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*Reflection*

### **Lab experiments in demographic fieldwork: Understanding gender dynamics in Africa**

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## **Lab experiments in demographic fieldwork: Understanding gender dynamics in Africa**

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### **Abstract**

#### **BACKGROUND**

Anthropological literature has long linked bridewealth payments to decision-making about fertility. Recent research underscores the significance of men's preferences regarding women's reproductive behavior, and suggests that bridewealth payments place constraints on women's reproductive autonomy. Yet because survey data on bridewealth are rare, and the collection of new survey data on bridewealth presents serious challenges, this explanation could not be tested.

#### **OBJECTIVE**

Our objective in this paper is to highlight the potential utility of lab experiments (in particular, vignette experiments) for improving our understanding of gender relations in Africa, using the hypothesized effect of bridewealth on normative constraints on women's reproductive autonomy as an illustration.

#### **METHODS**

We discuss our reasons for turning to lab experiments, and to vignette experiments in particular. We also summarize a series of studies (Horne, Dodoo, and Dodoo 2013; Dodoo, Horne, and Biney 2014) which have implemented our experimental approach.

#### **RESULTS**

Our experimental evidence shows that bridewealth payments are associated with greater normative constraints on women's reproductive autonomy. We also find that these negative effects of bridewealth are consistent across participant ages, and do not appear to be ameliorated by female schooling.

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## **CONCLUSIONS**

We conclude that lab experiments in general (and vignette experiments in particular) are underutilized methodological tools that may be useful for helping us gain a better understanding of the cultural context of gender relations in Africa; and that demographic research more generally may benefit from taking advantage of the strengths of experimental methods.

## **1. Introduction**

In Africa, bridewealth is a central component of marriage. Although it has no precise analogue outside of Africa, in certain respects the bridewealth transaction may be seen as comparable to the western marriage contract. When an African man and woman marry, their families negotiate a bridewealth payment that may include such valuable goods as livestock, clothing, fabric, beads, household goods, imported products, drinks, and money (Aborampah 1999). The man's family then pays the negotiated amount to the woman's family, in a single payment or in installments over time. The bridewealth transaction differs from the western marriage contract in that the woman and man may begin living together as "married" before the transaction is complete; that is, before the bridewealth has been fully paid. But it is only upon completion of the transaction that the rights associated with marriage have force.

Decades of anthropological research (see, for example, Evans-Pritchard 1934; Radcliffe-Brown and Forde 1950), as well as contemporary ethnographic work, have described the characteristics of the practice, and have suggested that it is widespread. Yet there is little causal evidence of its effects. In particular, there is little evidence on the consequences of these transactions for women in contemporary Africa.

That the availability of data has constrained the empirical verification of some demographic hypotheses is hardly surprising. Yet the extent to which the creative use of research methodology could mitigate such dilemmas is under-appreciated. This paper presents an example of how a method which is widely used in other fields can be called upon to resolve a long-standing problem: i.e., how to empirically assess the implications of bridewealth for women's reproductive and sexual autonomy.

## **2. The data conundrum**

The anthropological literature has consistently linked bridewealth payments to fertility-related decision-making (Caldwell and Caldwell 1987,1990; Comaroff 1960; Evans-

Pritchard 1934; Fortes 1962, 1978; Goody 1976; Goody and Tambiah 1973; Radcliffe-Brown and Forde 1950). A decade and a half ago, in one of the earliest empirical assessments of the relative influence of wives' and husbands' reproductive preferences on women's contraceptive use, Dodoo (1998) underscored the significance of men's preferences regarding women's reproductive behavior, and alluded in his conclusion to a "female right usurped by men...(clarifying that) the reproductive decision is, by cultural right, a man's decision" (p. 239). A decade later, Dodoo and Frost (2008) explicitly linked this cultural loss of reproductive power by women to bridewealth payments.

But because empirical data on bridewealth are extremely rare, this *ex post facto* explanation could not be tested. We are aware of only one survey dataset—the Negotiating Reproductive Outcomes (NRO) survey in Uganda—which includes questions on bridewealth; but even in this case only a couple of rudimentary questions are posed. And although the theoretical connection between bridewealth and reproductive control highlights the potential relevance of patrilineal versus matrilineal contexts (in patrilineal groups the bridewealth payment compensates a woman's family of origin (i.e., her natal kin) for the loss of her offspring to the man's kin group), the NRO survey does not delineate respondents' lineage type. Thus, over the decades, empirical tests of the effects of bridewealth payments have been effectively precluded by the paucity of relevant survey data.

Moreover, collecting original appropriate survey data is difficult. Ideally, data would be collected from a sample of respondents stratified according to bridewealth status, as this would ensure that a full range of bridewealth statuses are included in the sample. But because the *a priori* identification of individuals' bridewealth status is not possible, a stratified sample is not feasible.

In addition, because scholars do not even know what the distribution of bridewealth statuses is likely to be in the population prior to sampling, employing randomized sampling survey approaches may not yield a sufficient number of respondents in one or more of the bridewealth categories. The intellectually interesting and contrasting extremes of "fully paid bridewealth" and "no payment" might well be swamped by the "partial payment" category, which represents the middle phase in which men have not yet reaped the full rewards associated with the bridewealth payment; i.e., control over the woman's childbearing. Compounding the problem, the researcher might not even know if bridewealth categories were absent in the sample.

A very large sample would be needed to avoid this problem, but a survey of this size would be very costly. To date, researchers have been unable to persuade the designers of large surveys with national samples to include questions about bridewealth. Ironically, this is partly because there is no *a priori* empirical evidence of the importance of this issue.

Further compounding the difficulties is that bridewealth payment appears to be correlated with other factors, like wealth (see Moffitt 2005 for a discussion of challenges in drawing causal inferences). For example, it may be far more common for respondents in poor areas to report having made no or only a partial payment than for respondents in middle-class areas to do so. If it is possible that bridewealth payments are affected by other factors, but we are unable (absent evidence) to identify and control for such factors, our assessments of causal effects would be weak.

This lack of data on bridewealth is problematic. Ethnographic research has highlighted the importance of bridewealth (see, e.g. Caldwell and Caldwell 1990; Comaroff 1960; Evans-Pritchard 1934; Fortes 1962, 1978; Goody 1976; Goody and Tambiah 1973; Radcliffe-Brown and Forde 1950). But because we have no large-scale quantitative evidence of its prevalence or effects, measures of bridewealth are not included in national surveys. And because such measures are not included, we have no data with which to study the practice.

### **3. Experimental methodology and population-based survey experiments**

After efforts to develop a survey and a sampling design that would allow us to test the effects of bridewealth proved fruitless, we decided to turn to experimental methods. Lab experiments have been used extensively to study gender dynamics in the West (e.g. Ridgeway 1997), and the strengths of lab experiments for testing causal theories are well known (e.g. Singleton and Straits 2010). In recent years, scholars have advocated using population-based survey experiments for testing causal theories with representative samples (Mutz 2011). The range of experimental research on gender suggests that experiments may be useful for examining gender dynamics in the African context.

Experiments are studies in which the researcher manipulates the conditions and randomly assigns subjects to those conditions. In field experiments, researchers manipulate real-world conditions, assign participants to a condition, and observe the resulting outcomes. For example, they might manipulate incentive structures (such as payments to teachers or farmers) and then observe which incentive structures produce the best outcomes. Organizations like the Jamal-Latif Poverty Action Lab (JPAL) are strong advocates of field experiments, and have conducted a number of randomized evaluations across the continent. They, along with other advocates of field experiments, have argued that randomized interventions provide the best evidence of program effectiveness, as the results clearly show the effects of a particular intervention, as well as its relative costs and benefits (Glennester and Takavarasha 2013). Of course,

depending on the question under investigation, it may be difficult to randomly assign participants to conditions of interest.

Lab experiments are studies in which researchers create an artificial setting, manipulate conditions within that setting, and then observe the outcomes. For example, they might use a vignette to manipulate factors such as the gender or age of the characters in the vignette, and then ask participants questions about their reactions to or evaluations of those characters (for examples of this approach, see Pedulla 2014; Mutz 2011: 54–67). Alternatively, researchers might bring a group of participants together and have them interact with each other under artificial, manipulated conditions. Scholars are increasingly conducting lab experiments not just in western universities, but in the field and around the world (see, e.g., Baldassarri and Grossman 2011 for an example of a “lab experiment in the field”). For example, anthropologists and economists have collaborated to study whether and to what extent people across cultures play standard economic games in the same ways (see, for example, Henrich et al. 2005). Scholars (including psychologists and sociologists) are comparing the results of lab experiments across countries in order to increase our understanding of cultural differences (and human universals) (see, for example, Norenzayan and Heine 2005). Most recently, an experimental economics laboratory has been established in Nairobi, Kenya to facilitate the use of laboratory experiments in that region (Busara Center for Behavioral Economics).

Scholars are also increasingly using population-based survey experiments that allow them to take advantage of experimental methods, while also producing results that are generalizable to the larger population (Mutz 2011). Population-based experiments use experimental designs, but also (unlike typical lab experiments) emphasize sampling and generalizability. For a number of years, the National Science Foundation has funded TESS (Time-Sharing Experiments in the Social Sciences), which facilitates the collection of experimental data with a national random sample of participants.

For testing the effects of bridewealth, experimental methods, and especially vignette experiments, offered us several advantages. First, rather than attempting to obtain a sample of women representing different bridewealth statuses, we could manipulate information about a woman’s bridewealth status, and measure reactions to that woman. This approach enabled us to observe the effects of all of the bridewealth statuses that were experimentally manipulated, without having to rely on the vagaries of sampling. Thus, we could avoid the sampling challenges that hindered earlier efforts.

Second, because we could manipulate bridewealth status and randomly assign experiment participants to observe individuals with different statuses, we could be sure that the differences in the reactions across bridewealth statuses were related to bridewealth, and not to some characteristic of the respondent, such as wealth. Thus,

using experiments allowed us to control for possible confounding factors through design (rather than statistics). Finally, since the participants were representative of their communities, the data could provide us with insights into community norms (in addition to individual responses).

Recognizing that experiments offered an untapped tool for assessing the effects of bridewealth, we developed a vignette experiment to test the effects of bridewealth payment on a woman's reproductive autonomy (Horne, Dodoo, and Dodoo 2013). Below we describe the theory tested in that paper, as well as our experimental approach.

#### **4. Using experimental methods to study bridewealth and female reproductive autonomy**

According to classic anthropological accounts, bridewealth payments compensate the bride's family for the loss of her labor, including her domestic labor, and, at least in patrilineal communities, her reproductive labor. Marriage joins two kin communities (Bleek 1987; Caldwell and Caldwell 1987; Fortes 1978; Isiugo-Abanihe 1994; Kayongo-Male and Onyango 1984) for the purposes of producing children (Philips 1953). Accordingly, when men pay bridewealth, they also gain rights to the children, as the children produced in the marriage become part of the man's lineage. Thus bridewealth compensates the woman's family for the loss of her reproductive and domestic labor (Dodoo and Frost 2008). By compensating the woman's family, the man gains the rights to the woman's reproductive services. These rights are socially enforced. When a man has paid the full bridewealth, he gains control over the woman's reproduction; if she attempts to take autonomous action, she will be subject to social disapproval. Meanwhile, the woman expects to face disapproval, but only in the reproductive and domestic domains. Accordingly, we expected to find that bridewealth payments would increase normative constraints over a woman's reproduction.

We conducted a vignette experiment to assess the effects of bridewealth payments on norms regulating women. The vignette manipulated the completeness of bridewealth payment with three conditions: no payment, partial payment, and complete payment. There were 46 subjects per condition. Participants were randomly assigned to one of the experimental conditions.

The participants in the experiment were women aged 18 and over who were living in rural, patrilineal communities in the Volta region of Ghana which were within 30 minutes of the district capital Adidome. We identified the center of each village, and randomly (by spinning a bottle) chose the compass directions along which our field workers would travel, selecting every other dwelling. After all of the data collection in a

community was completed, participants were offered a small gift worth about six Ghana cedis for their participation (then worth approximately \$4.00 U.S.).

Each participant was interviewed by a female field worker who spoke Ewe, the local language. The field workers had paper copies (in English) of the vignette and the questions to be asked. During training, the field workers and the authors reviewed the vignettes and the accompanying questions. Because Ewe is primarily spoken rather than written, we did not translate the English materials into Ewe. Instead, the field workers, the graduate student research assistants, and the authors worked collectively until a consensus was reached regarding the most accurate translation. The field workers then practiced describing the vignettes and asking the questions in Ewe. Before conducting the experiment, we pre-tested the vignette and the measures. We then went into the field to run the experiment. The field workers conducted the interviews in Ewe and recorded the participant responses on the questionnaires.

The vignette described a man who worked in a government office and a woman who owned a shop in the market. They had been together for three years and had no children. We manipulated the *completeness of the bridewealth payment* by saying that the man had done one of the following: paid no bridewealth, paid only a portion of the negotiated bridewealth, or paid all of the bridewealth. We also told the participants that the woman had been using contraception without telling the man.

In order to obtain data on both social norms and individual attitudes, the field workers asked the participants how others would react to the woman's behavior, and how they themselves would react. Norms are rules that are socially enforced; if a norm is operating, people will expect those who violate the norm to be subject to social disapproval. The field workers therefore asked participants to assess how positively or negatively other people would react to the behavior of the woman in the vignette. Specifically, they asked subjects about the likely reactions of the man's family, other men in the community, the woman's family, and other women in the community. The responses to these questions may be seen as indicators of the subjects' perceptions of the evaluations of others, and thus tap into the norms in the community. We also asked the subjects about how right or wrong they themselves believed the woman's behavior to be. This question generated data on individual attitudes.

The subjects responded by looking at a picture of a ladder with 10 rungs and placing the woman or the man from the vignette on the ladder in accordance with their perception of how severe social disapproval would be. The top of the ladder (10) represented "very right" and the bottom of the ladder (1) represented "very wrong."

## **5. Effects of the experimental conditions**

Consistent with our prediction, we found that our experiment participants expected the disapproval of the woman's behavior would be greatest in the scenario in which the full bridewealth had been paid. The participants expected others (the man's family, the woman's family, and other women in the community) to be more disapproving, and were also more disapproving themselves, than in the other scenarios. These results show that the payment of bridewealth strengthens negative attitudes and norms constraining women's reproductive autonomy, as the expectations of negative social reactions were stronger when the bridewealth had been paid than when it had not been paid.

Our experiment provides strong evidence that people will disapprove of a woman's deviant behavior more strongly if a man has paid bridewealth than if he has not, and that they expect a woman who is asserting her reproductive autonomy to face more disapproval from others if bridewealth has been paid. Thus, the experiment provides causal evidence regarding the effects of bridewealth payments on individual attitudes toward, and normative constraints on, women's autonomy.

In turn, norms that limit women's reproductive autonomy are thought to be important contributors to women's reproductive health, fertility, and HIV risk. Our research identifies one factor – bridewealth – that contributes to gender norms. Our findings suggest that understanding the impact of bridewealth payments and working to mitigate the influence of this practice will contribute to efforts to attain the Millennium Development Goals in Sub-Saharan Africa.

## **6. Interactions between the experimental conditions and participant characteristics**

The experiment also provided some evidence that the perceived effects of bridewealth payments varied according to the demographic characteristics of the participants. Many experiments rely on convenience samples of participants. This approach makes sense if there is no reason to think that the characteristics of the participants interact with the theoretical causal factors of interest. In the absence of such interactions, the causal factors will have similar effects regardless of participant characteristics. But, in some contexts, such interactions are likely. Because we conducted our study with a diverse sample of village women, we were able to explore this possibility. We focused specifically on the educational levels and the ages of our female respondents.

First, we looked at whether a participant's reactions to the woman in the vignette varied depending on the participant's education. Assuming that education has a

liberalizing effect, we would expect to find that bridewealth had a weaker effect among the educated than the uneducated participants. Instead, we found that bridewealth actually had a stronger effect among the educated participants (Dodoo, Horne, and Biney 2014). While the uneducated participants saw the behavior of the woman as wrong across the bridewealth conditions, the educated participants saw it as wrong when bridewealth had been paid, but viewed it more positively when no payment had been made.

Our data also allowed us to look at whether the results varied depending on the participant's age. We might expect to find that the elderly are more traditional. If so, then we would expect bridewealth to have weaker effects among the younger than the older participants. We found that age was negatively associated with approval, which suggests that the older female participants viewed the woman in the vignette more negatively than the younger participants (Dodoo, Horne, and Biney 2014). However, the participants expressed disapproval of the woman's behavior across the board, regardless of whether bridewealth was paid. In other words, older women were not more attached to bridewealth-associated norms than younger women.

Analyses of such associations make sense if the sample is random. If the sample is sufficiently large, it is possible generalize from the sample to the larger population. Because our sample was small, it may have substantial sampling error. Thus, while we have confidence in the causal relations proposed by the theory, we cannot be sure that the associations for participant age and education would hold in a larger population. However, our approach demonstrates the kinds of analyses that might be possible with a large sample.

While our data allowed us to look at the effects of bridewealth across participant age and education, there are other factors that might also interact with the causal factor of interest. For example, lineage might also matter. We conducted our experiment in patrilineal communities in which marriage grants men rights to the children. However, men do not obtain the same rights in matrilineal communities. We therefore do not know whether bridewealth would have the same negative effects on women's autonomy in those communities. If a bridewealth payment triggers an obligation of reciprocity, then the participants might still be expected to have negative reactions to the woman in the vignette. But if the bridewealth payment does not have the same effect across lineage systems, we would expect to see different results. A sample drawn from both matrilineal and patrilineal communities would allow us to test this possibility.

Another possibility is that a couple's bridewealth status might have different effects depending on the characteristics of the couple. For example, the effects of bridewealth on normative constraints might be weaker among couples who already have large numbers of children. Future research might manipulate the characteristics of the couple and assess the effects of bridewealth status given those characteristics.

## **7. Discussion and conclusion**

Experiments are particularly well-suited for disentangling causal relations and causal mechanisms. When used with participants and/or communities that vary in theoretically relevant ways, experimental designs allow researchers not only to investigate causal relations, but also to assess potential interactions between experimental conditions and the characteristics of the participant or the setting. Using experimental methods, we were able to test a theoretical argument about bridewealth, an important component of marriage in Africa. This is an issue we had been unable to tackle using more traditional demographic approaches. The results of our vignette experiment provide clear evidence that the payment of bridewealth increases normative constraints on women's reproductive autonomy (Horne, Dodoo, and Dodoo 2013). In a scenario in which the bridewealth negotiated for a particular woman had been completely paid, the norms constraining the woman's autonomy were significantly stronger than in a scenario in which no bridewealth had been paid. Female schooling did not offset this effect.

Lab experiments are not without weaknesses, of course. One of the general weaknesses of experimental designs is that they examine the effects of the manipulated experimental conditions. In other words, a single experiment can only answer a limited number of questions (Glennerster and Takavarasha 2013). In contrast, surveys are often designed to include large numbers of measures, and can be used to address a variety of questions. While our research provides evidence of the effects of bridewealth on normative constraints on women's reproductive autonomy, it does not test the effects of other potentially relevant factors (for example, as suggested above, the characteristics of the couple). In addition, our experiments do not provide evidence regarding the mechanisms at work. For example, the payment of bridewealth may be seen as a signal of commitment on the part of the man, and the hiding of contraception may be seen as a signal of lack of trust on the part of the woman. It may also be the case that the participants' own attitudes about bridewealth inform their expectations of others' reactions. Future studies can address these mechanisms.

Vignette experiments have the additional weakness of being hypothetical. Because the vignette conditions do not have consequences for the participants' lives, the participants may have little investment in paying attention to the experimental stimuli. This means that vignette manipulations are weaker than other types of manipulations (for example, those that affect earnings). Thus, a larger sample size may be needed to provide sufficient power to see effects. In addition, vignette experiments are not the best method for studying the effects of causal factors on participant behavior. When studying these effects, asking participants about their attitudes and expectations may be more effective. In our case, because we were interested in studying norms and not behavior, vignette experiments were appropriate.

Researchers in Africa have made substantial contributions to our knowledge of gender dynamics using ethnographic and survey methods. Increasingly, researchers are also taking advantage of experimental methods. Here we focus in particular on the potential utility of population-based vignette experiments, and suggest that they may also play a useful role. Researchers may want to consider using lab experiments to test mechanisms that are difficult to test using other methods, as this could provide evidence regarding the mechanisms that underlie the correlations identified by the survey data. We might use what we learn from lab experiments to make decisions about measures (such as bridewealth) that could usefully be included in large-n surveys. We could also incorporate experimental designs into large-scale surveys. Using various types of lab experiments and population-based experiments in addition to more traditional surveys, qualitative methods, and field experiments can only serve to enhance our understanding of social phenomena.

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