Heterogeneous households: A within-subject test of asymmetric information between spouses in Kenya ☆

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ABSTRACT

To identify which spouses respond to asymmetric information, I play two dictator games with each member of the couple. One decision is kept secret from the respondent's spouse, while another choice is public. Most people give the same amount in public and secret, while a minority behave opportunistically and give more to their spouse in public and less in secret. The types identified in the lab also behave differently at home. For those who behave opportunistically in the lab, greater knowledge about finances at home is associated with worse opportunism in the lab, suggesting that for these couples complete information at home is not due to trust but rather is an endogenous response to non-cooperative behavior. The paper highlights that allowing for heterogeneous types changes the conclusions we draw about appropriate models of the household and suggests that laboratory games can be used to identify household types useful in the interpretation of field data.

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1. Introduction

Asymmetric information between spouses has been suggested as a possible cause of inefficiency in household decisions. Recent field and laboratory studies find evidence that spouses take advantage of private information (Ashraf, 2009; Iversen et al., 2011; Mani, 2011; Munro et al., 2013; Kebede et al., 2014) and thus conclude that asymmetric information must be one of the driving causes of inefficiency in the household. However, these previous empirical studies test only for average treatment effects, and by design cannot tell us if all spouses behave a bit opportunistically or if most people do not respond to private information and only a few take severe advantage. Allowing for heterogeneous types could lead to different

conclusions about the appropriate model of the household: is asymmetric information the primary cause of inefficiency in most households or is another explanation necessary?

I use a series of dictator games played between spouses in Kenya to measure the fraction of spouses that respond to asymmetric information, identifying who reacts opportunistically and who does not. One allocation is made in public: the respondent knows that his choice could be revealed to his spouse. Another allocation is made in secret. Choices in the secret spouse game were hidden by the fact that respondents played additional games with strangers that paid off anonymously, thus the respondent and his spouse did not know if his final payment was determined by a secret spouse game or an anonymous game. The design is within-subject, meaning that all respondents play both the public and secret game, allowing a characterization of not only the average difference in giving across the information condition but also categorization at the individual level.

I find that distinguishing between heterogeneous types in responses to asymmetric information is important in both the lab and field data. In the lab, respondents give an average of 8 percentage points more in the public game than in the secret game, an increase of 18 percent over baseline giving in the secret game that is statistically different from zero. The average difference suggests that spouses do respond opportunistically to asymmetric information. However, when I take advantage of the within-subject design and examine responses at the individual level, I find that most people do not take advantage of asymmetric information. Respondents give the same amount in public and secret in 49 percent of games. Only 36 percent behave opportunistically, giving more in public and less in secret. Because those who respond opportunistically give so much more in the public game than in secret, the average difference between games is large and statistically significant. Interestingly, I also find that 14 percent give more in the secret game, when their generosity cannot be observed. While, this unexpected behavior may be indicate mistakes in allocations, it could instead be a meaningful behavior that would be missed in a between-subject design.[1]

To confirm that the types identified in the games are meaningful outside the lab, I examine survey measures of spousal knowledge of income and expenditures at home, and find that better information at home indicates different things for different respondents. For those who do not respond to asymmetric information in the lab, I find that better information at home is positively but insignificantly associated with greater generosity in the lab, indicating that for these respondents communication is positively correlated with cooperation. For those who take advantage of private information in the lab, better information at home is associated with greater opportunism in the lab, indicating that instead of voluntary communication, more complete information at home is likely indicative of closer monitoring by a suspicious spouse. The results from the field data confirm that the types identified in the lab are meaningfully different, and highlights that cross-section survey data about information between spouses should be interpreted carefully. While for some couples high levels of information may reveal cooperation, for others better information indicates an endogenous response to non-cooperative behavior.

This paper makes two primary contributions: a substantive contribution to the household literature, and a methodological contribution to the intersection of the field and laboratory experimental literatures. First, I show that there are at least two types of spouses: those who react opportunistically to the availability of asymmetric information and those who do not. While others have suggested the existence of these two types theoretically (Chen, 2013) and others can infer the fraction of a sample that falls into either category (Ashraf, 2009), this study is the first to document the existence of these different types of spouses directly. I further show that identifying these types changes the interpretation of survey measures of information between spouses. This suggests that household models should allow for heterogeneous information types and strategic endogenous responses between spouses, and include non-information causes of inefficiency for those who do not react to asymmetric information.

Second, the paper's main contribution is that it shows laboratory games can be used to identify meaningfully different types of households in their responses to asymmetric information, and thus suggests that field experimentalists could use games to identify sub-groups that may respond differently to new programs. For example, suppose one were charged with evaluating the effect of a new technology that made financial resources held in formal institutions more or less observable to the account holder's spouse. Examples could include joint bank statements available to both spouses (Schaner, 2014) or mobile money accounts that are more easily concealed (Aker et al., 2014). The primary outcome measured is the amount of money held in the financial institution, while the true outcomes of interest are empowerment in household decision-making and the cost-effectiveness of the technology relative to other possible interventions. Understanding that the same average treatment effect on money held in the financial institution could be generated by most clients responding a little or only a few clients responding a lot, and that the conclusions drawn about empowerment in household decision-making or the cost-effectiveness of the program depend heavily on how many clients change their behavior and by how much, one would really like to identify the clients for whom asymmetric information matters and how the program affects only them. Field experimentalists often examine treatment effects by sub-group for just this reason, looking for differences by gender, own share of household income, or reports of financial decision-making power. This study shows that within-subject dictator games can identify meaningfully different types of people in how asymmetric information affects their household. In the future, field experiments studying the effect of policies that affect information between spouses could consider using laboratory games to identify those for whom we think information matters most.

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[1] The possibility of mistakes in allocation is discussed in Section 4.2.2.