laboratory studies show that amnestic forms of mild cognitive impairment are associated with a reduction in arithmetic and financial skills, such as managing checkbooks and understanding bills (Griffith et al., 2003; Moye & Marson, 2007; Sherod et al., 2009). Conceivably, decreases in arithmetic and financial abilities could yield an increase in the prevalence of consumer fraud among this subgroup of older persons (3%–5% of older persons; Mariani, Monastero, & Mecocci, 2007).

Older persons with more severe cognitive impairment, in particular senile dementia, are probably especially vulnerable to consumer fraud as well as particularly unlikely to participate in representative surveys on consumer fraud or to report fraud to legal authorities and complaint agencies (though it may be reported by caregivers; Chandaria, 2011). We are unaware of systematic research on the prevalence of consumer fraud among older persons with dementia and are unable to address this issue in the current article.

Fifth, after experiencing a financial loss, consumers can be uncertain whether their loss stems from a legitimate business arrangement or deceitful sales practices (Kerley & Copes, 2002). The judgment that one has been duped generates negative emotions, including anger and disappointment (Ganzini, McFarland, & Bloom, 1990; Schichor, Doocy, & Geis, 1996). At least in Western countries, older adults tend to appraise experiences more favorably than younger adults do (Charles & Carstensen, 2008; Grossmann, Karasawa, Kan, & Kitayama, in press; Schryer & Ross, 2012, 2013a). If, in addition, older persons are dismayed by the prospect of being stereotyped as members of the gullible elderly, then acknowledgment of victimization could be particularly unpleasant. In the face of ambiguous evidence of fraud, older adults may be more inclined than younger adults to regulate their emotions by offering a benign interpretation of dubious sales practices and fail to report the incidents to authorities.

Finally, the AARP and FBI have implicated trust as a factor in older persons’ increased vulnerability to consumer fraud. The AARP (Kirchheimer, 2011) referred to the psychological research finding that older adults appear to be more trusting than younger adults are, as evidenced by older persons’ lower ability to detect untrustworthy faces (Castle et al., 2012). According to the FBI (2001), older persons were reared to be polite and trusting in the 1930s–1950s. As a result, they are too polite to say “no” or to simply hang up the telephone on telemarketers.

In sum, research on cognitive and affective aging reveals a number of changes associated with aging that could increase the vulnerability of older persons to consumer fraud. However, this research does not show that consumer fraud is actually more prevalent among older persons. None of the researchers directly assessed whether older persons are more likely to succumb to fraud in their everyday lives. Next, we consider reasons for supposing that older persons may experience consumer fraud no more frequently, and perhaps even less often, than adults of other ages do.

**Prevalence of Consumer Fraud Might Not Increase in Older Age**

In normal aging, declines in cognitive abilities observed in the laboratory seem to have relatively minor ramifications for everyday well-being and functioning (Löckenhoff, 2011; M. Ross & Schryer, 2013; Salthouse, 2012; Zimerman, Hasher, & Goldstein, 2011). Older adults tend to report higher emotional well-being than younger adults do (Carstensen, Pasupathi, Mayr, & Nesselroade, 2000; Grossmann, Na, Varnum, Kitayama, & Nisbett, 2013; Mroczek & Kolarz, 1998). Cognitive abilities (speed of processing, digit span, comprehension, and vocabulary scores) did not predict relationship quality, emotional well-being, or life satisfaction in a random sample of U.S. adults; older adults scored better on all of these dimensions than their younger counterparts did (Grossmann et al., 2013). Meta-analyses indicate that age is not systematically related to measures of job performance, despite age-related cognitive declines (e.g., Salthouse, 2012). An investigation of the quality of decisions about treatment for breast cancer revealed that older and younger women’s decisions were similar, even though older women decided on the basis of less information (Meyer, Russo, & Talbot, 1995). A final example, prospective memory (remembering to perform intended tasks),
provides perhaps the most dramatic illustration of a disjunction between laboratory findings of age-related decline and everyday functioning. Younger adults have performed better than older adults on prospective memory tasks in the laboratory (e.g., remembering to press a button whenever a particular word appears on the screen), but older adults have exhibited superior prospective memory in everyday life (e.g., remembering to call the experimenter at specific dates and times; Phillips, Henry, & Martin, 2008; M. Ross & Schryer, 2013). The most popular explanation of this paradox is that older persons perform better in everyday life because they rely on external reminders, such as notes and calendars. There is surprisingly little evidence, however, that dependence on external memory aids increases with age (Phillips et al., 2008; M. Ross & Schryer, 2013; Schryer & Ross, 2013b).

In addition, economists have reported an inverted U-shaped curve for the age of optimal financial decisions in everyday life (Agarwal, Driscoll, Gabaix, & Laibson, 2009): Middle-age persons perform better—for example, pay less interest on credit card bills and home-equity lines of credit—than older or younger adults do. The age differences in payments were not large, ranging from less than $25 per year for credit card fees to less than $300 for home-equity lines of credit, but they were consistent across different types of credit behavior. The authors speculated that the inverted U-shaped pattern results from two opposing age trends. Experience with financial decisions increases with age, whereas cognitive capacity declines. In middle age, individuals benefit from experience while retaining a sufficiently high cognitive capacity to calculate and compare interest rates, read and understand the small print in credit card contracts, and so forth.

A straightforward generalization from the inverted U-shaped pattern is that the prevalence of consumer fraud should be higher among older and younger adults than among middle-age adults. Arguably, however, cognitive ability is less important than experience when it comes to resisting frauds. Many consumer frauds do not require complex calculations to reveal their deceptive- ness. Often, one must simply recognize that the offers are too good to be true. Conceivably, this recognition depends primarily on experience, for instance, prior exposure to ineffective diets or failed financial schemes. If older adults benefit from lessons learned when they were younger and middle-age adults, older adults might be victimized less often by consumer fraud than their younger counterparts.

There are several other reasons for hypothesizing that the prevalence of consumer fraud declines in old age. Individuals who describe themselves as risk averse are less likely to report being victimized by consumer fraud (Anderson, 2013). There is some evidence that risk aversion increases in old age. On representative surveys, older persons have reported that they are less willing to take risks in general as well as are less likely than their younger counterparts to behave in ways that could render them vulnerable to consumer fraud, such as giving their PIN or ATM codes to others, failing to conduct background checks on contractors, or purchasing goods from unfamiliar telemarketers (Anderson, 2004, 2013; Rebovich & Layne, 2000; Schoepfer & Piquero, 2009; Van Wyk & Mason, 2001). Note, however, that laboratory studies of financial risk taking and research on decision making yield more variable results (Mata, Joseph, Samanez-Larkin, & Hertwig, 2011; Mather, 2006).

Finally, older persons may experience less exposure to consumer fraud because of age-related differences in income and purchasing behavior. Income and consumption tend to peak in middle age (Attanasio, Banks, Meghir, & Weber, 1999). Older persons make fewer major purchases than younger consumers do (AARP, 1999). Retirees borrow less money than adults of other ages do (Agarwal et al., 2009) and spend more time shopping for better prices (Aguiar & Hurst, 2005). If older persons engage in less risky financial behavior, make fewer big purchases, and are careful with their spending, they may encounter fewer fraudsters. Older adults still confront a variety of economic decisions, however, that could potentially attract fraudsters, including investment of savings and retirement income and estate planning. In addition, sales of products that are marketed mainly to older adults (e.g., home alerts), might provide opportunities for fraudsters.

There is a psychological theory that could help explain some of the age-related changes in behavior and lifestyle. Selection optimization and compensation (SOC) theory (Baltes & Baltes, 1990) suggests a psychological mechanism for age-related changes in both risk aversion and purchasing decisions. According to SOC theory, an important challenge across the lifespan is managing a balance of gains and losses in a variety of domains. Individuals seek to enhance gains and reduce losses by being selective in their goals, by optimizing their opportunities to succeed in their chosen goals, and, when confronted with potential losses, by compensating through other means. As people get older, and the ratio of gains and losses increasingly tips toward losses, their goal orientation shifts away from the pursuit of growth and toward the prevention of losses (Ebner, Freund, & Baltes, 2006; Freund & Ebner, 2005; Heckhausen, 1997). Increased risk aversion and reduced spending seem indicative of an orientation toward preventing losses. In contrast, fraud victimization likely reflects, in part, a goal orientation that focuses on the pursuit of financial or personal gain rather than the prevention of losses.
The Dominance of Anecdotal Evidence

Much of the evidence on consumer fraud provided in the media or through personal experience is anecdotal. We often hear and read stories about older adults who were conned. These case studies do not include a representative sample of fraud victims. Also, in these case studies, researchers have not compared the rate or magnitude of fraud experienced by older, middle-age, and younger adults. We review and evaluate three forms of evidence that are potentially more convincing than case studies: representative surveys of the general population, data on fraud complaints, and surveys of individuals who are known or presumed to be victims of fraud.

Representative Surveys

Over the past two decades, various agencies have conducted representative surveys in which adults of different ages are asked whether they have experienced consumer fraud than are adults of other ages (aggregating across various specific frauds) within 1–5 years preceding the survey. In these surveys, the agencies have consistently found that older adults are less likely to report experiencing consumer fraud than are adults of other ages (aggregating across various specific frauds) within 1–5 years preceding the survey.2 Table 1 contains a listing and description of the studies reviewed in the current article.

Of the nine representative surveys shown in Table 1, those conducted by the FTC are especially noteworthy. The FTC conducted three well-documented telephone surveys of consumer fraud (Anderson, 2004, 2007, 2013) experienced by adults more than 18 years of age. The FTC sample sizes were considerably larger than those of most other surveys (see Table 1). The number of frauds examined increased in successive FTC surveys (from 12 in 2004 to 17 in 2013) to reflect the most common consumer complaints in the contemporary FTC database. The FTC used similar questions across the three surveys to determine whether respondents were victims of various types of consumer fraud. An important aspect of these surveys is that respondents were not required to judge whether they had experienced consumer fraud. Researchers made the judgment on the basis of decision rules that they uniformly applied to the answers of all respondents. This procedure likely diminishes possible age differences in respondents’ tendencies to offer benign interpretations of fraudulent sales practices.

By way of illustration, here are the survey questions regarding fraudulent diets (Anderson, 2013, pp. D39–D40): “In the past year, have you paid anyone for a product such as nonprescription drugs, dietary supplements, skin patches, creams, wraps, or earrings that the seller suggested or implied would help you lose a substantial amount of weight?” If respondents answered yes, they were subsequently asked the following:

Did the seller suggest or imply that using this product would make it easy to lose weight? Did the seller suggest or imply that by using this product you could lose weight without exercise and/or without reducing the amount you eat? Which of the

Table 1. Characteristics of Studies Included in Review

<table>
<thead>
<tr>
<th>Studies reviewed</th>
<th>Outcome variable</th>
<th>N</th>
<th>Types of fraud</th>
</tr>
</thead>
<tbody>
<tr>
<td>Representative surveys</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>AARP (1993)</td>
<td>Bad buying experiences</td>
<td>957</td>
<td>8</td>
</tr>
<tr>
<td>AARP (1999)</td>
<td>Bad buying experiences</td>
<td>1,504</td>
<td>5</td>
</tr>
<tr>
<td>Anderson (2007)</td>
<td>Experiences of fraud</td>
<td>3,888</td>
<td>16</td>
</tr>
<tr>
<td>Anderson (2013)</td>
<td>Experiences of fraud</td>
<td>3,638</td>
<td>17</td>
</tr>
<tr>
<td>Muscat, James, and Graycar (2002)</td>
<td>Experienced any type of fraud (self-defined)</td>
<td>3,031</td>
<td>N/A</td>
</tr>
<tr>
<td>Schoepfer and Piquero (2009)</td>
<td>Experiences of fraud</td>
<td>375</td>
<td>8</td>
</tr>
<tr>
<td>Titus, Heinzelmann, and Boyle (1995)</td>
<td>Experiences of fraud</td>
<td>1,246</td>
<td>22</td>
</tr>
<tr>
<td>Van Wyk and Mason (2001)</td>
<td>Experiences of fraud</td>
<td>400</td>
<td>13</td>
</tr>
<tr>
<td>Consumer complaints</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Federal Trade Commission (2013)</td>
<td>Fraud complaints</td>
<td>More than one million</td>
<td>N/A</td>
</tr>
<tr>
<td>Victim lists</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>AARP (1996)</td>
<td>Proportion of victims in each age group</td>
<td>745</td>
<td>5</td>
</tr>
<tr>
<td>AARP (2003)</td>
<td>Proportion of victims in each age group</td>
<td>442</td>
<td>2</td>
</tr>
<tr>
<td>Pak and Shadel (2011)</td>
<td>Proportion of victims in each age group</td>
<td>723</td>
<td>5</td>
</tr>
<tr>
<td>S. Ross and Smith (2011)</td>
<td>Proportion of victims in each age group</td>
<td>202</td>
<td>3</td>
</tr>
</tbody>
</table>

Note: The Ns listed for the victim-list studies include only the victim samples.
following best describes your experience in using the product: (1) I lost about as much or more weight than I expected to lose. (2) I lost about half of the weight I expected to lose. (3) I only lost a little of the weight I expected to lose. (4) I lost no weight or gained weight. (5) I did not use the product.

Respondents were designated as victims of diet fraud if they reported losing little or no weight when a salesperson informed them that they would lose weight easily. Respondents who purchased but stated that they did not use the product were not classified as victims. Also, exercise equipment was not included in the list of potentially fraudulent weight loss products.

A consistent finding across all three FTC surveys is that, aggregating across the different types of consumer fraud, participants' reports of the prevalence of fraud declined steadily after 54 years of age, with the oldest age group indicating the lowest level of fraud. For example in the most recent survey (Anderson, 2013), respondents in the 65-to 74-year-old and 75-year-old and older age groups were significantly less likely to report experiencing consumer fraud (7.3% and 6.5%, respectively, of the respondents in each age group) than were those in the 45- to 54-year-old age group (14.3% of respondents in that age group). Other age groups reported rates of fraud that were nonsignificantly lower than that reported by 45- to 54-year-old respondents. The finding that 45- to 54-year-olds tended to report the highest amount of consumer fraud is intriguing, but it does not replicate across the three FTC surveys: 25- to 34-year-olds reported the highest likelihood of consumer fraud in Anderson's (2007) study, and 25- to 34-year-olds and 35- to 44-year-olds reported the highest likelihood of consumer fraud in Anderson's (2004) study.

All of the remaining representative surveys listed in Table 1 replicate the FTC finding that older persons are less likely to report experiencing consumer fraud in the aggregate than are adults of other ages. This result occurs despite differences in question wording, the types of consumer fraud, and the location of the samples. Surveys were conducted with national samples in the United States (e.g., Anderson, 2004; Titus et al., 1995) and Australia (Muscat, James, & Graycar, 2002) as well as with regional samples in the United States (e.g., Van Wyk & Mason, 2001).

**Vulnerability versus prevalence**

Despite consistent evidence that reports of consumer fraud decline among older persons (aggregated across various frauds), some accounts of survey results continue to characterize older persons as particularly susceptible to consumer fraud. For example, in reports distributed by the AARP, the results of two representative surveys were interpreted as demonstrating older persons' increased vulnerability to consumer fraud (AARP, 1993, 1999). These surveys included a number of questions concerning consumer expertise (e.g., awareness of consumer rights and wariness of misleading sales practices). Relative to adults of other ages, older adults exhibited less knowledge. The authors of the earlier report concluded that “older Americans seem particularly vulnerable to fraud and deception” because they “are less familiar with basic consumer issues, and less suspecting of the existence of deceptive sales practices” (AARP, 1993, p. 48). In some recent literature reviews (e.g., Pak & Shadel, 2011) and in many articles in the popular media, authors have cited one or both of these surveys as showing that older adults are more likely to be defrauded than are younger adults.

Consumer awareness questions may assess older adults’ potential vulnerability to fraud, but these questions do not directly gauge whether consumer fraud is more prevalent among older adults. In the same two AARP (1993, 1999) surveys, other questions were used in which prevalence was assessed more directly. Compared with adults of other ages, older adults were less likely to report being misled or exploited by sales practices in the year preceding the survey (e.g., obtaining false information about a product, receiving repair bills higher than original estimates, and confronting failures to honor a warranty). Although an age difference in consumer knowledge is potentially important, it should not overshadow the finding that older respondents reported experiencing fewer deceptive sales practices than respondents of other ages did.

The authors of the AARP (1993) report provided a possible explanation for the age difference in consumer knowledge and experience of consumer fraud. They noted that older consumers make fewer major purchases than their younger counterparts do. Reduced consumption could explain both why older persons are less up-to-date in their consumer knowledge and are less likely to experience deceptive sales practices.

**Age differences in the experience of specific consumer frauds**

Relative to adults of other ages, older persons are less likely to report experiencing a variety of specific consumer frauds (AARP, 1993; Anderson, 2004, 2007, 2013; Muscat et al., 2002; Schoepfer & Piquero, 2009). This result is unsurprising, given the findings at the aggregate level. The more interesting question is whether younger adults are consistently more susceptible to some specific consumer frauds, whereas older adults are reliably more susceptible to other consumer frauds. For a number of
reasons, survey data do not currently provide clear answers to this question. First, in different surveys, researchers may investigate different frauds; therefore, it can be difficult to assess whether findings replicate. Second, even when the same frauds are examined in surveys, researchers may group frauds or ages differently for purposes of analysis, making it challenging to compare results across surveys. Finally, the samples are small, and the statistical power is low at the level of specific frauds, compared with the cumulative level. By way of example, 16 respondents between 65 and 74 years of age reported fraudulent prize promotions (paying a fee to receive a prize that is never awarded) in one of the largest surveys (Anderson, 2013).

The small sample sizes likely contribute to inconsistent findings across surveys. For instance, in one survey, Anderson (2013) found that respondents in the 65- to 74-year-old age group reported the highest level of prize-promotion fraud; in another survey, Schoepfer and Piquero (2009) found that younger adults reported this same fraud more frequently than older persons did. Similarly, fraudulent weight-loss products were reported significantly more often by younger adults in one survey (Anderson, 2007) but not in another (Anderson, 2013), although the trend was in the same direction.

It seems probable that fraudsters successfully target and entrap younger adults with some scams and older adults with different scams, even if survey findings do not presently provide compelling evidence of such variation. We return to the question of age differences in specific consumer frauds when we examine other sources of evidence.

**Attempted versus successful victimization**

If older persons are more easily deceived, they might be expected to report a higher percentage of successful fraud attempts compared with adults of other ages. In most surveys, researchers fail to assess unsuccessful attempts at consumer fraud separately from successful attempts. There are two exceptions (Titus et al., 1995; Van Wyk & Mason, 2001). In both of these surveys, slightly less than half of the respondents classified the attempts as successful, and age did not predict success. Instead, “the key factor in victimization by personal fraud appears to be whether one receives an attempt” (Titus et al., 1995, p. 60). The findings on success are limited to these two surveys and depend on self-reports. The data are intriguing, but we hesitate to draw strong conclusions at this point.

**Shortcomings of representative surveys**

A major limitation of representative surveys is that they depend on self-reports. People’s answers to survey questions do not necessarily reflect their experiences accurately (Loftus, Fienberg, & Tanur, 1985; M. Ross, 1989; Schwarz, 1999; Tanur, 1992). Conceivably, some respondents were unaware of being defrauded, whereas others forgot the episode, misremembered when it occurred, preferred not to admit that they were defrauded, or claimed fraud that did not occur.

There is good reason to suppose that survey respondents have underreported their experience of consumer fraud on surveys. During its enforcement actions, the FTC has discovered that consumers are often ignorant of fraudulent charges on their credit card or phone bills (Anderson 2004). Also, the AARP (1996) noted that according to prosecutors who informed victims of their involvement in telemarketing scams, many, if not most continued to believe that they had not been defrauded. Rather many believed that they would have received their prize, or vacation or car etc., if only the Attorney General or the U.S. Attorney had not closed down the telemarketers’ business. (p. 38)

A survey of victims provided direct evidence of underreporting of an investment fraud (AARP, 2003). Although law enforcement officers had previously notified victims of their involvement in an investment fraud, only 27% of victims indicated that they had been swindled in the past 3 years in response to AARP survey questions.

Conceivably, older persons are especially inclined to underreport consumer fraud on surveys because they are more likely to be unaware, forget, or prefer not to admit that they were defrauded. An age difference in reporting could contribute to the survey finding that older adults are less likely to be defrauded. The evidence relating aging to underreporting is limited, but in a recent AARP survey of victims of fraud (whose names were provided by legal authorities), respondents 55 years of age and older were significantly less likely to acknowledge that they had been defrauded than were younger victims (Pak & Shadel, 2011).

In this survey, fraud victims were asked broad questions, such as “During the past five years, have you lost money in a financial transaction other than the stock market” (Pak & Shadel, 2011, p. 75). The overall percentage of respondents acknowledging victimization might have been higher if the survey questions had, instead, referred to the specific frauds that had deceived respondents (e.g., “Did you lose money in a lottery fraud?”). A reference to specific consumer frauds should serve as a better memory cue than a more general question (Tulving & Thomson, 1973) and may be particularly useful in helping older respondents remember the incident (Craik, 1986, 1992).

Researchers conducting representative population surveys typically include more detailed questions about
particular frauds. As a consequence, the findings reported by Pak and Shadel (2011) on age differences in acknowledgment of fraud may not be relevant. Also, their findings need replication. The authors of earlier AARP surveys of fraud victims found evidence of under-reporting, but they did not indicate that they examined or obtained age differences in likelihood of under-reporting (AARP, 1996, 2003).

Currently, there is a lack of compelling evidence that older persons are especially likely to underreport their experience of consumer fraud on representative surveys. The issue is not entirely resolved, however. It is possible that older persons underreport consumer fraud on surveys rather than underexperience consumer fraud in everyday life.

Complaint-Agency and Victim-List Studies

In light of the shortcomings inherent in representative surveys, we turned to two sources of data in which individuals who are presumed or known to have experienced consumer fraud are the focus: people’s reports of deceptive sales practices obtained from consumer-complaint agencies and victim lists provided by legal authorities.

Complaint agencies

Complaints about consumer fraud generally occur close in time to the incident and therefore depend less on the vagaries of memory than responses to representative surveys. Also, consumer-complaint agencies tend to report a greater variety of frauds derived from much larger samples than are available in representative surveys. In its Consumer Sentinel Network, the FTC provides by far the most extensive and well-detailed complaint data on consumer fraud. The Consumer Sentinel Network is an online collation of consumer complaints. The FTC compiles consumer complaints from its own records as well as from various agencies, including the FBI, state complaint agencies and attorney generals, the Better Business Bureau, the Internet Crime Complaint Center, the U.S. Postal Inspection Service, and the U.S. Social Security Administration. The complaints are sorted into different categories (e.g., identity theft, home repair, credit cards, and lotteries) as well as whether fraud was involved. The FTC makes these data available to researchers.

In Figure 1, we present the findings relating age to the proportion of total consumer fraud complaints for the 3 most recent years as well as the proportion of each age group in the overall population. Note that direct comparisons of frequencies between any 2 years are not meaningful because the agencies contributing to the database
Table 2. Age-Group Analyses on Reports of Fraud and Money Lost (Consumer Sentinel Network)

<table>
<thead>
<tr>
<th>Focus of analysis</th>
<th>Year</th>
<th>Younger (20–39 years of age)</th>
<th>Middle age (40–59 years of age)</th>
<th>Older (60+ years of age)</th>
<th>OR</th>
<th>95% CI</th>
<th>OR</th>
<th>95% CI</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fraud</td>
<td>2010</td>
<td>37%</td>
<td>47%</td>
<td>15%</td>
<td>1.51</td>
<td>[1.509, 1.510]</td>
<td>5.03</td>
<td>[5.024, 5.027]</td>
</tr>
<tr>
<td>Fraud</td>
<td>2011</td>
<td>32%</td>
<td>43%</td>
<td>22%</td>
<td>1.60</td>
<td>[1.603, 1.604]</td>
<td>2.67</td>
<td>[2.674, 2.676]</td>
</tr>
<tr>
<td>Fraud</td>
<td>2012</td>
<td>31%</td>
<td>42%</td>
<td>26%</td>
<td>1.61</td>
<td>[1.611, 1.612]</td>
<td>2.06</td>
<td>[2.060, 2.062]</td>
</tr>
<tr>
<td>Money lost</td>
<td>2012</td>
<td>38%</td>
<td>41%</td>
<td>19%</td>
<td>1.15</td>
<td>[1.147, 1.148]</td>
<td>3.04</td>
<td>[3.035, 3.037]</td>
</tr>
</tbody>
</table>

Note: Over the years, the Federal Trade Commission (FTC) widened the database sources; therefore, direct comparisons of frequencies across years are not possible. Percentages (%) = percentage of fraud reports in the respective age group relative to the total number of reports to the FTC; 95% CI = lower and upper bound of the confidence interval (at α = .05) of the respective OR. In OR analyses, the size of the population of the respective age groups is controlled for. About 67% of complainants indicated whether they had lost money.

The results from the Consumer Sentinel Network replicate evidence from representative surveys that, aggregating across all frauds, reports of consumer fraud decline in older ages. The finding that older persons were less likely to report losing money was also obtained in Titus et al.’s (1995) representative survey. These replications are especially noteworthy because the sampling procedures and methodologies are so different. The Consumer Sentinel Network’s finding that the experience of fraud was highest in middle age parallels findings from the most recent FTC representative survey (Anderson, 2013) in which individuals between 45 and 54 years of age tended to report the highest likelihood of experiencing consumer fraud.

Victim lists provided by legal authorities

Compared with complaint data from the Consumer Sentinel Network database, studies of victims whose names were provided by legal authorities include much smaller samples and a more limited set of frauds. A major advantage of the victim-list data sets is that the identification of victims does not depend solely on self-reports. In the AARP victim surveys, some to all of the names (depending on the survey) were obtained from lists of victims that legal authorities seized from the fraudsters. Although it is perhaps odd to characterize fraudsters as reliable, their lists are possibly more dependable than the self-reports that form the basis of other sources of data.

The AARP has conducted three victim-list surveys. In the earliest survey (AARP, 1996), victims of five telemarketing scams (e.g., fraudulent time share schemes and prize scams) who had lost money in the frauds were interviewed. Of the victims contacted by the AARP, 56% were 50 years of age or older. The AARP (1996) concluded that “older people appear to fall victims to telemarketing fraud much more than younger people do” (p. 2). This judgment was based on a comparison of the...
interview findings with census data—only 36% of the general population was 50 years of age and older.

In a second victim-list survey, the AARP (2003) interviewed samples of individuals 45 years of age and older who were victims of lottery and investment frauds, according to legal authorities, as well as a random sample of similar-age individuals from the general population. Lottery victims were older than investment victims and the sample from the general population; the latter two samples did not differ. In a more recent AARP study (Pak & Shadel, 2011), victims of investment fraud, lottery fraud, and prescription drug or identity theft frauds (these two categories were combined) were significantly older than individuals in a sample from the general population. Advance fee loan and business opportunity fraud victims did not differ in age from the sample of the general population.

In a non-AARP survey of a sample of participants in Melbourne, Australia, S. Ross and Smith (2011) similarly found that results varied by the type of fraud examined. Individuals who had sent money via an international wire transfer service to Nigeria (a common location of advanced fee consumer frauds) sometime during the previous year were contacted and then categorized as victims or nonvictims of three types of consumer fraud: online transactions, dating scams, and advance fee frauds (e.g., lottery scams). There were age differences in rates of victimization for each fraud: 18- to 24-year-old respondents were more likely to be victims of online transaction scams, 45- to 54-year-old respondents were more likely to be victims of dating fraud, and older adults (more than 65 years of age) were more likely to be victims of advance fee frauds.

**Shortcomings of consumer-complaint and victim-list research**

The data from consumer-complaint agencies have a number of limitations. In general, the FTC and other agencies have failed to verify consumers’ complaints and reports of financial loss. Also, the FTC has provided no formal analysis of the reliability of the coding of deceptive sales practices into different categories, such as fraud versus nonfraud (Nicholas Mastrocinque, personal communication, July, 2013). Especially important, there are potential reporting biases that threaten the representativeness of the samples in complaint databases. Findings from surveys of the general population suggest that fewer than 20% of fraud cases are reported to consumer-complaint agencies or legal authorities (Huff, Deilets, & Kane, 2010; Rebovich & Layne, 2000; Titus et al., 1995). In addition, a substantial proportion of complaints did not include the person’s age. Across years, between 47% and 57% of the complaints contained age information. Only some of the agencies that contribute to the database provide age data, and the age field is voluntary for FTC complaints (Nicholas Mastrocinque, personal communication, January 2014).

In the current context, it is particularly important to consider whether older persons are less likely than other adults to report consumer fraud or to state their age when making a complaint. Researchers have not examined whether older persons might be more inclined to withhold their age. In contrast, there has been considerable discussion and research on whether older persons are especially unlikely to report consumer fraud. Although some authorities speculate that this is the case (e.g., FBI, 2001), evidence related to this conjecture is mixed. In one representative survey, older persons indicated that they were more likely to inform complaint agencies and legal authorities about consumer fraud than did adults of other ages (Titus et al., 1995). Conversely, in a victim-list survey, Pak and Shadel (2011) found that younger adults were more likely to indicate they had reported their victimization. Finally, in several representative surveys, researchers obtained no age difference in reporting (Anderson, 2004; Muscat et al., 2002; Van Wyk & Mason, 2001). Currently, there is no consistent evidence that older persons differ from adults of other ages in their likelihood of reporting fraud to complaint agencies or legal authorities.

Victim-list research also has significant shortcomings. Victim-list studies include smaller samples and fewer consumer frauds than other types of research (see Table 1). As with research on complaint agency data, the quality of the victim-list samples is a particular concern. Fewer than 20% of individuals who claimed to have experienced consumer fraud on representative surveys indicate that they reported the fraud to legal authorities (Huff et al., 2010; Rebovich & Layne, 2000; Titus et al., 1995). This selection problem is avoided when victims’ names are obtained from lists that legal authorities seized from fraudsters. However, analyses of victim lists are compromised because researchers have trouble locating and interviewing the persons on the lists: “Many of the letters were returned as undeliverable, many of the phone numbers turned out to be disconnected or incorrect, and some victims had died or were disabled” (AARP, 1996, p. 39). Individuals on the victim lists were more difficult to contact than were members of the representative comparison sample (Pak & Shadel, 2011). In the AARP victim-list studies, 40% or fewer of the individuals on the original victim lists completed the surveys; S. Ross and Smith (2011) reported a response rate of 14.3% (this was a mail survey in contrast to the AARP telephone surveys). It is unclear whether ease of contact might be related to the age of the victims—an issue that warrants further investigation by those conducting victim-list studies.
It is problematic to base claims about age differences in the prevalence of consumer fraud on these victim-list studies because the samples are not necessarily representative of fraud victims as a whole. Also, findings for age could depend, in part, on how people on victim lists were contacted by fraudsters. A study of telemarketing fraud victim lists (e.g., AARP, 1996), for example, will likely include a substantial proportion of older persons. Salespeople are especially likely to contact individuals more than 70 years of age and are especially unlikely to contact younger adults through telemarketing, as evidenced by the complaint data in the Consumer Sentinel Network. A study of victims of Internet fraud might show a quite different age-related pattern.

**Discussion**

Our review fails to support the conventional wisdom that older persons are particularly likely to experience consumer fraud. In most representative surveys, researchers have aggregated their findings across frauds and have reported a decline in the experience of consumer fraud at older ages. The findings from representative surveys are more consistent when researchers aggregate across all consumer frauds than when they examine age differences in susceptibility to specific frauds. Although the findings associating specific consumer frauds with particular age groups vary across surveys, younger adults have reported experiencing more types of frauds than older persons. A decline in the experience of consumer fraud at older ages was also evident in aggregate findings from the complaint data available in the Consumer Sentinel Network. Finally, the victim-list studies may provide little useful information about age differences in the prevalence of consumer fraud because of small, highly selective samples and a limited selection of consumer frauds.

Conceivably, the amount of consumer fraud perpetrated against older persons is underestimated in the data sets because individuals with senile dementia are not being counted. Their impact on prevalence rates for consumer fraud would likely be quite minor, however, because of their relatively small numbers. The occurrence of dementia is estimated to increase from about 1% at 60–64 years of age to about 37% at more than 90 years of age, roughly doubling every 5 years after 65 years of age (Canadian Study of Health and Aging Working Group, 1994; Plassman et al., 2007). According to the 2010 U.S. census, individuals 90 years of age and older composed approximately 0.6% of the U.S. population and 4.7% of the older population (65 years of age and older; U.S. Census Bureau, 2011).

It could be argued that greater use of the Internet by younger adults partly accounts for an inverse relation between age and prevalence of fraud. Note, though, that representative surveys in which this relationship is obtained have been conducted since the early 1990s, well before the Internet became the locus of so much commerce and fraud. Also, if consumer fraud actually was less common among older persons, it would not be the only crime for which victimization declines with age. Law enforcement agencies and survey researchers in a number of Western countries have reported that persons 65 years of age and older are less likely to be victims of property crimes (e.g., household burglaries and purse snatches) and assaults than are adults of other ages (e.g., Brennan, 2012; Kesteren & Nieuwbeerta, 2000; Ogrodnik, 2007). Moreover, just as reductions in the prevalence of cumulative consumer fraud among older persons may partly reflect behavioral choices and lifestyle changes, so too might comparable decreases in assaults and thefts. Among persons 65 years of age or older, those who go out at night for recreation are more likely to experience assaults and burglaries (Carcach, Graycar, & Muscat, 2001).

**The weakness of the evidence**

Our review points to the complexities and ambiguities involved in trying to obtain a clear answer to what appears to be a simple question regarding the prevalence of consumer fraud at different ages. All of the evidence is potentially suspect. Many of the failings are inherent in the methodologies. Even very well-designed surveys, such as the FTC survey reported by Anderson (2013), inevitably depend on the accuracy of self-reports. Other sources of evidence obtained from consumer-complaint agencies, legal authorities, and victim lists are vulnerable to selection biases. Additional laboratory research featuring random assignment and focusing directly on aging and susceptibility to consumer fraud could remedy a variety of the potential flaws in other modes of research. Nonetheless, if we are mainly interested in age differences in the prevalence of consumer fraud in everyday life, then laboratory research, alone, is unlikely to be definitive. Field experiments on consumer fraud conducted in the context of people's everyday lives would circumvent the flaws of existing studies and conceivably provide more conclusive results than laboratory studies. Field experiments seem unethical, however, as they would require a high level of deception. Moreover, field experiments present additional practical problems. A definitive result would depend on a large sample of adults of various ages and many different frauds.

In sum, it is unclear that further research will provide better information on age differences in the prevalence of consumer fraud than is currently available. We may simply have to acknowledge that limitations of our research methods prevent us from obtaining conclusive
evidence. In the absence of irrefutable data, it is premature to conclude that consumer fraud is less prevalent among older adults, but it is also premature to conclude that consumer fraud is more prevalent among older persons, as is assumed in conventional and psychological wisdom.

Why do people assume that the prevalence of consumer fraud increases in old age?

There are a number of plausible reasons to assume that the prevalence of consumer fraud increases in old age. Psychological research reveals cognitive and affective changes associated with aging that could cause older people to be more vulnerable to fraud attempts. Also, the old age stereotype depicts older persons as relatively gullible and incompetent (Nelson, 2004)—characteristics that should heighten susceptibility to consumer fraud. Possibly most important, evidence from everyday life suggests an increase in the prevalence of consumer fraud in old age. Even if consumer fraud is not elevated among older persons, it represents a significant proportion of their experience with crime. Among individuals more than 65 years of age, consumer fraud is more than twice as likely as assault (largely because of low levels of assault). In contrast, the likelihood of experiencing assault and consumer fraud is similar among younger adults (Garcach et al., 2001).

These statistics suggest that consumer fraud would seem widespread among older persons, even if it were less common than in other age groups. When we learn about a crime committed against older persons, it is quite probable that it will involve consumer fraud. When we hear about a crime committed against adults of other ages, it is quite likely that it will be a burglary or assault. If we use readily available information to judge frequency, we will conclude that older persons are disproportionately victimized by consumer fraud (availability heuristic; Tversky & Kahneman, 1973).

Implications for psychology researchers

In the introduction, we cited authors of scientific articles and media reports who presumed that consumer fraud was particularly pervasive among older persons and suggested mechanisms to explain this relationship. The lack of compelling evidence for the presumed increase in the prevalence of consumer fraud among older persons has general implications for researchers. We suggest that researchers are too ready to jump from potential vulnerabilities to assumptions about prevalence. In considering the susceptibility of older persons to consumer fraud, researchers emphasize vulnerabilities created by cognitive and neural declines documented in laboratory experiments. In doing so, they fail to also consider possible protective factors, such as those discussed by Baltes and Baltes (1990) in SOC theory or by Grossmann et al. (2013) in their study of age-related increases in wise reasoning. As well, researchers fail to take into account mundane everyday factors, such as age-related changes in income and purchasing behavior, that could affect the prevalence of consumer fraud in various age groups.

In research articles and media interviews, researchers often speculate about the real-world implications of their research. Unfortunately, naïve audiences sometimes regard these speculations as the major contribution of the research, especially journalists and bloggers who present scientific findings to a more general audience. Of course, researchers cannot fully control what bloggers, journalists, and others say about their research. In the current context, however, well-intentioned researchers who generalize from laboratory research on age-related cognitive vulnerabilities to estimates of the prevalence of consumer fraud may inadvertently harm the very people they seek to help. Through their undocumented speculations, researchers lend apparent scientific credence to a negative stereotype of older persons as especially weak and gullible.

We do not suppose or wish to imply that psychologists are responsible for this negative stereotype. It would almost certainly exist in our culture in the absence of psychologists, neuroscientists, and their research and speculations. We simply suggest that researchers should ascertain the accuracy of speculations that are potentially detrimental to the portrayal of certain social groups.

Implications for social policy

Consumer fraud is a costly and common problem in the United States and other Western countries, but our review suggests no compelling need to create mechanisms or to enact special legislation to protect the elderly from this particular crime. We recommend, instead, that legislatures offer improved and equal protection to consumers of all ages. We offer this recommendation with the following caveat: Persons with severe cognitive impairments should receive special protection from consumer fraud. Even in very old age, however, a minority of persons experience dementia. There is no need for laws that treat all older persons as if they are cognitively impaired.

Declaration of Conflicting Interests

The authors declared that they had no conflicts of interest with respect to their authorship or the publication of this article.
Notes

1. The source of this 80% figure appears to be a prepared statement by the FTC before the Special Committee on Aging of the U.S. Senate (FTC, 2000), which suggests that older persons constitute 80% or more of the victims of “some” scams. The percentage seems to be based on interviews with 43 alleged victims of telemarketers. We present more comprehensive FTC data that yield a different conclusion.

2. Surveys and other data sources differ in the lower bound of the age range for the category “older persons.” Although 65 years of age is a common cutoff, some researchers use 50, 55, or 60 years of age as the category boundary.

3. The data that the FTC provided us for 2012 indicated the category (e.g., identity theft) into which each complaint was categorized rather than the original statements of complaint or the FTC’s fraud versus no fraud coding. We had two coders independently identify each category as fraudulent or not. Their percentage of agreement was 95%. Comparing our coding of the data with the FTC’s, we found that we characterized fewer complaints as fraud (42% of their total), likely because we lacked information in the original complaint available to the FTC coder. When we analyzed our coding, we replicated findings presented in Figure 1 and Table 2.

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