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Many important and complex consumer decisions rely on the advice of trusted professional experts. Many experts, however, such as doctors, financial advisers, and accountants, may be prone to conflicts of interest. As such, consumers may seek a second opinion. A series of studies investigate consumers' reluctance to seek additional advice in the context of having an ongoing relationship with one expert service provider. The authors find evidence in health care claims that long-term relationships contribute to more expensive, but not necessarily better, treatment. In addition, a series of experiments show that people recognize when they could benefit from a second opinion but are more reluctant to do so when thinking about their own providers rather than someone else's. Further studies test a relationship maintenance hypothesis and show that consumers' reluctance to seek second opinions is partially driven by their motivation to preserve relationship harmony, even when it is at their own personal expense and well-being. Taken together, these results provide important insight into the potential limitations and consequences of long-standing relationships between consumers and experts.

Keywords: advice seeking, service relationships, consumer behavior

Are Consumers Too Trusting? The Effects of Relationships with Expert Advisers

Some of life's major consumer decisions are guided by ongoing relationships with expert advisers. Investment advisers, accountants, attorneys, and health care providers are all experts who repeatedly advise consumers through decisions of great complexity and financial consequence. Although the advice-taking literature is rich with regard to how consumers interpret cues about advice and expertise (e.g., Sniezek and Van Swol 2001; Van Swol and Sniezek 2005), little is known about advice taking in the context of an ongoing relationship with the same expert.

Health care decisions, in particular, provide a timely context in which to study advice taking because health-related

choices can have great personal financial consequence in addition to physical consequence (Himmelstein et al. 2009), and ongoing relationships with single expert providers are heavily emphasized as a way to encourage compliance with recommended treatment advice (Emmanuel and Dubler 1995; Iacobucci and Ostrom 1993). Following doctors' advice is deeply rooted in trust because health care consumers have little choice but to rely on advice from experts who have more information, skill, knowledge, confidence, and power to control outcomes (Moorman, Zaltman, and Deshpandé 1992; Sniezek and Van Swol 2001). However, in high-stakes service domains such as health care, the increased compliance accompanying ongoing relationships (Emmanuel and Dubler 1995) may not always benefit consumers. Research shows that people can experience negative outcomes when their advisers have financial conflicts of interest (Brennan et al. 2006; Cain, Loewenstein, and Moore 2005; Dana and Loewenstein 2003; Iglehart 2005; Studdert, Mello, and Brennan 2004).

Using a set of claims data (Study 1), we first investigate whether longer relationships with experts can result in more expensive, but not necessarily better, treatment. We then examine consumers' willingness to acknowledge and confront potentially costly errors and conflicts of interest by getting a second opinion from another expert who does not financially benefit from the advice (Study 2). We

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demonstrate that consumers are more likely to get a second opinion when taking an outside third-party adviser perspective than when taking an inside advisee perspective, suggesting that when people step outside a relationship, they are less reluctant to question experts. To test whether irrelevant relationship cues are driving these effects, we next examine whether disrupting personal rapport, by portraying a service provider who denies a consumer's request for a personal favor, increases reliance on second opinions (Study 3). Finally, in Study 4, we show that such disruptions on the part of experts negatively influence consumers' sense of professional trust and personal liking, both of which are important mechanisms underlying the decision to get a second opinion.

In this context, we hypothesize that consumers may experience more expensive, but not necessarily better, treatment from long-term providers.

H₁: Tenure with the same expert can contribute to higher consumer out-of-pocket costs.

H₁ suggests that patients are at a financial disadvantage with increasing tenure. Practically speaking, it is unwise to suggest that consumers eschew long-term clinical relationships. However, consumers can assuage concerns about accuracy and conflicts of interest by getting a second opinion from another expert who is not financially vested in the advice. Still, second opinions may be challenging in the health service domain because of informational and power asymmetries that lead consumers to be particularly trusting (e.g., Moorman, Zaltman, and Deshpandé 1992). If people trust their health providers' advice for relational reasons or feel compelled to act as if they show trust and deference, requesting a second opinion may be uncomfortable. Indeed, medical research demonstrates that greater physician trust is associated with decreased interest in second opinions (Hall et al. 2002), but it is unclear what drives this trust and whether it is rooted in expertise or other less relevant factors.

Advice-taking research shows that relationship cues during service interactions affect people's trust in experts and willingness to accept their advice. For example, Sniezek and Van Swol (2001; see also Van Swol and Sniezek 2005) find that experts' confidence is a significant predictor of both advisee trust and advice acceptance, regardless of advice quality. In addition, having a prior interaction with an expert increases trust but does not improve decision outcomes. Therefore, trust is an important predictor of advice taking but can be influenced by both relevant (advice elaboration) and irrelevant (a prior relationship) cues—but only in the case of relevant cues does it improve decision quality (Sniezek and Van Swol 2001).

Because trust is influenced by interpersonal interactions, people may not be willing or able to recognize the potential for conflicts of interest in their *own* service providers whom they inherently trust, but they may acknowledge this for *other* people's providers. As such, people may be more objective in their evaluation of second opinions as third-party advisers than as advisees. Third-party advisers, for example, have been shown to emphasize decision accuracy over other concerns, such as relationship maintenance (Zikmund-Fisher et al. 2006). Thus, we predict that people will be more likely to recommend second opinions when objectively advising others than when considering their own decisions.

H₂: Consumers will be more favorable toward second opinions in the role of outside adviser than in the role of advisee.

H₂ suggests that relationship harmony looms larger for advisees (versus more accuracy-focused advisers) and leaves them reluctant to request second opinions. This implies that the social norms underpinning relationship maintenance are a pivotal aspect of trust. Rapport in personal and professional relationships is often defined by mutually agreeable social norms (Fiske 1992; McGraw and Tetlock 2005). In general, people are motivated to agree with their relationship partners and relatively disinclined to seek conflict (Kunda 1990) because inconsistencies between liking someone and rejecting their beliefs can lead to cognitive dissonance (Festinger and Carlsmith 1959). We hypothesize that well-cultivated relationships with experts may discourage consumers from getting second opinions as a result of normative social influence (Deutsch and Gerard 1955), in which people act against privately held beliefs and instead comply with the recommendations of people by whom they want to be regarded favorably. That is, although people may privately believe that second opinions are beneficial (e.g., the relatively objective adviser view), they may not be willing to broach this topic with an expert with whom they have an ongoing relationship. This sentiment has been recently addressed by Sah, Loewenstein, and Cain (2011), who find that when experts disclose financial conflicts of interest, the patients' trust diminishes but they feel more pressure to comply with the experts' advice. As such, our studies propose that a salient, long-term personal relationship with an expert professional will decrease people's propensity to seek a second opinion because they are more motivated to comply as relationships develop. One test of this basic idea involves manipulating whether a patient has an established relationship with a health care provider.

H₃: Consumers will seek fewer second opinions when their relationship with providers is long-standing than when it is new.

Building on H₂, we expect that the impact of the advisee (versus adviser) perspective will be stronger for long-standing relationships because consumers have concerns about preserving the relationship. That is, patient-participants should be most hesitant to question treatment advice from a longtime provider. Thus, we predict that the relative decrease in second opinion popularity among those imagining themselves as patients rather than advisers will be strongest when the provider is a longtime (vs. new) provider. If, as we propose in H₂ and H₃, a person's established relationships reduce the propensity to seek second opinions, we question the extent to which behaviors that disrupt relationship harmony will affect the pattern of results. More specifically, detraction from feelings of personal rapport (regardless of quality or skill) will increase the propensity to get a second opinion. To directly test this proposed mechanism, in Study 3 we investigate a challenge to the relationship by asking participants to imagine that their provider grants or rejects a request for a personal favor; we expect that rejection will result in greater preference for second opinions.

H₄: Disrupting personal rapport increases preference for second opinions.

Finally, one of our main propositions is that patients and advisers evaluate the relative costs and benefits of second opinions differently because they vary in perspective. Empathy gaps lead advisers to underestimate the pull of the relationship, and they may underestimate the additional time and money required to get a second opinion or the potential for a backlash from the primary provider. Inasmuch as factors such as transaction costs and concerns about future care might provide alternative explanations of patients' reluctance to get second opinions, we use Study 4 to gather more in-depth responses to the manipulations. Specifically, we use mediation to show that though patients and advisers vary in perspective on many elements, it is the differential emphasis on irrelevant relationship cues that makes people less likely to seek a second opinion from a trusted adviser.

H_5 : Sensitivity to personal relationship-relevant cues influences the perceived quality of advice.

We tested our hypotheses in the context of dentistry because it provides a realistic account of consumer-driven health care, in which benefits providers may cover some low-cost preventive care and a network of physicians, but consumers and dentists typically agree to rates for services (much like any other consumer domain). In addition, most dentists operate small independent businesses and make almost all their income from procedures, inherently posing conflicts of interest. Finally, our experimental studies use adult consumer samples who are likely to be familiar with the experience of paying out-of-pocket for care and with the idea of second opinions.

OVERVIEW OF EXPERIMENTS

Study 1 examines a 12-year period of dental claims data and finds that as tenure with an expert provider increases, so does out-of-pocket expenditures for routine treatments, such as dental fillings and crowns (H_1). Next, we conducted a series of web-based experiments to determine the conditions under which consumers recognize the value of second opinions in determining the best course of treatment in a complex and expensive dental care scenario. Study 2 tests the hypothesis that participants will more clearly recognize the need for second opinions as advisers than as patients and that established patient-provider relationships tend to decrease demand for second opinions (H_2 and H_3). Study 3 further examines the underlying process by introducing a patient's request for a personal favor. By manipulating whether the favor is rejected or accepted, we test whether the desire to get a second opinion is guided by relationship cues (H_4). Last, Study 4 uses a mediation analysis to understand the extent to which the differential response of patients and advisers to the value of second opinions is driven by relationship cues rather than other factors that make patients more sensitive to transaction costs or compromised future care (H_5).

STUDY 1: DENTAL CLAIMS

For most U.S. consumers, common dental procedures, such as fillings and crowns, are only partially covered by dental insurance. When performing such treatments, dentists can either use tooth-colored materials (e.g., resin composite, porcelain) that are expensive and have mainly

aesthetic benefits or use less expensive silver amalgam fillings and gold crowns, which are both cheaper and offer slightly better durability. Randomized clinical trials of pediatric (Bernardo et al. 2007; Soncini et al. 2007) and adult (Simecek, Diefenderfer, and Cohen 2009) populations show that composite fillings require significantly more repairs than amalgam (silver) restorations, particularly in posterior teeth. In light of this evidence, the American Dental Association (see <http://www.ada.org/3094.aspx>) states that given its durability, and especially when aesthetics are less of a concern (posterior teeth), amalgam is the standard of care. Similarly, gold crowns are preferable in posterior teeth for which aesthetic considerations are less important because they have better longevity than porcelain (Donovan et al. 2004; Federlin et al. 2007; Kassem, Atta, and El-Mowafy 2010; Land and Hopp 2010). In addition to experiencing reduced durability, patients who are treated with non-metal materials may be required to pay more out-of-pocket for their treatment, both because these materials are more expensive and because dental insurance might limit reimbursement for materials that have no documented clinical advantage. At the same time, dentists may profit more by using the nonmetal materials both at the time of service and later if the work needs to be more frequently repaired.¹

To test H_1 , we examined claims data to determine whether the length of the relationship between a patient and dentist had a significant influence on the out-of-pocket costs for fillings and crowns on teeth for which there is no clear choice of materials (e.g., white composites and porcelain for visible front teeth and silver and gold for posterior teeth). That is, we examine teeth for which patients and dentists have a choice to upgrade to a more expensive treatment with no clear clinical benefit—and a dubious cosmetic benefit—to determine whether the relationship between the dentist and the patient influences patient expenditures.

Method

We drew a sample of claims (from 1997 to 2008) provided by a large U.S. dental benefits provider. The sample contained 112,803 patients with 3,166,191 observations (~28 observations per patient) drawn from the total population of claims. The sampling step width was 1/30 policyholders, aged 18 and over, using the following variables: doctor's state of licensing and patient zip code, gender, and birth date (in that order). Patients were selected on the basis of being the policyholder (i.e., no spouses or children). The sample was set to match Census information on population density (zip code), gender (when available), and age. No other demographic information (e.g., income) was provided. Each filling and crown claim was considered a single observation.

We created two subsamples from the original data set to examine fillings and crowns separately. We found that

¹Although the analyses show that patients pay more out-of-pocket for tooth-colored materials and that dentists charge more for those materials, we do not know whether dentists profit more from those procedures than from metal procedures. We have no direct way to assess profitability from the claims, but our conversation with multiple dentists and the claims provider suggested that tooth-colored material procedures were more profitable. Moreover, the analyses show that tenure with dentists increases out-of-pocket costs for all procedures, regardless of the material used.

almost all fillings in visible front teeth (99%) are white composite and most molars are silver amalgam (95%). For the remaining side teeth, the rate of composites is 25%, suggesting that there is some discretion in deciding which materials to use for this subset of teeth. We thus focus our filling analyses on this subset of 206,559 claims. Similarly, porcelain crowns are used in 98% of front teeth, versus only 33% for posterior teeth, suggesting some discretion in the choice of posterior tooth materials. This subset of posterior teeth includes 56,549 claims for the crown analyses.

Next, we created variables from the overall data set to measure tenure with a dentist, a patient's dental visit frequency, and each dentist's tooth-specific preference for materials (see Column 1 of Table 1). To measure relationship length at the time of each procedure, we computed the number of visits to the same dentist for any reason before getting each filling or crown. For example, if a patient saw a dentist twice for cleanings, once for a root canal, and once for a filling, the number of visits at the time of the filling would be four. This variable is the key predictor of relationship length. It is also a more sensitive measure of relationship length than the number of years with a particular dentist because some patients may have the same dentist for ten years but only see him or her twice, whereas other patients may have the same dentist for only three years but have visited six or seven times. We computed the patient's dental visit frequency variable by counting the number of visits to any dentist, including specialists, for any reason before the procedure. This variable serves as a measure of patient history that may reflect personal preferences or needs. Finally, we created a variable that measures dentists' overall preferences for certain materials in specific teeth by computing the base rate of composite or porcelain materials in each tooth at each visit over the entirety of the dentists' patients.

In addition to these variables, each claim had the following information: date, patient unique identifier, patient age, provider unique identifier, procedure billing code (e.g.,

composite or amalgam filling, porcelain or gold crown), the exact tooth worked on and the corresponding tooth surface (e.g., lingual side), how much the patient's plan contributed, how much the dentist charged, and the patient's balance (a measure of the out-of-pocket costs, or the difference between what the dentist charged for a procedure and what the insurance covered).

Results

Table 1 shows the results of dentist and patient factors that influence out-of-pocket costs (the amount the patient is responsible for paying after receiving the benefit) for both fillings and crowns. For all analyses, we used the .05 cutoff level to determine statistical significance. We used multiple regression analyses (fit under the assumption of a normal distribution) separately to examine correlates of the two continuous outcome variables, patients' out-of-pocket payments for dental fillings and crowns. Because some patients had multiple fillings and crowns, we conducted the regressions using a generalized estimating equations (GEE) approach (PROC GENMOD in SAS) with the patient unique identifier as a repeated measures (cluster) independent variable, with the assumption of an exchangeable correlation matrix and examination of Type III tests of model effects. We used the following approach with the filling and crown out-of-pocket payment outcomes as separate dependent variables in a series of GEE regressions: First, we conducted a regression analysis separately for each category of covariates (i.e., patient age, year) with all the variables in the category included as independent variables. Second, we included all the independent variables that were significantly associated with the outcome across the covariate categories in a final regression model (see Table 1). The variable year (over the 12-year claims period) was highly correlated with the dentists' base rate for materials and consequently was not included in the final models. The reported results are unchanged and robust to including year.

Table 1
STUDY 1: RESULTS OF GENERALIZED ESTIMATING EQUATIONS (GEE) MULTIPLE REGRESSION ANALYSES EXAMINING CORRELATES OF DENTIST AND PATIENT FACTORS INFLUENCING OUT-OF-POCKET COSTS (IN U.S. DOLLARS) FOR DENTAL FILLINGS AND CROWNS

Variable	Dental Fillings			Dental Crowns		
	Parameter Estimate ^a	95% Confidence Interval	p-Value ^b	Parameter Estimate ^a	95% Confidence Interval	p-Value ^b
Patient age	-.13	-.15, -.11	.0001	-.05	-.19, .08	.44
Number of overall dental visits (for any reason, to any dentist)	-.53	-.56, -.52	.0001	-3.07	-3.22, -2.92	.0001
Amount paid by dental plan	-.23	-.24, -.23	.0001	-.67	-.69, -.66	.0001
Number of visits with same dentist prior to procedure (relationship length)	.50	.44, .56	.0001	4.34	3.95, 4.74	.0001
Dentist's base rate for composite (porcelain) materials	16.71	14.29, 18.04	.0001	16.8	5.43, 28.17	.01
Number of visits with same dentist * dentist's base rate	.21	.0029, -.54	.05	-.27	-1.24, .69	.58

^aParameter estimates are unstandardized regression coefficients.

^bp-values are from Type III tests of model effects.

Notes: We performed identical multiple regression analyses (fit under the assumption of a binary distribution) with binary material choice (metal vs. tooth-colored) as the dependent measures and revealed the same pattern of results (e.g., tenure with dentists positively predicts resin composite fillings and porcelain crowns).

Table 2
STUDY 1: RESULTS OF GEE MULTIPLE REGRESSION ANALYSES EXAMINING CORRELATES OF REPAIR RATES FOR DENTAL FILLINGS AND CROWNS

Variable	Dental Fillings			Dental Crowns		
	Parameter Estimate ^a	95% Confidence Interval	p-Value ^b	Parameter Estimate ^a	95% Confidence Interval	p-Value ^b
Composite filling/Porcelain crown	.03	.007, .06	.012	.0043	-.02, .03	.70
Number of overall dental visits (for any reason, to any dentist)	.01	.009, .01	.0001	.0003	-.001, .001	.58
Number of visits with same dentist prior to procedure (relationship length)	.01	.005, .007	.0001	.0003	-.0006, -.001	.51

^aParameter estimates are unstandardized regression coefficients.

^bp-values are from Type III tests of model effects.

For the filling analyses, negative predictors of out-of-pocket payment included patient age, amount paid by the patient's plan, and frequency of overall dentist visits. As people get older, have better insurance, and seek dental care more frequently, their costs decrease. The dentists' base rates were also large predictors of patient cost; as dentists increase preference for composites, out-of-pocket expenses increase because composites cost more than amalgams. There was also an effect indicating that as relationship length with a particular dentist increases, so does out-of-pocket expense for fillings. Finally, a dentist base rate \times relationship length interaction suggests that the dentists' tooth-specific base rates for certain materials are influenced by relationship length in a way that increases patients' out-of-pocket costs.

For the crown analyses, negative predictors of out-of-pocket expense included the overall number of visits to the dentist for any reason and the amount the dental plan paid. Again, this may reflect that people who have more dental problems have better insurance (or that people with insurance seek more care), which reduces their out-of-pocket expenses at the point of service. As was the case with fillings, the dentists' overall preferences for crown materials influenced out-of-pocket expenses—as dentists shift toward porcelain, the out-of-pocket payment increases. Most important, we find the hypothesized effect of relationship, suggesting that as tenure increases, so does patient out-of-pocket cost.

As a measure of durability, we examined the repair rates among the subset of people in the claims who had fillings or crowns repaired. We identified repairs as entries in which a tooth had identical procedure codes more than (1) six months apart for fillings and (2) one year apart for crowns. These results appear in Table 2. For all analyses, we used the .05 cutoff level to determine statistical significance. We used multiple regression analyses (fit under the assumption of a binary distribution) to separately examine correlates of the two continuous outcome variables, repair rates for dental fillings and crowns. Because some patients had multiple observations, we again used a GEE approach (PROC GENMOD in SAS) with the patient unique identifier as a repeated measures (cluster) independent variable, with the assumption of an exchangeable correlation matrix and examination of Type III tests of model effects. We used the following approach with the filling repair rate and crown repair rate outcomes as separate dependent variables in a

series of GEE regressions: First, we conducted a regression analysis separately for each category of covariates (i.e., patient age, year) with all the variables in the category included as independent variables. Second, we included all the independent variables that were significantly associated with the outcome across the covariate categories in a final regression model (shown in Column 1 of Table 2). The variables age and year (measured over the 12-year claims period) were not significant predictors of repairs, were not correlated with any of the other variables, and thus were not included. The results are unchanged and robust to including age and year.

The data were consistent with the literature for fillings; that is, having a composite filling was a significant predictor of needing work repaired. Frequent dental work was also a predictor of repairs; the more often people visit the dentist for any reason, the more often they have fillings repaired. Finally, for fillings, the length of the relationship with a dentist is associated with an increase in the number of repairs. For dental crowns, none of these factors were associated with an increase in repairs. As such, it seems that the durability of crowns is not affected greatly by which material is used.

Discussion

The results of Study 1 are consistent with H₁: Tenure with a particular provider increases out-of-pocket expense for patients who receive routine procedures (e.g., fillings, crowns) in which there is a choice of materials and the different approaches vary in cost, aesthetics, and durability. We specifically focused on these procedures in teeth for which there are real trade-offs between aesthetics and durability, which are likely to be the cases that require dentists and patients to reach a consensus. Because these decisions are not clear-cut and have room for personal opinion, we predicted that the length of the doctor-patient relationship would influence outcomes. Indeed, this seems to be the case; patients have higher out-of-pocket expenses as the relationship increases. This effect persists even when we control for dentists' overall preferences for certain materials in certain posterior teeth and patients' own dental visit frequencies and insurance coverage over time. More generally, these results fit with the findings that as relationships with experts develop, advisees become more trusting of their advice (Snieszek and Van Swol 2001) in ways perhaps unrelated to accuracy.

Although these results seem clear in terms of their overall effect, one question we cannot answer with this type of archival data is whether dentists feel more comfortable recommending more expensive treatment as the relationship endures or whether patients develop an increased appetite for more expensive treatment over time. Another question we cannot yet answer is whether patients realize that they are paying higher premiums as a result of their loyalty. Study 2 examines the role of relationships in influencing the tendency to seek second opinions (as one way to improve accuracy) by testing whether patients recognize when an outside second opinion is warranted and how likely they are to seek this opinion as a function of the length of the relationship with the primary expert.

STUDY 2: DO CONSUMERS RECOGNIZE THE NEED FOR ADDITIONAL ADVICE?

Our central hypothesis, supported by evidence from Study 1, is that tenure with an expert provider may have some clinical disadvantages—the longer a person has been seeing a particular provider, the more likely he or she is to pay increased out-of-pocket costs and receive less durable treatment. Health care providers may have conflicts of interest that guide all patients toward accepting more expensive care, but we question whether longtime patients are particularly susceptible because they are focused on maintaining relationship harmony with their service providers. That is, people often go along with the advice of others, not because they agree with the advice, but because they want to be regarded favorably (Deutsch and Gerard 1955).

If consumers are worried about advice quality, they stand to benefit from getting a second opinion from an independent expert (Hastie and Kameda 2005). Although patients may be unlikely to shop around for relatively inexpensive procedures (e.g., fillings, crowns), other clinical situations warrant a second opinion, such as the decision to replace a damaged tooth with a bridge or a dental implant. Bridges and implants each have clinical advantages and disadvantages, similar long-term durability, and differential costs. Implants look more natural but cost considerably more (sometimes thousands of dollars) than bridges. The bulk of this difference is patient paid. Note that we could not examine decisions affecting bridges and implants in Study 1's claims because the insurance provider offers no benefit for implants, and thus no implant claims were documented.

In Study 2, we more directly tested the effects of a personal relationship on advice taking by manipulating two factors: role and tenure. First, we predicted that placing people in the more objective role of an adviser (vs. patient) would increase preference for second opinions. This is consistent with findings that an adviser's role alters decision outcomes by heightening feelings of responsibility for accurate decision outcomes (H_3) (Zikmund-Fisher et al. 2006). Second, we expected that people would be more likely to ask for a second opinion from a new (but equally qualified) dentist than a longtime dentist because a personal connection is unlikely to exist between people who are meeting for the first time (H_2). Because the dentist described is both advising and rendering service, a notable conflict of interest may also exist.

Method

A sample of 2000 web participants was recruited by Survey Sampling International (SSI), which provides panelists (compensated through rewards contract) to academic institutions. The participants were as follows: 90% were Caucasian, 60% were women, the median age was 52 years ($SD = 15$), 56% were married, and 42% reported having at least some college or more education. To control for perceived quality and continuity of care across experimental conditions, all participants were told that they had been going to the same dental practice for many years; half were told that the practice rotates equally competent dentists, and half were told that the patient always sees the same dentist. Participants were randomly assigned to a patient or an adviser role and to a longtime or a new dentist at a longtime practice. In each condition, the participants evaluated the following scenario:

Imagine that you have (a coworker has) been having tooth pain. You have (Your coworker has) been going to the same dental practice for many years and have (has) always seen the same (a different) dentist.

Your (coworker's) dentist says the tooth is damaged and must be replaced. There are two options for single-tooth replacement: implant or bridge. A dental implant is an artificial tooth permanently anchored into the jawbone. A bridge is an artificial tooth permanently anchored onto the teeth on either side of the damaged tooth. The dentist recommends the implant because, unlike the bridge, it doesn't affect the teeth surrounding the damaged tooth. However, because of differences in prices and insurance coverage, an implant will cost you (your coworker) more out-of-pocket. You (your coworker) could cover the extra cost of the implant, but it would be a bit of a stretch.

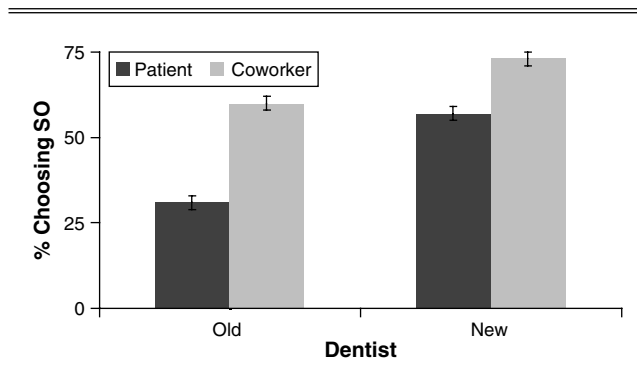
Participants indicated whether they would choose (recommend) the implant, the bridge, or a second opinion from a dentist at another office who would not perform the procedure. They also rated the extent to which different factors contributed to their decisions about second opinions. These factors included the expense of different procedures, the dentist's confidence in the recommendation, the safety and efficacy of the procedures, and how long the patient has known the dentist.

Results

Because our primary question probed preference for a second opinion, we analyzed the data using a 2×2 logistic regression with participant role (patient vs. adviser) and length of relationship (longtime vs. new) as the categorical independent variables and choice of a second opinion versus treatment as the dichotomous dependent variable.² We combined the choice of the bridge and implant into one variable called "treatment." The results (see Figure 1) show that the role of an adviser significantly increased the preference for seeking a second opinion ($\chi^2(1) = 95.93$,

²A 2×2 logistic regression with the trinary choice dependent variable revealed an identical pattern to that with the combined treatment dichotomous dependent variable. Contrasts showed that choosing an implant versus a bridge (conditional on treatment $n = 895$) did not vary with the independent variable manipulations.

Figure 1
STUDY 2: PERCENTAGE OF PARTICIPANTS CHOOSING OR
RECOMMENDING A SECOND OPINION (SO) BY
ROLE AND RELATIONSHIP WITH DENTIST



$p < .0001$) over treatment, suggesting that though participants know (as outside advisers) that second opinions are important, they are unlikely to seek them themselves. New patient-provider relationships were also more likely to result in second opinions than established relationships ($\chi^2(1) = 78.55, p < .0001$), again suggesting that clinical information seeking is evaluated within the context of a personal relationship. Relationship length was also significantly stronger for patients than for advisers (interaction $\chi^2(1) = 6.51, p = .01$). A longtime relationship with a provider led people, especially patients, not to get second opinions.

Next, we analyzed the participants' choice of procedure (bridge vs. implant) among the subset who chose/recommended treatment over having a second opinion ($n = 895$). Patients did not choose implants significantly more than advisers (62% vs. 67%; $\chi^2(1) = 2.85$, not significant). This finding suggests that advisers and patients do not differ much in their concerns about cost and cosmetics. Those who imagined a longtime dentist did not choose implants significantly more than those who imagined a new dentist (65% vs. 61%; $\chi^2(1) = 2.14$, not significant). Together, these results reveal that the difference between patients and advisers and new and longtime relationships is more apparent when thinking about second opinions than when thinking about treatment options.

Participants also rated their opinions about factors contributing to choosing or recommending a second opinion: the expense of the different procedures, the dentist's confidence in the treatment recommendation, the procedures' safety and efficacy, and how long the patient has known the dentist. We analyzed these dependent measures in a 2×2 analysis of variance with patient role and relationship length as the independent variables and an alpha level of .001 (the conservative alpha reflects the large sample size for scale data). The results show that patients were significantly more likely than advisers to consider tenure with the dentist and the dentist's confidence, suggesting that patients are more sensitive to relevant relationship cues. Patients and advisers did not significantly differ in their opinion of the procedure expense, safety, or efficacy. The longtime versus new dentist manipulation also had no impact on relationship length and concerns about the safety and efficacy of

the procedures. These findings help rule out the possibility that participants in the new dentist condition perceived differences in quality of care and that concern, rather than relationship cues, drives their increased preference for second opinions. We test the role of relationship cues more directly in Studies 3 and 4.

Finally, there is some concern that advisers' preference for second opinions reflects a desire to defer and avoid accountability. Although this might be the case, the desire to simply avoid responsibility would predict that advisers would be equally likely to recommend second opinions in the longtime and new dentist conditions. That was not the case; an analysis of the simple comparison of advisers' recommendations of second opinions in the longtime dentist condition (60%) was significantly lower than those in the new dentist condition (73%; $p < .001$). This finding suggests that advisers do consider the doctor-patient relationship when recommending second opinions, but not to the same extent as patients.

Discussion

The results of Study 2 support H_2 and H_3 : People are more favorable toward second opinions when they do not have a personal or longstanding relationship with a provider. We also find that people are more likely to ask for a second opinion from a new dentist than one they have been seeing for a long time; both patients and advisers were less likely to challenge a dentist with whom personal relationship rapport had presumably developed.

Overall, these results suggest that a personal connection with a particular provider reduces reliance on second opinions and increases acceptance of the (more expensive) recommended treatments. That is, the relationship pull is strong for the patients of longtime providers. Although there may be relevant cues that emerge from longtime relationships, we question whether patients are sensitive to irrelevant cues to the extent that it drives them toward compliance and away from second opinions. To test this, we next examined whether willingness to follow a longtime provider's advice would hold when the provider rejects a request for a personal favor that is unrelated to a professional recommendation.

STUDY 3: QUID PRO QUO

Studies 1 and 2 show that personal relationships can color reliance on advice and treatment decisions. In Study 3, we further test this explanation by explicitly pitting personal against professional norms. If participants are sensitive to the norms of reciprocity that naturally develop with relationships, they should demonstrate more compliance when a provider grants a favor than when a provider refuses one. In other words, if patients eschew second opinions because they can threaten a personal relationship, perhaps they will reconsider second opinions if they believe that the social nature of the personal relationship has been violated.

Method

One thousand web participants were recruited from SSI with similar demographic characteristics as those in Study 2 (e.g., 50% female, median age = 52 years). Participants evaluated the same new/longtime dentist scenario from

Study 2 with an added statement indicating that the patient requested to come 15 minutes late after the last scheduled appointment for the next cleaning because of work conflicts. Across three conditions, the dentist (1) accommodated the favor, (2) rejected the favor but buffered the rejection by saying that he or she would like to but could not, or (3) rejected the favor impersonally but professionally by explaining that allowing it for one patient would mean needing to allow similar favors for all patients.

Results

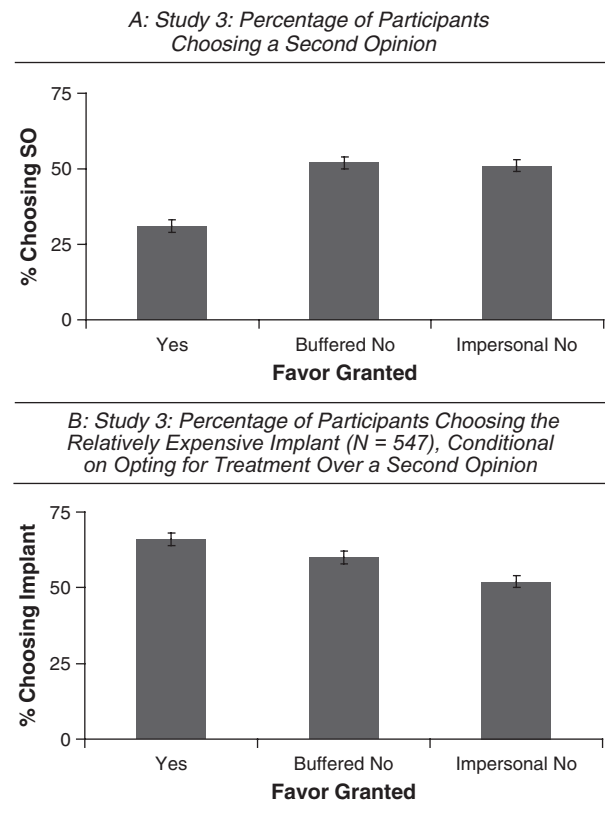
We analyzed the data using logistic regression with favor as the categorical independent variable and choice of a second opinion versus treatment as the dichotomous dependent variable. The results show that preference for a second opinion versus treatment (bridge and implant as one combined “treatment” variable) varied by whether the dentist accommodated the favor (see Figure 2, Panel A). Compared with when the favor was granted, participants in both rejection conditions were significantly more likely to seek a second opinion (for the buffered rejection condition: 51% vs. 31%; $\chi^2(1) = 25.64, p < .0001$; for the impersonal rejection condition: 52% vs. 31%; $\chi^2(1) = 29.20, p < .0001$). The percentage of participants choosing a second opinion did not vary across rejection conditions ($p > .20$). Participants seemingly viewed their relationship with the dentist as involving personal quid pro quo; seeking clinical information through a second opinion was substantially driven by the rejection of a personal favor.

A particularly striking finding in this study was participants’ choice of a bridge versus an implant, conditional on having opted for treatment ($n = 547$). Figure 2, Panel B, shows that nearly two-thirds (66%) of those whose favor was granted chose the more expensive implant compared with 50% in the impersonal rejection condition ($p < .05$) and 60% when the favor was rejected with buffering (which is neither significantly lower than the accept condition nor higher than the impersonal rejection condition). We note this difference when comparing this pattern of results with that of an identical analysis in Study 2 in which participants who opted for treatment did not show varied treatment preference based on their role (patient vs. adviser) or length of tenure with the dentist. The results reveal that personal relationship cues may partially influence the selection of medical treatments by way of reciprocity.

Discussion

A service provider’s willingness to accommodate a personal favor should not bear on whether a consumer seeks a second opinion to confirm advice accuracy. However, we show here that challenging a relationship increases the likelihood that people will get second opinions. The results of Study 3 are consistent with a relationship maintenance hypothesis (H_4): Participants were significantly more likely to ask for a second opinion when the dentist refused a personal favor than when the dentist accommodated the favor. Moreover, participants whose favor was rejected, but still opted for treatment, chose a less expensive treatment (the bridge), an effect that was especially evident when the rejection was professional but impersonal. This finding is striking because it suggests some kind of quid pro

Figure 2
PERCENTAGES OF SECOND OPINIONS AND TREATMENT CHOICES BY FAVOR GRANTING CONDITION



quo that financially rewards service providers at a possible detriment to patients who receive more expensive, but not better, treatment.

One question is why participants’ choices of second opinions were equally affected by the two rejection manipulations but the choice of expensive versus costly treatment was influenced more by the impersonal rejection than the buffered rejection. For the first point, people who have long-time service relationships may be unable to ascertain the provider’s motivations for rejecting and thus may believe that any rejection violates the relationship. That is, the line between personal and professional blurs as the relationship develops. For the second point, people may have some awareness of the premium they pay for long-term relationships and expect certain levels of service in return; when that service is not provided, consumers may retaliate by opting for less expensive treatment. This study did not manipulate the participant’s perspective (e.g., taking the adviser role). A patient/adviser manipulation may provide some insight into interpersonal rejection influencing advice taking and, in particular, whether breaches in the relationship make people feel personally offended, lower perceptions about the quality of the advice, or both. In Study 4, we examine these factors (favor granting and adviser/patient role).

STUDY 4: WHY DO RELATIONSHIP CUES INCREASE SECOND OPINIONS?

We have shown that advisers are more likely to ask for second opinions than patients, presumably because advisers do not feel the same relationship pull as patients. Thus, it is easier for advisers to imagine gathering additional advice. However, although third-party advisers may be less sensitive to relationships, they may also be less sensitive to important factors that patients consider, such as transaction costs and the fear that second opinions might reduce the quality of care provided by the primary expert. Therefore, this study's goal is to rule out these alternative explanations and to directly test the mediating role of relationship concerns.

In particular, the mechanism underlying the shift toward second opinions in Study 3 is unclear. It could be that when providers say no, patients are reminded that the relationship is simply a business transaction, which allows them to focus on accuracy. Alternatively, they may be personally offended by the rejection and view second opinions as a way to retaliate. We conducted Study 4 to capture evidence of the mechanism driving preference for second opinions.

Method

Participants ($N = 289$) from SSI participated in a web-based study (40% female, median age = 45 years) and evaluated the same longtime dentist scenario from Study 3. This study used a 2×2 between-subjects experimental design in which participants were randomly assigned to favor condition (the dentist either grants or rejects the favor with an impersonal explanation) and role condition (the participant is either the patient or the adviser).

Participants read the scenario and were asked to choose or recommend the best option (implant, bridge, or second opinion) and rate the likelihood of choosing each option on ascending scales (from 1 to 7). Three questions measured potential mediators, examining both whether advice taking is driven by relationship considerations that are more salient to patients than advisers and when favors are rejected rather than granted. The transaction cost questions measured considerations of money and time, in which participants rated the extent to which they agreed that second opinions were expensive and time consuming. A fear of retribution scale measured concerns about future treatment. Participants rated how much they believed that second opinions might result in a dentist who gets angry, has hurt feelings, and might provide lower-quality future care. The relationship scale questions measured trust and likability. Participants rated the extent to which the dentist was trustworthy, professional, likable, and friendly. Note that the first and second items in the relationship scale correspond to professional considerations and the third and fourth items correspond to personal considerations.

Results

We first examined participants' likelihood ratings of choosing or recommending a second opinion. A 2×2 (role \times favor) between-subjects analysis of variance revealed that patients rated themselves significantly less likely to get second opinions than advisers (for patients: $M = 3.8$; for advisers: $M = 5.03$; $F(3, 285) = 23.91$, $p < .001$). Furthermore, participants who were told the dentist rejected a favor

rated the likelihood of getting a second opinion as significantly higher than those who were told the dentist granted a favor (for reject: $M = 4.9$; for accept: $M = 4.0$; $F(3, 285) = 12.91$, $p < .01$). There was a directional role \times favor interaction, suggesting that patients experienced a more negative response to the rejected favor than advisers ($F(3, 285) = 2.36$, $p < .20$). An identical analysis (not shown) using binary logistic regression on discrete choices revealed the same pattern. Preference for the implant, conditions.

We confirmed that our scale variables measured separate constructs and subsequently averaged the components ratings into composite variables of transaction costs, fear of retribution, professional relationship concerns, and personal relationship concerns.³ To directly test whether these scale measures drove second opinion differences, we performed separate bootstrapping mediation analyses (Preacher and Hayes 2004) for each composite variable. Table 3 presents these results. Note that we separated the four-item relationship scale variable into two composite variables (Cronbach's $\alpha > .80$ for each)—one for professional concerns (a composite of trust and professional ratings) and one for personal concerns (a composite of friendly and likable ratings)—to determine the extent to which feelings about the dentist vary on professional and personal dimensions.

We first examined mediators of the effects of participant role on seeking second opinions. Column 2 of Table 3 shows that being a patient is a negative predictor of getting second opinions and a positive predictor of perceived transaction costs; it also shows that transaction costs are negative predictors of second opinions. When we control for the effects of transaction costs, the impact of patient role on seeking a second opinion significantly decreases but does not fully mediate. Column 3 shows that being a patient is a negative predictor of concerns about compromised care (i.e., advisers worry about this more) and that these concerns are a positive predictor of second opinions. When we control for the effects of these concerns, the overall impact of advisers' increased concern about future care significantly decreases the effects of patient role on the propensity to get a second opinion but does not fully mediate. Column 4 shows that being a patient is a positive predictor of believing that the dentist is trustworthy and professional and that these beliefs are negatively correlated with getting a second opinion. Controlling for these effects significantly decreases the effects of patient role on getting a second opinion—this is the strongest mediator, though it does not fully mediate the main effect. Finally, Column 5 shows that patients rate the dentist more likable, which in turn decreases the likelihood of getting a second opinion. Again, controlling for such likability significantly decreases the effect of patient role on second opinions but does not fully mediate.

³A promax rotated factor analysis revealed eigenvalues of 4.15, 2.82, and 2.03 for relationship considerations, fear of retribution, and transaction costs, respectively. For relationship considerations, the range of the four highest loading items was .79–.98 (the next highest was .29). For fear of retribution, the range of the highest loading items was .79–.92 (the next highest was .33). Finally, for transaction costs, the range of the highest loading items was .84–.85 (the next highest was .61). The strength of the relationship between the component ratings of the individual scale measures was also significant: transaction costs ($r(289) = .55$, $p < .001$), fear of retribution (Cronbach's $\alpha = .85$), and relationship (Cronbach's $\alpha = .88$).

Table 3

STUDY 4: RESULTS OF BOOTSTRAPPING TESTS OF MEDIATION EFFECTS FOR TRANSACTION COSTS, COMPROMISED CARE, PROFESSIONAL RELATIONSHIP CONCERNS, AND PERSONAL RELATIONSHIP CONCERNS ON THE RELATIONSHIPS BETWEEN PARTICIPANT ROLE AND PROVIDER FAVOR ON PROPENSITY TO SEEK A SECOND OPINION

Variable	Transaction Costs		Compromised Care		Trusting and Professional		Friendly and Likable	
	β^a (99% Confidence Interval)	SE	β^a (99% Confidence Interval)	SE	β^a (99% Confidence Interval)	SE	β^a (99% Confidence Interval)	SE
Participant role → second opinion	-1.21*/-.956* (-.55, -.027)	.256/.251	-1.21*/-1.14* (-.21, .038)	.256/.251	-1.21*/-.789** (-.78, -.12)	.256/.241	-1.21*/-.90* (-.60, -.079)	.256/.251
Participant role → mediator	.584*	.172	-.319***	.172	.502*	.124	.559*	.154
mediator → second opinion	-.436*	.084	.224***	.084	-.838*	.114	-.553*	.093
Favor → second opinion	-.84**/-.84* (-.25, -.27)	.261/.247	-.84**/-.77* (-.26, .02)	.261/.247	-.84**/-.47*** (-.74, -.08)	.261/.247	-.84**/-.10 (-1.16, -.39)	.261/.247
Favor → mediator	.011	.175	-.317***	.175	.419*	.125	1.22*	.139
Mediator → second opinion	-.499*	.083	.241***	.083	-.879*	.112	-.61*	.104

* $p < .001$.

** $p < .01$.

*** $p \leq .05$.

^aParameter estimates are unstandardized regression coefficients before/after controlling for the effects of the mediators.

We conducted an equivalent set of mediation analyses to better understand why rejecting a favor increases preference for second opinions. Column 2 of Table 3 shows that granting a favor is a negative predictor of second opinions but not a significant predictor of perceived transaction costs, indicating that the criterion for conducting mediation analyses failed. Column 3 shows that granting a favor is a negative predictor of concerns about compromised care (i.e., favor granting produces a halo effect in which people believe that dentists who grant favors actually provide better-quality care) but that concerns about quality are a positive predictor of second opinions. When we control for these concerns, the overall impact of rejectees' increased concern about future care significantly decreases the impact of granting a favor on their propensity to get a second opinion but does not fully mediate. Column 4 shows that favor granting is a positive predictor of believing that the dentist is trustworthy and professional and that these beliefs are negatively correlated with getting a second opinion. Controlling for these effects significantly decreases the effects of favor granting on getting a second opinion—this measure almost fully mediates ($p = .05$). Finally, Column 5 shows that dentists who grant favors are more personally likable, which again decreases the likelihood of getting a second opinion. Controlling for such personal likability fully mediates the relationship between granting favors and decreased reliance on second opinions.

Discussion

Study 4 provides further support for our hypotheses that relationship cues are paramount for the decision to get a second opinion (H_5). Importantly, the analyses highlight how complex these considerations are. Patients inherently show greater evidence of trust and professionalism than advisers, which to some extent explains why they are more reluctant to get second opinions. As such, advisers place greater emphasis on accuracy, which is consistent with previous research (e.g., Zikmund-Fisher et al. 2006). Patients

also believe that the dentist is more friendly and likable than advisers do, which significantly contributes to their reluctance to get second opinions. Among both groups, however, relevant considerations about the quality of advice (e.g., a professional's trustworthiness and professionalism) are difficult to disentangle from irrelevant considerations (e.g., friendliness, likability) in the context of an ongoing relationship. This was equally true for patients and advisers because we found no evidence that accepting or rejecting a personal favor (which is entirely independent of the clinical recommendation) had a greater impact on patients than advisers. This finding echoes that of Study 2 by showing that patients and advisers are closer in agreement on second opinions in the absence of an established relationship.

A provider's interpersonal behavior also complicates perceptions of the relationship and, in turn, whether to question the advice by getting a second opinion. The rejection of a favor negatively affected how patients and advisers felt about the provider both professionally and personally. Indeed, it was these negative personal feelings that best explain why preference for second opinions increases when a favor is not granted.

In summary, professional concern was the main factor driving differences between patients and advisers, and personal concern was the main factor driving differences between those who were rejected or granted a favor. Other variables, such as transactions costs and concerns about quality of care, were partially responsible for the differences among treatment groups in their attitudes toward second opinions, but not nearly to the extent of relationship concerns (H_5).

GENERAL DISCUSSION

Many important decisions regarding home ownership, financial planning, and health care are complex and require experts' valuable insights, and there are many advantages to having ongoing relationships with expert service providers.

However, we identify some of the pitfalls associated with such long-term relationships. Any expert is prone to errors and/or has conflicts of interest that consumers may become less concerned with as they become more concerned about preserving relationship harmony.

We demonstrated that relationships between experts and consumers increase costs by examining a set of dental claims data. We specifically examined the propensity toward getting more expensive, tooth-colored materials in repairs of nonvisible posterior teeth for which the consumer and provider must reach a consensus about which material to use. We found that as relationships between patient and provider grow, so do out-of-pocket costs.

When considering the implications of these findings, it is important to clarify the ambiguity of directionality. One interpretation is that dentists are up-selling more expensive treatments to their loyal patients. Another is that loyal patients are more interested in cosmetically superior materials at the expense of durability. It is difficult to know which interpretation is correct or whether there is some truth to both. Either way, the relationship between patient and provider affects clinical care and patients' bottom lines.

Our focus herein is on consumers and how they may or may not benefit from an ongoing relationship with expert providers. We were unable to determine from the archival data whether consumers are aware of the premiums they pay for long-term relationships, so we conducted a series of experimental studies that investigated whether people would be willing to get a second opinion. Second opinions were an important dependent measure because their purpose is to increase accuracy, but getting one clearly challenges a relationship. In health care, second opinions are an important, if not the only, check and balance in the marketplace to protect consumers against random error and conflicts of interest. Another professional's advice can help confirm a diagnosis, illuminate alternative treatments, and identify a range of costs. Despite the advantages of second opinions, however, they are rarely sought (Zeliadt et al. 2006).

Our central hypothesis was that people would be more likely to recognize situations that called for a second opinion from an adviser perspective than from that of a patient because patients would be more concerned about damaging a valued relationship. This appeared to be true; advisers were more favorable toward second opinions than patients, particularly in the context of a new relationship. This suggests that to some extent, advisers incorporate the relationship pull in their decisions to recommend second opinions—but not to the same degree or for the same reasons as patients do. Subsequent mediation analyses indicated that advisers were more concerned with dentists on professional dimensions and patients were more concerned with dentists on personal dimensions. It was these relationship concerns, not concerns with transaction costs or the quality of future care, that provided the best explanation for why patients and advisers feel so differently about second opinions.

In addition to varying perspectives of the decision maker, we also manipulated a provider's response to a request for a personal favor. By portraying an incident in which an expert denies a request for a personal favor, we were able to explore how interpersonal cues affect the interpretation of advice. Specifically, in two studies, we showed

that when a longtime dentist rejects a personal favor, people are more likely to gravitate toward second opinions. This is an intriguing finding because it hints at the extent to which personal rapport affects perceptions of professionalism and trust. When a dentist rejects a favor request, participants' ratings of trust and professionalism significantly decreased, which in turn made second opinions more appealing. Rejecting a favor also led people to choose less expensive options. Professionalism is arguably an important cue about the quality of advice. However, a provider's accommodating behavior or friendliness, which may not be an important cue, contributes to perceptions of professionalism, and this highlights the difficulty of disentangling relevant and irrelevant cues about advice in the context of ongoing relationships.

A quandary in any service domain in which consumers must rely on repeated expert advice is how to preserve the benefits of relationships without compromising decision-making quality. Physicians, for example, might argue that the clinical benefits of relationships (Emmanuel and Dubler 1995) far outweigh the costs. However, our results show that some consumers may be paying a premium for less optimal advice from long-term providers and might benefit from stepping outside the relationships to get a second opinion—a notion with which some physicians might agree, as relationships with patients can also cloud physicians' judgments (Groopman 2007). At the same time, relationships with expert advisers that depend on trust and commitment for development and success may lead people to protect the relationship even at the expense of decision accuracy. Given the stakes, these findings have important implications for almost any situation in which a (nonexpert) consumer must rely on an expert's advice.

Second opinions are a valuable tool in the medical marketplace and may help control costs and improve outcomes in a variety of ways. Although the current health care environment is not particularly conducive to second opinions, this may be changing. For example, Partners Online Specialty Consultations now offers consumers and their doctors competitively priced second opinions. Radiology, pathology, and other test specimens can be sent to independent and highly qualified physicians for review without the patient needing to travel or to ask their doctor for a referral—which can be awkward and may not result in an independent second opinion. These second opinions cost \$200–\$300 but could be well worth it to patients who are facing medical care that has significant health and financial consequences. Moreover, with enough utilization and digitization of medical records, the market for online second opinions may increase enough to significantly lower costs.

From a health policy perspective, there may be an advantage to making second opinions a matter of default. Such a policy might ensure that patient-provider relationships develop in the context of understanding that no test and no doctor is perfect. Moreover, the benefits of the patient-provider relationship would not be threatened by this type of quality control because second opinions would be requested by the insurance provider rather than the patient. Because patients are ultimately responsible for the outcomes of these decisions and must live with their physical and financial consequences, improving the market for second opinions is worth considering.

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