DEBRA POGRUND STARK, JESSICA M. CHOPLIN & MARK A. LEBOEUF

Ineffective in Any Form: How Confirmation Bias and Distractions Undermine Improved Home-Loan Disclosures

This Essay examines three experiments that tracked eye fixations as participants reviewed home-loan disclosure forms. The experiments revealed confirmation biases in which participants read to confirm what they were told (e.g., "Your loan is at 4%") and then failed to look for contradictory evidence such as rate adjustments. Improved forms reduced confirmation biases, but that improvement was undermined when the experimenter engaged participants in distracting conversation. These results demonstrate that improving disclosure forms cannot sufficiently protect consumers. They also suggest that mortgage counseling is necessary for many borrowers.

INTRODUCTION

For several decades, Congress has attempted to help consumers make prudent home-loan decisions, primarily by mandating the use of home-loan disclosure forms that disclose the key terms of the loan, including interest rates, fees, and closing costs.¹ Consumers must receive such forms at two stages: (i) within three days after they apply for a loan (containing estimated figures) and (ii) just before closing (containing final figures). In theory, the

For example, Congress enacted the Truth in Lending Act, Pub. L. No. 90-321, tit. I, 82 Stat. 146, 146-59 (codified as amended at 15 U.S.C. §§ 1601-1614 (2006)), in 1968 and the Real Estate Settlement Procedures Act, Pub. L. No. 93-533, 88 Stat. 1724 (codified as amended at 12 U.S.C. §§ 2601-2017 (2006)), in 1974. Congress has focused on home-loan disclosure forms in lieu of alternative options, such as capping interest rates and fees or prohibiting certain loan terms. The Home Ownership Equity Preservation Act (HOEPA) prohibits certain loan terms in high-cost loans. See Home Ownership and Equity Protection Act, Pub. L. No. 103-325, §§ 151-158, 108 Stat. 2160, 2190-98 (1994) (codified as amended in scattered sections of 15 U.S.C.). However, HOEPA covers only a small percentage of loans. See 15 U.S.C. § 1602(aa) (2006).

disclosures are intended to ensure that consumers have a chance to review, understand, and approve the terms of the loan. Congress has continued to rely on this method to prevent predatory lending, even as home-loan products have become increasingly complex, risky, and divergent in pricing over time.²

In 2008, in response to the residential mortgage crisis—in which many consumers took out overpriced and unaffordable home loans³—the Department of Housing and Urban Development (HUD) created a revised Good Faith Estimate disclosure form (GFE disclosure), one of the disclosures that borrowers receive within three days of applying for the home loan. HUD also created a revised HUD-1 Settlement Statement (HUD-1 form), one of the disclosures that borrowers receive at the closing of the loan, to better disclose the terms of loans to consumers.⁴

The 2008 revisions, which became effective on January 1, 2010, attempted to address a key problem: many consumers were taking out loans mistakenly thinking that they were receiving fixed-rate loans when they were actually getting much riskier, floating-rate loans. For the latter, the initial interest rate and monthly payments were low, but later increased to levels that many borrowers could not afford.⁵ The pre-2010 HUD-1 form did not require lenders to disclose the interest rate or monthly payment or explain how such rates and payments could increase.

At the time, the rules on disclosing adjustable-rate features under the Truth in Lending Act (TILA) resulted in misleading disclosures. Specifically, the Act permitted lenders to calculate a borrower's potential monthly payment after a rate change based on an index and margin at the time the lender made the loan, rather than how high the rate could actually rise over the term of the loan.⁶

See Debra Pogrund Stark & Jessica M. Choplin, A Cognitive and Social Psychological Analysis of Disclosure Laws and Call for Mortgage Counseling To Prevent Predatory Lending, 16 PSYCHOL. PUB. POL'Y & L. 85, 86 n.4 (2010).

^{3.} See ELIZABETH WARREN & AMELIA WARREN TYAGI, THE TWO-INCOME TRAP: WHY MIDDLE-CLASS MOTHERS AND FATHERS ARE GOING BROKE 135 (2003) (estimating that as many as 40% of high-cost subprime loans were made to borrowers who would have qualified for a lower-cost prime loan).

^{4.} See Good Faith Estimate (GFE), 24 C.F.R. pt. 3500 app. C (2013); Settlement Statement (HUD-1), 24 C.F.R. pt. 3500 app. A (2013). The rule also established limits on the extent to which certain fees and costs can change at closing from the amounts estimated. See 24 C.F.R. § 3500.7(c), (e) (2013).

^{5.} See Ruth Simon, Rising Rates To Worsen Subprime Mess, WALL ST. J., Nov. 24, 2007, http://online.wsj.com/article/SB119586137992302497.html.

^{6.} Experiment 1 of this study uses a TILA disclosure based on an actual deal we received from a mortgage broker who prepared the form in compliance with TILA requirements at the time the broker made the loan (which was prior to January 30, 2011). The form notes that the

HUD designed the 2010 HUD-1 form to more clearly disclose this information. Moreover, in 2012, the Consumer Financial Protection Bureau (CFPB) proposed new, consolidated forms – combining the GFE disclosure with the TILA disclosure provided when an applicant applies for a loan, and consolidating the HUD-1 form with the TILA disclosure required at closing – to help consumers understand the terms of the loan being offered.⁷

This Essay describes the results of three eye-tracking experiments testing whether even improved loan-disclosure forms provide an effective strategy for adequately protecting consumers. These experiments tracked participants' eye fixations as they reviewed the pre-2010 HUD-1 and TILA disclosures or the 2010 HUD-1 disclosure form. The experiments also tested participants' recall of key loan terms and their evaluations of the presented loan. We specifically tested for "confirmation biases," i.e., cognitive biases wherein individuals skim through documents seeking to confirm the truth of what they are told (e.g., "Your loan is at 4%") and fail to skim for evidence that a statement is false (e.g., that the loan may start at 4%, but can increase to a rate as high as 8%).⁸ These confirmation biases are of particular interest because, if they produce the hypothesized effects, they would cause consumers to miss the critical information that disclosure forms were designed to communicate, thereby undermining Congress's intentions in mandating the use of disclosure forms.

Part I of this Essay describes our methodology in further detail, and Part II presents our results. We found that consumers do demonstrate confirmation biases. Our results further suggest that the 2010 change in disclosure forms was beneficial for consumers, as fewer study participants failed to see that the interest rate could rise with the 2010 HUD-1 form than with pre-2010 HUD-1 and TILA forms. We also investigated the effect of "dual tasking." Dual tasking may occur when, for example, a mortgage broker engages borrowers in conversation while they are attempting to read a form, and it may increase confirmation biases and cause more consumers to miss important disclosed

loan is an adjustable-rate loan, but the amounts it provides as examples for future monthly payments are equal to or less than the initial monthly payment. It does not show how those amounts can increase over time. The Mortgage Disclosure Improvement Act (MDIA) of 2008, which requires better disclosure of potential rate increases, did not become effective until January 30, 2011. *See* Pub. L. No. 110-289, tit. V, 122 Stat. 2654, 2855-58 (codified at 15 U.S.C. §§ 1638(b)(2), 1640(a) (2006 & Supp. 2011)).

See Integrated Mortgage Disclosures Under the Real Estate Settlement Procedures Act (Regulation X) and the Truth in Lending Act (Regulation Z), 77 Fed. Reg. 51,116 (Aug. 23, 2012) (to be codified at 12 C.F.R. pts. 1024, 1026).

^{8.} For evidence suggesting that few people attempt to falsify hypotheses and seek only evidence confirming them, see, for example, P.C. Wason, *On the Failure To Eliminate Hypotheses in a Conceptual Task*, 12 J. EXPERIMENTAL PSYCHOL. 129 (1960).

terms. We found that dual tasking considerably decreased the effectiveness of the 2010 disclosure form.

In light of our findings and other psychological phenomena, we argue in Part III that relying primarily on disclosure forms, even improved ones, is inadequate. To better protect consumers and address the limited effectiveness of such forms, we recommend that Congress amend the Dodd-Frank Act⁹ to expand the limited mortgage-counseling services that the law currently requires for extremely high-cost loans to cover all home loans for which the borrower fails to pass a "financial literacy test." Part III also recommends more robust counseling and other improvements to the counseling provisions and procedures proposed by the CFPB in July 2012.¹⁰

I. METHODOLOGY

A. Eye-Tracking

We ran three experiments that tracked consumers' eyes as they reviewed home-loan disclosure forms. Experiment 1 investigated confirmation biases on the pre-2010 HUD-1 and TILA forms. To test whether the revised forms reduce confirmation biases and improve recall and loan evaluation, Experiment 2 investigated confirmation biases on the 2010 HUD-1 form. Experiment 3 investigated the impact of conversation on confirmation biases, recall of loan terms, and loan evaluation under the 2010 HUD-1 form.

B. Participants

We excluded data from five participants because of data-recording failures, leaving the following totals. In Experiment 1, fifty undergraduate students reviewed the pre-2010 HUD-1 and TILA disclosure forms. Twenty-five were in the "monthly payment condition," in which experimenters told them the initial monthly payment but not how it might adjust. Twenty-five were in the "interest rate condition," in which the experimenter told them the initial interest rate. In Experiment 2, forty-eight undergraduate students (twentyfour in the monthly payment condition and twenty-four in the interest rate

Dodd-Frank Wall Street Reform and Consumer Protection Act, Pub. L. No. 111-203, 124 Stat. 1376 (2010) (to be codified in scattered sections of 12 U.S.C.).

^{10.} *See* High-Cost Mortgage and Homeownership Counseling Amendments to the Truth in Lending Act (Regulation Z) and Homeownership Counseling Amendments to the Real Estate Settlement Procedures Act (Regulation X), 77 Fed. Reg. 49,090 (Aug. 15, 2012) (to be codified at 12 C.F.R. pts. 1024, 1026).

condition) reviewed the 2010 HUD-1 disclosure form. In Experiment 3, fortytwo undergraduate students (twenty-two in the monthly payment condition and twenty in the interest rate condition) reviewed the 2010 HUD-1 disclosure form while the experimenter attempted to engage them in conversation. In exchange for their participation, students received credit in an introductory psychology course and one dollar for every correctly recalled term.¹¹

C. Procedure, Materials, and Equipment

We tested all participants individually in approximately twenty-minute sessions. An EyeLink 1000 eye tracker (made by SR Research, Ltd.) recorded participants' eye movements.

Upon arrival, the experimenter informed participants that the purpose of the study was to assess how mortgage consumers review home-loan disclosure forms. Participants sat down and placed their heads in the chin rest of the eye tracker. To allow participants to acclimate to the eye-tracking apparatus, participants read through a short article unrelated to the study. After participants completed the article, the experimenter described the disclosure forms and their purpose. The experimenter explained to participants that their task was to read through the forms as if they were the consumers taking out the loans, and that, after they finished reading, they would answer questions about the contents of the forms they reviewed. The experimenter told them that they would be paid one dollar for every loan term that they correctly recalled, and that they could not reference the forms while answering the questions.

Once participants confirmed that they fully understood the task, the experimenter gave participants information that could create confirmation biases. Specifically, participants were randomly told either that (1) "the interest rate for your loan is 3.875%" (the interest rate condition); or (2) "the monthly payment for your loan is \$1,960.00" (the monthly payment condition). In neither condition did the experimenter disclose that the quoted rate would apply only for a limited period of time. In contrast to Experiments 1 and 2, the experimenter in Experiment 3 attempted to engage the participants in conversation from a set of six predetermined topics while participants reviewed the forms.

n. The authors are currently running experiments focusing specifically on older participants and minorities, who will be compared with these students. The mean age of the students in the present study was 20.0 years, with a standard deviation of 3.0 years. Approximately 36% were minority participants, which was defined as identifying as African American; Asian American or Pacific Islander; Hispanic or Latino/Latina; Middle Eastern; or multiracial.

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After reviewing the disclosure forms, participants in all three experiments recalled loan terms and answered questions about the loan, including participants' thoughts on the quality of the loan. The specific questions asked, as well as participants' responses, are discussed below. After these questions were completed, the experimenter paid participants one dollar for every loan attribute they correctly recalled and thanked them for their time.

II. RESULTS

A. Eye Fixations

We first investigated whether presenting misleading information – such as stating the initial interest rate or monthly payment without qualifying the term as temporary – would create confirmation biases. If a confirmation bias existed, participants would tend to locate information confirming the stated interest rate or monthly payment and fail to search for information that could disconfirm it. Specifically, they would fail to look for evidence that the loan adjusts.

To investigate this question and track where the participants looked on the forms, we defined non-overlapping, rectangular Areas of Interest (AOIs) around the initial interest rate, initial monthly payment, and areas of the form that would make it clear that these terms were not permanent. AOIs are used to define areas of a display that are under consideration for tracking purposes. Eye movements – namely, fixations – that land on or within these areas can be analyzed and compared.¹² We analyzed the number of fixations that landed on or within these AOIs, where a fixation was defined as an event in which the eyes stayed relatively still (consecutive gaze coordinates were located within one degree of visual angle of these AOIs) for a duration of two hundred milliseconds or more. We present example forms and their corresponding AOIs in Figures A and B.

^{12.} See Alex Poole & Linden J. Ball, *Eye Tracking in HCI and Usability Research, in* ENCYCLOPEDIA OF HUMAN COMPUTER INTERACTION 211, 211-19 (Claude Ghaoui ed., 2006).

Figure A.¹³

1ST ADVANTAGE MORTGAGE | Originator: Adam Kriticos 031.0000617

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^{13.} AOIs on the TILA form used in Experiment 1. The rectangles labeled A and B represent confirmatory information. Because there is no place for the interest rate on this form, we used the figure for the annual percentage rate (APR) as confirmatory information. The rectangle labeled C represents disconfirmatory information. These rectangles and labels were not visible to participants.

Figure B.¹⁴

Your initial loan amount is	\$ 417,000.00
Your loan term is	30 years
Your initial interest rate is	3.875 %
Your initial monthly amount owed for principal, interest, and any mortgage insurance is	I 1960.89 Principal Interest Mortgage Insurance
Can your interest rate rise?	No. ✓ Yes, it can rise to a maximum of 8.875 % Tr Compare will be on S/11/2015 and can change again every 12 months after S/12/2015 Every change date, your interest rate can increase or decrease by 2 % Over the life of the loan, your interest rate is guaranteed to never be lower than 2.55 % or higher than 8.875 % Image: Compare the lower than 2.875 %
Even if you make payments on time, can your loan balance rise?	No. Yes, it can rise to a maximum of S
Even if you make payments on time, can your monthly amount owed for principal, interest, and mortgage insurance rise?	No. Ves, the first increase owed can rise to \$ 3,126.58 The maximum it can ever rise to is \$ 3,126.58 F
Does your loan have a prepayment penalty?	✓ No. Yes, your maximum prepayment penalty is \$
Does your loan have a balloon payment?	Very Very Very Very Very Very Very Very
Total monthly amount owed including escrow account payments	You do not have a monthly escrow payment for items, such as property taxes and homeowner's insurance. You must pay these items directly to yourself. You have an additional monthly escrow payment of \$ 1,118,66 that results in a total initial monthly amount owed of \$ 3,079,55. This includes principal, interest, any mortgage insurance and any items checked below: Property taxes Homeowner's insurance Flood insurance

Note: If you have any questions about the Settlement Charges and Loan Terms listed on this form, please contact your lender.

We present examples below of confirmatory and disconfirmatory fixation patterns from participants in eye-tracking "heat maps" that show distributions of eye movements. For the purposes of this study, we define a confirmatory pattern of fixation as at least one fixation in the AOI containing confirmatory information without an additional fixation in any of the AOIs containing disconfirmatory information. For example, on the 2010 HUD-1 form, if a participant made a fixation on the initial monthly payment term, but failed to fixate on at least one of the maximum monthly payment terms, we defined this pattern of fixation as a confirmatory search strategy. We define a disconfirmatory search strategy as at least one fixation in the AOIs containing disconfirmatory patterns for the TILA form used in Experiment 1. Figure D demonstrates confirmatory and disconfirmatory patterns for the 2010 HUD-1 form used in Experiments 2 and 3.

^{14.} AOIs on the 2010 HUD-1 disclosure form used in Experiments 2 and 3. The rectangles labeled *A* and *B* represent confirmatory information, and the rectangles labeled *C* through *F* represent disconfirmatory information. These rectangles and labels were not visible to participants.

Figure C.¹⁵

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15. Confirmatory (top) and disconfirmatory (bottom) patterns of eye movements on the TILA form used in Experiment 1. Darker areas indicate that a participant looked at the AOI for greater periods of time.

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Figure D.¹⁶

Your initial loan amount is	\$ 417,000.00
Your loan term is	30 years
Your initial interest rate is	3.875 %
Your initial monthly amount owed for principal, interest, and any mortgage insurance is	\$ 1,960,89 includes ☐ Principal ☐ Montpage Insurance
Can your intervet rate rise?	No. 2 Yes, it can rise to a maximum of 8.875 %. The first change will be on 51/2015 and can change again every 12 months after 51/2015. Every change date, your interest rate can increase or decrease by 2 %. Over the life of the loan, your interest rate is guaranteed to rever be lower than 225 % or higher than 8.275 %.
Even if you make payments on time, can your loan balance rise?	No. Yes, it can rise to a maximum of \$ -
Even if you make payments on time, can your monthly amount owed for principal, interest, and mortgage insurance rise?	No. ♥Yes, the first increase can be on 6/1/2015 and the monthly amount overed can rise to \$ 3,126.58 The maximum it can ever rise to is \$ 3,125.59
Does your loan have a prepayment penalty?	No. Yes, your maximum prepayment penalty is \$
Does your loan have a balloon payment?	No. Yes, you have a balloon payment of \$ due in years on
Table monthly amount overal including ecorove account payments	You do not have a mentify escree payment for items, such as property taxes and homevere's insurance. You must pay these laters directly to yourself. You have an additional monthly escree payment of \$ 1,118.66 that estimation a to taki nish monthly amount eved of \$ 3,3076.55 This includes principal, interest, any morigage insurance and any terms checked before. Property taxes Flood insurance Flood Flood insurance Flood

Note: If you have any questions about the Settlement Charges and Loan Terms listed on this form, please contact your lender

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Your Initial Icon amount is	\$ 417,000.00				
Your lean term is	30 years				
Your initial interest rate is	3.875 %				
You hild monthly amount owned for principal, interest, and any morpage insurance is	\$ 1960.89 includes ⊘Principal ⊘Internet Urdinage Instudance				
Can your intervet cale isso?	No. 27 Yes, it calmines to a maximum of 8.875 %. The first change will be on 51/L015 and can change again early 12 months after 51/L2015. Every change date, your interact has an increase or developed by 2 %. Over the life of the loan your interact rate is guaranteed in rever be lower than 2.25 % or higher than 18.875 %.				
Even if you make payments on time, can your loan balance rise?	No. Yes, it can rise to a maximum of \$.				
Even if you make payments on time, can your monthly amount owed for principal, interest, and mortgage insurance rise?	Na. → Tes, the first increase can be on 6/1/2015 and the monthly sinceret overclearmose to \$ 3,126,58 The maximum (trace even rise to is \$ 3,126,58				
Does your loan have a prepayment penalty?	No. Yes, your maximum prepayment penalty is \$				
Does your loan have a balloon payment?	No. Yes, you have a balloon payment of \$ due in years on				
Total monthly amount owed including escrew account payments	You do not have a monthly escrow payment for items, such as property taxes and homeowner's insurance. You must pay these items directly to yourself.				
	Vou have an additional monthly escore payment of \$ 1,118.66 that results in a blad initial monthly amount eved of \$ 3,079.55 This includes principal, initienti, any montgage insurance and any terms checked below Property taxes Phote insurance Phote insu				

- 16 Confirmatory (top) and disconfirmatory (bottom) patterns of eve movements on t
- 16. Confirmatory (top) and disconfirmatory (bottom) patterns of eye movements on the 2010 HUD-1 used in Experiments 2 and 3. Darker areas indicate that a participant looked at the AOI for greater periods of time.

In Experiment 1, we excluded two participants (one of the twenty-five participants in the interest rate condition and one of the 25 participants in the monthly payment condition) from the fixation analysis because they did not fixate on either confirmatory or disconfirmatory information, leaving forty-eight participants for analysis. Of the remaining forty-eight participants, 29% of those in the interest rate condition (seven participants out of twenty-four) and 33% of those in the monthly payment condition (eight participants out of twenty-four) displayed a confirmatory fixation pattern.

In Experiment 2, we excluded one participant (one of the twenty-four participants in the monthly payment condition) from the fixation analysis because the participant did not fixate on either confirmatory or disconfirmatory information, leaving forty-seven participants for analysis. Of the remaining forty-seven participants, 4% of those in the interest rate condition (one participant out of twenty-four) and 35% of those in the monthly payment condition (eight participants out of twenty-three) displayed a confirmatory fixation pattern.

Comparing the results of Experiments 1 and 2 suggests that better designed forms may help some consumers avoid confirmation biases, but the results are equivocal. A statistical analysis combining the interest rate and monthly payment results failed to find a statistically significant advantage for the 2010 HUD-1 form over the pre-2010 HUD-1 form. While fewer participants (19%) in Experiment 2 displayed confirmatory fixation patterns than participants (31%) in Experiment 1, the difference was not statistically significant.¹⁷ When we analyzed the results by condition, we found no difference for the monthly payment condition (33% in Experiment 1 versus 35% in Experiment 2). We did find a statistically significant difference in the interest rate condition (29% in Experiment 1 versus 4% in Experiment 2).¹⁸ Thus, the improved 2010 HUD-1 disclosure form only helped participants avoid confirmation biases if the interest rate was the loan attribute they were primed to confirm.

There are several possible explanations for the disparate results between the interest rate and monthly payment conditions in Experiment 2. First, the distance between the confirmatory and disconfirmatory information on monthly payments on the 2010 HUD-1 form (rectangles B and E in Figure B) was greater than the distance between confirmatory and disconfirmatory

^{17.} $\chi^2(1, N = 95) = 1.84, p > 0.05$. By convention, only *p*-values less than 0.05 are considered statistically significant.

^{18.} Fisher's exact test *p*-value = 0.048. This interaction also demonstrates that these results reflect true confirmation biases, rather than preferences for particular locations or terms: if participants simply preferred to look at places on the form that happened to be confirmatory, then there would have been no interaction with the information that was disclosed. The interest rate and the monthly payment condition results would have been comparable.

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information on interest rates (rectangles *A* and *C* in Figure B). Individuals may be more likely to notice contradictory information that is physically close than contradictory information that is physically far away. Second, it is possible that the media attention on adjustable interest rates during the recent mortgage crisis sensitized participants to the issue, but only the better-designed form allowed them to find the information they sought.¹⁹

In Experiment 3, we tested the effect of conversation on confirmation biases using the improved 2010 HUD-1 form. We excluded two participants (one of the twenty participants in the interest rate condition and one of the twenty-two participants in the monthly payment condition) from the fixation analysis because they did not fixate on either confirmatory or disconfirmatory information, leaving forty participants for analysis. Of the remaining forty participants, 42% of those in the interest rate condition (eight participants out of nineteen) and 48% of those in the monthly payment condition (ten participants out of twenty-one) displayed a confirmatory fixation pattern.

Comparing the results of Experiments 2 and 3 demonstrates that distracted participants were more likely to use a confirmatory test strategy than participants who were not distracted.²⁰ Forty-five percent of the participants in Experiment 3 displayed a confirmatory fixation pattern, while only 19% of participants in Experiment 2 displayed such a pattern. These results suggest that better-designed disclosure forms are insufficient for protecting consumers from confirmation biases if distractions occur as consumers review home-loan disclosure forms. We have reason to believe that such distractions are commonplace.²¹

B. Recall of Critical Loan Attributes

Participants' difficulties recalling information presented in the disclosure forms-even though they were paid one dollar for every correct answer-

^{19.} A combined disclosure form proposed by the CFPB is an improvement in that it contains both the adjusted rate and monthly payment figures right next to the initial figures. Based on our results, one would expect lower confirmation biases with such a form.

^{20.} $\chi^2(1) = 6.75, p = 0.009.$

^{21.} The first author of this Essay has handled and attended numerous real estate closings, and it is her experience that a great deal of conversation occurs during the closing that is unrelated to the documents being signed and delivered to the closing agent. It appears that a study of this phenomenon has not been conducted, or at least not reported. Circumstantial evidence, at least, supports our prediction that distraction is commonplace. Using a different form of distraction, Ted Janusz, an experienced mortgage broker, has described how his firm employed attractive and scantily clad closing agents to distract borrowers from reading the numbers at closings so the firm could manipulate the figures. *See* TED JANUSZ, KICKBACK: CONFESSIONS OF A MORTGAGE SALESMAN 7-9 (2006).

further underscores how problematic it is to rely on disclosure forms to protect consumers from predatory lending.

To analyze participants' recall of critical loan terms, we focused on four attributes of the loan: the initial interest rate, the initial monthly payment, the maximum interest rate, and the maximum monthly payment. We asked participants to recall these attributes. Participants excluded from the fixation analyses in Experiment 1 (two participants), Experiment 2 (one participant), and Experiment 3 (two participants) were included in the recall analyses. We deemed an answer correct if the first two digits of the recalled value matched those of the term's actual value. For example, if the initial interest rate was 3.875%, we counted as correct any value between 3.800% and 3.899%. Likewise, if the maximum interest rate was 8.875%, we counted as correct any recalled value between 8.800% and 8.899%.

Table 1 displays the number and percentage of participants within each experiment and condition who correctly recalled the essential loan terms.²² The results suggest that consumer recall was better using the 2010 HUD-1 form (Experiment 2), rather than using the pre-2010 form (Experiment 1). However, once we added conversation (Experiment 3), accurate recall dramatically declined even with the improved forms.

Combining the results of participants' recall under both conditions in Experiments 2 and 3 shows that conversation inhibited recall for almost every term. Participants were less likely to recall the initial interest rate (33% versus 75% correct),²³ maximum interest rate (12% versus 38% correct),²⁴ and maximum monthly payment (5% versus 19% correct)²⁵ while engaged in conversation. The only term for which the difference in recall was not statistically significant was the initial monthly payment (17% versus 19% correct).²⁶ These findings suggest that conversation makes it very difficult for participants to encode and recall loan-related information.

- **23.** $\chi^2(1, N = 90) = 15.750, p < 0.01.$
- **24.** $\chi^2(1, N = 90) = 7.713, p < 0.01.$
- **25.** $\chi^2(1, N = 90) = 4.085, p < 0.05.$
- **26.** $\chi^2(1, N = 90) = 0.067, p = 0.80.$

^{22.} It would have been problematic or impossible to test for this information in Experiment 1 because the maximum interest rate was not presented on the TILA or pre-2010 HUD-1 forms, and the presentation of the adjusted monthly payment on these forms was potentially misleading. These terms are, therefore, marked as not applicable (N/A) in Table 1. To gauge whether the participants in Experiment 1 knew that interest rates and monthly payments could adjust upward, experimenters asked them to estimate the interest rate and monthly payment in three and five years' time. We analyze the results of that experiment in the next Section.

Table 1.

NUMBER OF PARTICIPANTS WHO CORRECTLY RECALLED INFORMATION IN EACH CONDITION

EXPERIMENT 1	DISCLOSUR	E CONDITION
LOAN TERM	INTEREST RATE N (%)	MONTHLY PAYMENT N (%)
Initial interest rate	20 (80%)	8 (32%)
Initial monthly payment	4 (16%)	10 (40%)
Maximum interest rate	N/A	N/A
Maximum monthly payment	N/A	N/A

EXPERIMENT 2	DISCLOSURE CONDITION			
LOAN TERM	INTEREST RATE N (%)	MONTHLY PAYMENT N (%)		
Initial interest rate	23 (96%)	13 (54%)		
Initial monthly payment	3 (13%)	6 (25%)		
Maximum interest rate	9 (38%)	9 (38%)		
Maximum monthly payment	6 (25%)	3 (13%)		

EXPERIMENT 3	DISCLOSURE CONDITION			
LOAN TERM	INTEREST RATE N (%)	MONTHLY PAYMENT N (%)		
Initial interest rate	9 (45%)	5 (23%)		
Initial monthly payment	1 (5%)	6 (27%)		
Maximum interest rate	4 (20%)	1 (5%)		
Maximum monthly payment	1 (5%)	1 (5%)		

C. Estimation of Future Interest Rates and Monthly Payments in Experiment 1

In compliance with statutory requirements, the TILA disclosure used in Experiment 1 did state that the loan contained a variable-rate feature. However, neither the TILA forms nor the pre-2010 HUD-1 form presented the maximum interest rate or monthly payment possible under the loan. Moreover, the future monthly payment information on the TILA disclosure reflected an amount less

than the initial interest rate and monthly payment amount.²⁷ Although the TILA disclosure expressly noted that the loan was a floating-rate loan, the eye-fixation results presented above suggest that this statement was insufficient to alert consumers to this feature or the risk of the loan.

To further investigate this question, we asked participants in Experiment 1 to estimate the interest rate and the monthly payment on the loan in three years and again in five years. We classified estimates (1) below a 3% interest rate or a \$1,900 monthly payment as projected decreases; (2) between a 3% and 4% interest rate or between a \$1,900 and \$2,000 monthly payment as constant projections; and (3) above a 4% interest rate or a \$2,000 monthly payment as projected increases.

Table 2 shows the estimated values of future interest rates and monthly payments. The majority of participants projected that interest rates and monthly payments would remain constant or decrease. Only 32% and 36% of participants estimated that the interest rate would increase in three and five years, respectively. Only 24% and 30% thought the monthly payment amount would increase in three years and five years, respectively.²⁸ Consistent with the misleading nature of the TILA statement, participants were particularly likely to project that monthly payments would decrease. These results demonstrate that the variable-rate statement included in the TILA disclosure was inadequate to inform consumers that the loan they were considering was adjustable and that the monthly payments could nearly double.

Table 2.

	TOL	D INITIAL I	NTEREST R	RATE	TOLD INITIAL MONTHLY PAYMENT			
	ESTIMATES OF FUTURE MONTHLY PAYMENTS		ESTIMATES OF FUTURE INTEREST RATES		ESTIMATES OF FUTURE MONTHLY PAYMENTS		ESTIMATES OF FUTURE INTEREST RATES	
	3 years	5 years	3 years	5 years	3 years	5 years	3 years	5 years
Decrease	36%	44%	4%	4%	36%	44%	12%	8%
Constant	36%	20%	64%	56%	44%	32%	56%	60%
Increase	28%	36%	32%	40%	20%	24%	32%	32%

EXPERIMENT 1: ESTIMATES OF FUTURE INTEREST RATES AND MONTHLY PAYMENTS

27. In our opinion, this disclosure was misleading even though it complied with TILA requirements.

28. Some participants who estimated increases provided unreasonably high estimates. (The threshold was 100% for the interest rate and \$10,000 for the monthly payment.) We interpreted those estimates as saying that rates would increase by an unknown amount.

D. Loan Quality Judgments

We asked participants to rate the quality of the loans they reviewed. Participants' ability to rate loan quality is important because it goes to the very purpose of disclosure forms: to provide information on loan terms so that borrowers can make informed judgments about whether an offered loan is overpriced, unaffordable, or otherwise risky or unsuitable.

We asked participants to rate the quality of a hypothetical, variable-rate loan on a scale from one to seven. A score of one indicated a very bad loan, while a score of seven reflected a very good loan. We also asked participants to provide written comments on the quality of the loan by typing their responses on the computer screen. Participants should have rated the loan poorly and provided negative comments for the loan because it was an adjustable-rate loan (at a time when fixed-rate loans were available at historically low rates) and riskier than a fixed-rate loan.²⁹ There were no significant differences on the loan ratings among the three experiments,³⁰ but there were profound differences in participants' comments.

Table 3 presents these results. The comments were appropriately negative overall in Experiment 2, in which participants reviewed the better designed 2010 HUD-1 form without conversation; 64% of the comments were negative (thirty-three out of fifty-two) in Experiment 2, while only 21% were positive (eleven out of fifty-two).

By contrast, the comments were positive overall in the other two experiments. In Experiment 1, in which participants reviewed the pre-2010 HUD-1 and TILA forms, the comments were favorable overall; 48% of comments were positive (twenty-eight out of fifty-nine) while 29% were negative (seventeen out of fifty-nine). In Experiment 3, in which participants reviewed the better form but were engaged in conversation, the comments were favorable overall; 53% of comments were positive (twenty-four out of forty-five) while 29% were negative (thirteen out of forty-five).

^{29.} The adjustable feature could cause the monthly payment to increase to a level that the participant would be unable to afford if interest rates were to increase (unless they were insensitive to the risk of unaffordability-an unlikely situation for the participants in an undergraduate study).

^{30.} The differences in the mean ratings of Experiment 1 (4.06), Experiment 2 (3.63), and Experiment 3 (4.14) were not statistically significant. F(2,134) = 1.93, MSE = 1.76, p > 0.05. There was, however, a statistically significant interaction between the experiment and the information provided. Accordingly, ratings were lower in Experiment 2 when participants were originally provided with monthly payment information but not when participants were originally provided with interest rate information. F(2,134) = 3.37, MSE = 1.76, p < 0.05. By convention, only *p*-values less than 0.05 are considered statistically significant.

Table 3.

NUMBER OF PARTICIPANTS CITING EACH EXPLANATION FOR THEIR LOAN RATINGS

COMMENT VALENCE	EXPERIMENT 1 (N)	EXPERIMENT 2 (N)	EXPERIMENT 3 (N)
POSITIVE			
Low interest rate	17	5	14
Low monthly payment	2	0	0
Fair loan/Low cost	4	4	5
Loan duration	1	1	0
Steady payment terms	1	1	2
No balloon payment	0	0	2
Absence of prepayment penalty	2	0	0
No hidden fees	1	0	1
NEUTRAL			
Lack of knowledge	14	8	8
NEGATIVE			
Adjustable interest rate	2	22	7
High interest rate	9	1	0
Adjustable monthly payment	0	3	0
Magnitude of adjustable interest rate	0	4	0
Excessive fees	2	2	1
Cost of monthly payment	0	0	2
Overall cost of loan	4	1	3

The results from these experiments reflect a general inability of the participants to appropriately assess the adjustable-rate loan as very negative, regardless of the form used or presence or absence of distraction. A review of the narrative comments suggests that participants were more likely to recognize the possibility of a future rate increase or payment increase when they reviewed the 2010 HUD-1 form and were not intentionally distracted. From these results, we conclude that the improved disclosure forms better alert consumers to the fact they are receiving loans where the interest rate and monthly payment can increase greatly. More worrisome is the fact that none of the participants commented on the implications of the adjustable-rate loan feature for the future affordability of the loan. This suggests that consumers may need counseling to effectively judge the appropriateness of a loan.

III. PROPOSED LEGAL REFORMS

The CFPB has recognized that home loans have become complicated products with terms that are often difficult for consumers to understand.³¹ The results of this study suggest that improving disclosure forms, without more, may be insufficient to educate consumers on the consequences of taking out home loans.

When consumers have questions regarding the information presented in home-loan disclosures, they often ask their lenders or mortgage brokers for guidance. Because those agents have a financial interest in having the borrower take out the loan, lenders and brokers may emphasize favorable rather than unfavorable loan terms or, in some cases, answer such questions in a deceptive or fraudulent way.³²

That possibility, coupled with the results described in Part II, suggests that the combined disclosure forms recently proposed by the CFPB are unlikely to adequately protect consumers. Even if improved forms can successfully alert all home-loan mortgage consumers to the presence of adjustable rates, the forms fail to explain the risks from such adjustable rates. A home-mortgage loan may have other risky terms, such as a balloon-payment feature, that disclosure forms do not address.³³ Confirmation biases and dual tasking, coupled with a basic lack of understanding about the meaning and significance of loan terms, make it difficult for consumers to notice or evaluate those features, even with improved forms.

To avoid overloading consumers with information, the CFPB decided not to include any educational information in the recently proposed disclosure forms.³⁴ Yet if consumers do not understand loan features, such as "balloon payments," and their associated problems, merely disclosing the presence of such features will not be adequate.

^{31.} See Integrated Mortgage Disclosures Under the Real Estate Settlement Procedures Act (Regulation X) and the Truth in Lending Act (Regulation Z), 77 Fed. Reg. 51,116, 51,126 (Aug. 23, 2012) (to be codified at 12 C.F.R. pts. 1024, 1026).

^{32.} See Jeff Sovern, Preventing Future Economic Crisis Through Consumer Protection Law or How the Truth in Lending Act Failed the Subprime Borrowers, 71 OHIO ST. L.J. 761, 802-06 (2010).

^{33.} In a balloon-payment loan, monthly payments of the interest and principal are inadequate to pay off the principal balance of the loan by maturity, causing a portion or the entire loan amount to be due upon maturity of the loan.

^{34.} See Integrated Mortgage Disclosures, 77 Fed. Reg. at 51,127.

Even when consumers are familiar with loan features from other sources, significant cognitive and social-psychological barriers may still impede consumers' judgments.³⁵ For example, even if consumers are eligible for better terms, they may settle for less favorable loans if they have already sunk time, effort, and money into obtaining the loan.³⁶ Consumers may also demonstrate inappropriate levels of trust in brokers or lenders, thinking they will provide properly priced and suitable home loans. Borrowers with less education or income may be particularly vulnerable.³⁷ Consumers may also proceed with a loan even after spotting an unfavorable term, as long as they receive some minimal explanation. One experiment by the first two authors of this study found that the senseless explanation that the form contained a particular loan term "because it was drafted that way" was sufficient to induce consumers to proceed with a deal when they were orally promised one thing but the contract provided something different than what was promised.³⁸

We believe that the best way to ensure that consumers understand a loan's risks and costs is to provide "mortgage counseling interventions."³⁹ Under the counseling we propose, consumers would receive an explanation of the terms of the loan for which they have applied. Consumers would also receive a determination from an independent, specially trained mortgage counselor about whether the loan appears to be: (i) overpriced,⁴⁰ (ii) unaffordable, (iii)

- 38. See Jessica M. Choplin, Debra Pogrund Stark & Jasmine N. Ahmad, A Psychological Investigation of Consumer Vulnerability to Fraud: Legal and Policy Implications, 35 LAW & PSYCHOL. REV. 61, 94 (2011). In the study, we asked participants to sign a consent form for participating in a psychology experiment. Contrary to prior assurances that they would receive one hour's credit for each hour of effort, the form required them to participate for three hours over three consecutive weeks and receive only one hour's credit. Of the participants who noticed and objected, most were persuaded to sign anyway once they were given an explanation. Even a senseless explanation was sufficient to induce them to sign.
- **39.** See Stark & Choplin, *supra* note 2, at 113-25 (discussing the substance of such counseling in greater detail).
- **40.** By overpriced, we mean that the borrower qualifies for a loan with a lower interest rate, fees, and/or closing costs, based on the borrower's credit score and other factors.

^{35.} See Stark & Choplin, supra note 2, at 97-105 (identifying fourteen such factors).

^{36.} For further discussion on this economic tendency, see Hal R. Arkes & Catherine Blumer, *The Psychology of Sunk Cost*, 35 ORG. BEHAV. & HUM. DECISION PROCESSES 124 (1985).

^{37.} See Stark & Choplin, supra note 2, at 89.

The CFPB's proposed disclosure forms do not explain that borrowers can use a loan's APR figure (which takes into account interest rates, fees, and most closing costs) to compare loan offers or determine whether the APR figure is overpriced. Mortgage counselors could explain the pricing and evaluate the APR for which the borrower can qualify using the borrower's credit score and then checking myFICO.com to see what APRs are generally available for borrowers with similar scores.

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risky (owing to the presence of an adjustable-rate or balloon-payment feature), or (iv) otherwise unsuitable (e.g., because the refinancing is likely to result in a net economic loss to the borrower if the borrower is refinancing an existing debt).⁴¹ Preventing consumers from entering into overpriced home loans is particularly important because a large percentage of homeowners during the housing bubble entered into overpriced loans. Current home-loan disclosures have been ineffective at helping consumers determine whether their loans are overpriced.⁴²

Mortgage-counseling interventions could also help consumers overcome biases associated with information overload. Consumers often look for a single reason to make a decision ("reason-based decisionmaking") and fail to perform a normative in-depth analysis when faced with too much information.⁴³ The amount of relevant information that a counselor should review with a borrower in making a wise home-loan decision likely exceeds the amount of information that the consumer can process independently. We thus propose that counselors be required to make a simple recommendation to consumers whether or not the proposed loan appears to be the best the borrower can obtain.⁴⁴

The robust form of counseling we recommend can mitigate many of the cognitive and social psychological factors that prevent home-loan disclosures from being effective, especially if, as we recommend, the counseling is tailored to address these phenomena.⁴⁵ The mortgage counselors would be trained and licensed by HUD, and their determinations would be based on criteria set forth in regulations created by HUD or the CFPB.⁴⁶ We recommend that the new counseling law clarify that any determinations and recommendations they

- See Eldar Shafir, Itamar Simonson & Amos Tversky, Reason-Based Choice, 49 COGNITION 11, 11-36 (1993).
- 44. This recommendation would be based on criteria developed by HUD or the CFPB.

46. Any determinations and recommendations made by a counselor in good-faith compliance with these criteria would immunize the counselor from liability.

^{41.} Because there are typically costs associated with obtaining a loan, if the new loan is not held long enough, the borrower might not reap a net benefit from the new loan with a lower interest rate.

^{42.} The combined disclosure forms proposed by the CFPB will likely make this situation worse by relocating the APR information from the top of the first page of the TILA form to the middle of the third page of the consolidated form. *See* Integrated Mortgage Disclosures Under the Real Estate Settlement Procedures Act (Regulation X) and the Truth in Lending Act (Regulation Z), 77 Fed. Reg. 51,116 (Aug. 23, 2012) (to be codified at 12 C.F.R. pts. 1024, 1026).

^{45.} See Jessica M. Choplin, Debra Pogrund Stark & Joseph A. Mikels, Cognitve Barriers to Rational Home Loan Decision Making: Implications for Mortgage Counseling, in PSYCHOLOGY OF COUNSELING (Annamaria Di Fabio ed., forthcoming 2013) (on file with authors).

make in good-faith compliance with these criteria would immunize the counselor from liability relating to them. We also recommend that attorneys train for this licensing so they can provide such counseling in addition to important legal counsel on the purchase transaction.⁴⁷

Some consumer-advocacy groups have objected to counseling as the primary means of protection because they fear that it places too many burdens on consumers to protect themselves.⁴⁸ But those critics assume a much weaker form of counseling than the kind we propose, where the counselor simply explains the terms of the offered loan but fails to advise the consumer on whether it is in fact a good loan. The counseling we propose, which goes beyond the counseling that the CFPB contemplates,⁴⁹ would not place difficult burdens on consumers to protect themselves.

Lenders have objected to counseling, arguing that it would result in delays and add costs to the lending process.⁵⁰ But counseling would be less timeconsuming and costly than the process of appraising home values, a process that is already mandated. In addition, a mandatory counseling requirement could have prevented some of the billions of dollars that were lost in the foreclosure crisis as a result of unsophisticated consumers' taking out overpriced and unaffordable adjustable-rate loans.⁵¹

In Dodd-Frank, Congress has already required counseling for certain "high-cost home loans" and for first-time homebuyers who apply for a home loan with negative amortization (i.e., where the principal amount increases rather than decreases).⁵² Typical home loans are not covered.⁵³ We recommend

^{47.} See Debra Pogrund Stark, *Navigating Residential Attorney Approvals: Finding a Better Judicial North Star*, 39 J. MARSHALL L. REV. 171 (2006) (detailing the many risks in a home purchase and how an attorney can mitigate those risks).

^{48.} See, e.g., Stark & Choplin, supra note 2, at 128 & n.141 (describing these criticisms).

^{49.} In Dodd-Frank, Congress required consumers to obtain counseling on the "advisability" of high-cost home loans. See Dodd-Frank Wall Street Reform and Consumer Protection Act, Pub. L. No. 111-203, § 1433, 124 Stat. 1376, 2162-63 (2010) (to be codified at 15 U.S.C. § 1639). But in its proposed counseling rule, the CFPB concluded that this provision "does not require the counselor to have made a judgment or determination as to the appropriateness of the loan for the consumer." Instead, the counselor is only supposed to "address" the affordability of the loan and the key terms of the loan (i.e., to provide only information, not advice). See High-Cost Mortgage and Homeownership Counseling Amendments to the Truth in Lending Act (Regulation Z) and Homeownership Counseling Amendments to the Real Estate Settlement Procedures Act (Regulation X), 77 Fed. Reg. 49,090, 49,124 (Aug. 15, 2012) (to be codified at 12 C.F.R. pts. 1024, 1026).

^{50.} See Stark & Choplin, supra note 2, at 128 & n.140.

^{51.} See id. at 130.

^{52.} See Dodd-Frank Wall Street Reform and Consumer Protection Act §§ 1414(a), 1433(e).

that Congress require all home-loan borrowers to obtain counseling if they fail to pass a financial literacy test. The test would consist of a series of questions designed to gauge consumers' understanding of real estate and financial terms and to test their ability to use disclosure forms to effectively evaluate an offered loan. Either HUD or the CFPB should create the test, and it should be available on an agency-controlled website. This will ensure that counseling be provided to those who need it most.

We also recommend that the CFPB modify its proposed regulations to better explain what information a mortgage counselor should review with the borrower. The regulations should expand on what counselors can do to make the counseling intervention more effective in addressing the problem of borrowers entering unsuitable home loans. In comments to the CFPB, we detail these recommendations further and suggest other changes to the CFPB's proposed rules relating to the timing of counseling and the source and manner of payment of counseling fees.⁵⁴ The changes we recommend are designed to enhance the effectiveness of counseling and address problems of sunk costs, temporal discounting, and reciprocity effects that exist under the procedures the CFPB proposed.⁵⁵

Dodd-Frank requires lenders and mortgage brokers to provide a list of counselors to all borrowers at the time they apply for a home loan.⁵⁶ In implementing this requirement, we recommend the CFPB also require that, in addition to this list, lenders and brokers provide a description of the services that counselors can provide and the fees typically charged for such services. We believe that that additional requirement will help borrowers recognize the value of counseling, which we believe exceeds the typical charge for such services.⁵⁷

55. See id.

57. The typical fee is approximately \$350. The savings that counseling can generate can far exceed this value. For example, if the borrower takes out a loan for \$300,000 at a 4.5%

^{53.} See *id.* § 1431(a). The Act requires counseling for a first-time homebuyer when the APR is 6.5% greater than the prime, and the points and fees are greater than 5% of the total transaction costs.

^{54.} See Debra Pogrund Stark & Jessica M. Choplin, Comments to CFPB Proposed Rule on High-Cost Mortgage and Homeownership Counseling Amendments to the Truth in Lending Act and Homeownership Counseling Amendments to the Real Estate Settlement Procedures Act (The "Proposed Counseling Rule"), ERULEMAKING PROGRAM MGMT. OFFICE (Sept. 12, 2012), http://www.regulations.gov/#!home;tab=search (search for comment ID: CFPB-2012-0029-0132).

^{56.} Integrated Mortgage Disclosures Under the Real Estate Settlement Procedures Act (Regulation X) and the Truth in Lending Act (Regulation Z), 77 Fed. Reg. 51,116, 51,134 n.112 (Aug. 23, 2012) (to be codified at 12 C.F.R. pts. 1024, 1026).

Finally, in preparing the list of HUD-approved counselors, we recommend that the CFPB prepare the list rather than leaving the job to the mortgage broker or lender, as the proposed rule currently provides. If lenders can select and order the list, they are likely to select those counselors who are most "lender friendly." That will compromise the independence and integrity of the counseling that takes place and undermine the effectiveness of the counseling.

CONCLUSION

Results from three eye-tracking experiments demonstrate that better home-loan disclosure forms can reduce confirmation biases, improve recall of loan attributes, and improve loan evaluations. But the results also demonstrate that the advantages of better forms diminish when consumers are forced to engage in dual tasking, i.e., they are distracted by conversation while they review the disclosure forms.

In light of these findings, other psychological barriers to rational homeloan decisionmaking, and the consequences of poor decisionmaking, we propose expanding the counseling requirements in the Dodd-Frank Act to cover all home loans when the borrower has failed to pass a financial literacy test. We also recommend that the CFPB modify its current proposed rules to require more robust counseling that includes providing clear and direct advice to consumers concerning whether the offered loan is overpriced, unaffordable, risky, or otherwise unsuitable. When appropriate, counselors should also help consumers shop for loans with better terms. Disclosure forms alone are unlikely to adequately protect many borrowers, but they could be highly effective in preventing consumers from entering into unsuitable loans if supplemented with robust counseling from specially trained independent counselors.

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interest rate, but the counselor helps the borrower find a loan at an interest rate of 4%, this can lead to a savings of almost three times the typical counseling charge in the first year, \$7,376 over seven years, and \$31,611 over thirty years.

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