An offer you *can* refuse: The effect of transparency with endogenous conflict of interest☆

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ABSTRACT

We study the effects of transparency on information transmission and decision making theoretically and experimentally. We develop a model in which a decision maker seeks advice from a better-informed adviser whose advice might be swayed by financial incentives. Transparency enables the decision maker to learn whether or not the adviser accepted such an incentive, for example from an "interested" third party. Prior theoretical and experimental research mostly found that transparency is ineffective or harmful to decision makers. Our model predicts that transparency is never harmful and, depending on equilibrium selection, may improve the accuracy of decision makers. In our experiment transparency does indeed improve accuracy, especially if it is mandatory.

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1. Introduction

In 2013, the Occupational Safety and Health Administration (OSHA) in the U.S. began a public consultation on setting new limits for working with silica dust, a major health hazard for construction workers that causes serious lung disease. The OSHA created considerable controversy in the Senate when it requested for the first time that those submitting scientific evidence disclose their funding sources. A number of senators protested against the request arguing that revealing this type of information would bias the judgment of the agency. In turn, the head of the OSHA defended the request vigorously, claiming that transparency is indispensable for the information on which the agency bases its decision to meet the highest standard of integrity.[1] How transparency regarding funding sources and financial relationships affects advice and whether it improves the accuracy of decision making in settings such as this, where the expert might be influenced by a third party, is the topic of this paper.

Advice is prevalent in a variety of settings, ranging from regulatory agencies, legislatures, and judiciaries to medical services and financial markets. In such settings, decision makers often face complex decisions with uncertain outcomes, and therefore seek the advice of an expert in order to increase the likelihood of a successful decision. However, information transmission from the expert to the decision maker may be compromised; for example, even if the expert and the decision maker do not have an inherent conflict of interest, a third party, such as a special interest group or an industry, may sway the expert's advice in its favor by offering him a financial reward. Such concern regarding the impartiality of experts funded by third parties was raised in a recent study by the New York Times. The study identified dozens of examples of think tank researchers who helped shape the U.S. government policies in diverse areas such as net-neutrality, military spending, and airport security while being paid by corporations who had stakes in those policies.[2]

On the one hand, transparency is assumed to remedy this kind of situation: it protects the decision maker by revealing whether the expert has a financial incentive that might lead him to give biased

[1] This was published in Nature on March 4, 2014. In the same issue, an editorial piece argued that regulatory agencies must demand conflict of interest statements for the research that they use.

[2] http://www.nytimes.com/2016/08/09/us/politics/think-tank-scholars-corporate-consultants.html.

advice. On the other hand, one counter-argument against transparency is that disclosing this type of information results in a bias itself: even if the expert's advice is truthful, the decision maker may dismiss the advice if the expert has a financial tie to an industry or a special interest group.[3] According to the proponents of this idea, the bias against experts funded by interested third parties is harmful, so "the conflict of interest mania" must be cured.[4] An intimately related debate is whether transparency should be *voluntary* or *mandatory*. For example, organizations such as Transparency International advocate mandatory registering of lobbying activity. Most politicians and lobbyists agree that this should be the case, but in countries where registers exist they often remain voluntary.[5,6]

Although it is a widely-held belief that transparency should ameliorate problems related to conflicts of interest, as suggested above it is not immediately clear how it should do so. Moreover, prior theoretical and experimental research has mostly produced bleak results regarding the effects of transparency on decision making. We provide a formal model which illustrates a precise mechanism through which transparency can lead to better decision making. While transparency is never harmful in our model, it does not guarantee strictly better outcomes due to the existence of multiple equilibria. Therefore, we run an experiment to establish whether or not transparency can improve information transmission in practice.

In the model, there are two states of the world (labeled L and R) and two possible policies (labeled l and r). The adviser is an expert who is perfectly informed about the state of the world, whereas the decision maker knows only the prior probability of each state. The adviser recommends a policy to the decision maker, who then makes a policy choice. The payoff of the decision maker is maximized if the chosen policy matches the state of the world. All else being equal, the adviser and the decision maker have no conflict of interest. However, prior to the policy recommendation stage—but after learning the true state—the adviser decides whether or not to accept a side payment: if the adviser accepts the side payment, then he is obliged to recommend policy r.

We consider the following scenarios. In the *mandatory-transparency* condition, the decision maker is informed whether or not the adviser accepted the side payment. In the *non-transparency* condition, the decision of the adviser regarding the payment is not disclosed. We also study a *voluntary-transparency* condition in which transparency is not enforced, and the adviser chooses whether or not to disclose his decision regarding the side payment.

To highlight the basic mechanism through which transparency may improve decision making, we focus on a simple model with stark assumptions, but the mechanism is robust to rich extensions in which these assumptions are relaxed. In particular, it is robust to assuming that the adviser is ex-ante imperfectly informed and obtains higher quality information if he accepts the side payment, and that the adviser is free to choose his recommendation with positive probability even if he accepts the payment.[7]

Our main theoretical result is that transparency (whether it be mandatory or voluntary) never harms decision making and can strictly improve it depending on equilibrium selection — thus, our predictions are not sharp due to equilibrium multiplicity. In order to evaluate whether transparency is indeed beneficial in practice and gain further insights regarding its effect on information transmission and decision making, we designed and ran an experiment on the basis of our model, implementing the three conditions discussed above.

Equilibrium predictions specific to the parameter values that we chose for our experiment are as follows. In the non-transparency condition, the adviser always accepts the side payment and recommends r. As a result, the adviser's recommendation is uninformative. We denote this equilibrium the "corrupt equilibrium." In both transparency conditions, there are two equilibria of interest. The first one is the corrupt equilibrium, in which behavior is the same as in the equilibrium of the non-transparency condition. The second one is what we denote as the "honest equilibrium"; in this equilibrium, the adviser always rejects the payment and gives honest advice, which the decision maker always follows. Sustaining the honest equilibrium requires the type of bias which opponents of transparency argue will be the result of disclosure: if the adviser accepts the side payment, this prompts the decision maker to believe that the adviser is dishonest and choose policy l. This bias is consistent with the "zero tolerance" approach recently adopted by several journals and organizations, which we discuss in more detail in Section 4.1.

Overall, our experiment shows that mandatory transparency clearly improves decision making relative to non-transparency condition. However, the evidence regarding the positive effect of voluntary transparency on decision making is weaker. We find that mandatory transparency improves the accuracy of decisions made in state L, the state in which the adviser has a financial incentive to give a "dishonest" recommendation. While mandatory transparency improves the accuracy of decisions in state L, it has no impact on accuracy in state R. Thus, we conclude that mandatory transparency improves decision making.

The mechanism through which the mandatory-transparency condition improves decision making is consistent with our theory. Many decision makers and advisers view rejecting the side payment as a way to boost the adviser's credibility. When the state is R, many more advisers reject the payment and recommend r in the mandatory-transparency treatment than in the non-transparency treatment. When the state is L, many advisers reject the payment and recommend the correct policy even in the non-transparency treatment—this can be explained by lying-aversion—however, even more advisers do so with mandatory transparency. Thus, advisers' willingness to reject the payment in the mandatory-transparency treatment stems not only from lying-aversion but also from a strategic motive: refusing the side payment is potentially beneficial because if an adviser recommends policy r accepting the side payment, a sizable proportion of decision makers find it suspicious and choose policy l. One caveat is that although the fraction of decision makers mistrusting advisers who accept the payment is nonnegligible, it is also far from a majority. As a result, positive effects of transparency weaken over time: many advisers learn that the negative bias among decision makers against advisers who accept the side payment is not too prevalent and adjust their behavior accordingly.

Our study sheds light on the effects of transparency on adviser and decision maker behavior in an environment where the adviser might be influenced by financial incentives and third party funding. In particular, ours is the first study to combine theory and experiments to show that transparency can help decision makers in such an environment. Transparency is becoming more and more important especially because the share of private enterprise in the funding of research has been rising steeply. According to the National Science Foundation (NSF) in the U.S., the share of industry and government roughly tracked each other until the late 80s. However, industry has since considerably outpaced government in terms of research

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[3] See, for example, Stossel (2005), Weber (2009), and Stossel and Stell (2011).

[4] Rago, Joseph. "A Cure for 'Conflict of Interest' Mania." Wall Street Journal, 26 June 2015.

[5] http://www.transparencyinternational.eu/wp-content/uploads/2015/04/Lobbying_web.pdf.

[6] http://www.oecd.org/gov/ethics/Lobbying-Brochure.pdf.

[7] However, we note that mounting evidence suggests that third parties who fund scientists and academic researchers expect the conclusions of their research to be consistent with their interests giving rise to what is known as the "funding bias" in the scientific literature. See Footnote 9 and Section 4.2 for a discussion of highly publicized, large-impact examples.