Sexual Relationship Scripts:
Adapting a Card-Sort Technique for Use with a Semiliterate Population in a Developing Country

Margaret Frye,[1] Jenny Trinitapoli,[2] and Hazel Namadingo[3]

ABSTRACT:
Researchers currently lack the tools necessary to draw aggregate-level inferences about how sexual relationships in rural Africa unfold over time. Knowledge gleaned from survey data is typically filtered through a few "landmark" events: relationship start and end points, first sex, and marriage. To analyze sequences of events constituting relationships and subjective attitudes about sexual and romantic experiences, we employ the relationship scripts method, a card-sort technique in which respondents work with a set of cards describing typical relationship events. Building upon past success using this approach to study relationship ideals, we expand the type of data that can be collected using this methodology, soliciting information about relationship histories, regrets about relationships, expectations for future events, and gender differences in relationship ideals. We describe the development of this method through two rounds of pilot studies and present preliminary results from our survey in Malawi.

[1] University of California, Berkeley
[2] Pennsylvania State University
[3] Tsogolo La Thanzi, Malawi

Across sub-Saharan Africa, the context and content of sexual relationships have been changing rapidly over the past 20 years. Age at marriage has increased across the region, and an increasing proportion of first sexual experiences now occur outside of marriage (Mensch, Grant, and Blanc 2006). The number of adolescents who are still in school has increased dramatically, leading to a bifurcation in sexual experiences in rural communities: in-school youth experience delayed first sex (Lloyd 2005), report a lower prevalence sexual or romantic relationships (Kaufman et al. 2004), and draw romantic partners from separate social networks than their non-schooling peers (Poulin 2009). In a context of high HIV prevalence, increasing access to convenient HIV testing facilities (Angotti et al. 2009), and a shifting arsenal of contraceptive options (McDonnell 2010), youth must navigate a complex and evolving set of risks and negotiations as they choose partners, have sex, and maintain relationships. Further, youth in rural Africa are bombarded with ideological instruction from posters, radio stories, newspaper ads, drama shows, and lectures from leaders in the community about how, when, and with whom they should engage in sexual relationships (Frye 2010).

Rich qualitative data from across the region offer detailed narrative accounts of youth relationships (Poulin 2007; Harrison 2008; Vavrus 2003). These studies offer many advantages over most survey data from the region: they generate more reliable reports of sexual experiences due to increased interviewer rapport and the more flexible format of questioning (Plummer et al. 2004). Qualitative studies also offer insight into how sexual relationships relate to other domains of life, including school attendance, family and household relationships, and peer networks. However, despite these advantages, such studies are ill-suited for making systematic comparisons across sub-groups or for drawing population-level inferences, due to their small and unrepresentative samples. And despite widespread interest in how cultural changes are shaping

the sexual experiences of youth, survey researchers' attempts to document these changes empirically using large samples have been hampered by concerns about the validity of data on sexual behavior.

Recent attempts to improve the quality of survey data about sexual relationships by minimizing reporting error have leveraged new technical and methodological advances to improve upon the known weaknesses of survey data on sensitive behaviors. These include the implementation of ACASI methods (Mensch et al. 2008), the collection of sophisticated biomarker data (Anglewicz et al. 2009),, and relationship history calendars (Luke, Clark, and Zulu in press; Kabiru et al. 2010) However, knowledge about sexual relationships gleaned from these studies is still filtered through a few "landmark" events, most often limited to entry into a relationship, first sex, marriage, and termination of the relationship. Like stars in a constellation, these landmark events offer only a vague outline of how sexual relationships progress. As people, demographers know that the "big" demographic indicators (i.e., first sex, marriage, pregnancy) are surrounded by small and subtle relationship steps, and that variation in these minor steps is a crucial component of the subjective experience of sexual relationships. However, this dimension is almost completely ignored in our scholarship. In short, demographers know little about the "relational" aspect of relationships.

This problem with how demographers study sexual relationships is consistent with two longstanding critiques within social science more generally. First, traditional approaches to the study of sexual relationships largely ignore the argument that Markovian or "variable-based" views of the world are insufficient for capturing the complexity of many social processes, including sexual relationships (Abbott 1990; Mare 2011; Aisenbrey and Fasang 2010; for an exception, see: Boileau et al. 2009). In describing the benefits of a sequential approach to

studying sociological phenomena, Abbott offers a compelling visual metaphor: a school of minnows (cases) swimming in a stream (the variable space). He writes, "The variables model looks at deformations of the whole school from one time period to another; the [sequential method] looks at the path of individual fish over several time periods" (1990, p. 376).

Second, the standard approaches conform to antiquated assumptions about the types of questions that can and cannot be answered with survey data (Vaisey 2009; Mohr 1998). Quantitative social scientists have been eager to "punt" any an all questions about meaning to the "qualitative folks." With some notable exceptions, (Clark, Poulin, and Kohler 2009; Yeung 2005; Harding 2007), attempts to leverage survey data to generate knowledge about respondents' attitudes toward their own sexual relationships are scarce. What would they change if they could about their relationship histories? How do their experiences differ from their relationship ideals? And how do they think and hope their relationship will develop in the future? These questions are at the core of our efforts to understand the cognitive contours underlying the demographic events that we typically measure, such as sexual intercourse, contraceptive use, and marriage.

To examine the intersection of the relational context and the subjective significance of adolescent relationships, we adapted the relationship scripts method -- a hybrid between in-depth interviewing and structured surveys. The approach encapsulates the interactive, respondent-guided aspects of qualitative techniques and retains the comparability and generalizability of quantitative methods. Simply, the approach is a card-sort technique in which respondents are asked to work with a set of cards describing typical events in a romantic relationship. Bearman et al. pioneered the method with a focus on American adolescents as part of the National Longitudinal Survey of Adolescent Health (Add Health). Respondents were given a pile of seventeen cards, each containing a phrase describing common events in a romantic relationship

(see Table 1). Respondents were asked to put the cards in order of what they think should happen in a "perfect relationship" (O'Sullivan et al. 2007; Harris et al. 2009; Harding 2007).

In our context, Southern Malawi, as in other parts of the developing world, the method of relationship scripts has great potential as a tool for investigating the cultural context of sexual relationships. However the task of adapting the method to the context is a formidable one. Through preliminary qualitative research and a pilot study, we first determined a set of relationship steps that are both common and significant to youth in rural Malawi. Next, we identified a local artist, living in Balaka, who was capable of drawing a series of cartoons to illustrate the relationship steps, to render the cards intelligible for illiterate or semiliterate respondents (see Appendix 1 for a selection of illustrations from the cards). Building upon Add health's proven success with using a relationships scripts approach to generate data on relationship ideals, we expanded the type of data that can be collected using this methodology. In Malawi, we use the scripts to solicit information about relationship histories, regrets about relationships, expectations for what will happen in the relationship in the future, how they would advise a close friend or relative about what constitutes an ideal relationship, and how this advised ideal script would change for someone of the opposite gender.

Overview of the Sample and Instrument

The data for the analysis come from Tsogolo la Thanzi (meaning "Healthy Futures" in Chichewa), a longitudinal survey in Balaka, Malawi designed to study how young people navigate the transition to adulthood in an AIDS epidemic. Fifteen hundred female respondents and 600 male respondents were randomly selected from a sampling frame of 15 to 25 year olds living in census enumeration areas within 7 kilometers of Balaka, Malawi. The catchment area

includes a mix of rural and peri-urban communities around Balaka, a growing town about 90 km from the southern city of Blantyre. One unique feature of TLT is the use of a centrally located research center for conducting interviews. Every four months, respondents come to the center and are interviewed in a private room where their responses cannot be overheard by family members or neighbors. This instrument was administered as part of the fifth wave of the survey, fielded between October 1, 2010 to December 31st, 2010. The fifth wave included a total of 1,752 respondents. Because this paper focuses on comparisons between ideal and realized scripts, we remove from our analytic sample 248 respondents who reported that they had never been in a relationship before, and therefore were not asked about their realized script. Table 2 provides basic descriptive statistics of our analytic sample.

The relationship scripts module consists of four sections (see Table 3). The first three sections pertain only to respondents who have previously been in a romantic relationship; if they have never had a romantic partner, then these sections are skipped. First, we ask the respondent to sort and order the cards to tell the story of his or her current partner or most serious previous partner - their *realized sequence*. Second, the respondent proceeds by indicating *their regrets*, or what they would change if they could change one thing about that relationship, by removing, adding, or moving cards. Third, respondents who are still involved with their partner indicate (with cards) their *expectations,* the likely next steps in their relationship starting from where they are now and using as many of the remaining cards as they want. If the respondent has never been in a relationship, then these first three sets of questions are skipped. The fourth component is relevant to all respondents, regardless of their relationship history, and pertains to their conceptions of what an *ideal sequence* looks like. Respondents are asked to imagine they are giving advice to a same-sex friend or relative, and told to put the cards in order of what they

would want to happen to this friend in a new relationship, if everything could go as they wanted it to. Respondents are also asked how they would change the sequence if they were giving advice to someone of the opposite gender.

Developing the Instrument

The initial research for this project began in January 2010, when both American authors were in the field. Through a series of focus group discussions and informant interviews with a convenience sample of 17 Malawian young adults, we generated a preliminary list of 19 relationship steps that were said to be common and significant for youth in Balaka (see Table 1). While our first priority was to capture the most salient events occurring in Malawian romantic relationships, we also tried to maintain consistency with the AddHealth instrument, to facilitate comparative analysis in the future. To do this, we began by presenting the list of steps included in the AddHealth study (Table 1) to six Malawian TLT staff members- supervisors and senior interviewers. Each staff member was independently tasked with identifying steps that were not appropriate to the Malawian context, revising steps that would be unclear, but relevant to this context, and generating a short list of steps that should be added. Once all six lists were complete, this core group of eight processed each recommended change (elimination, revision, addition) and reached a consensus on each proposed change. Two senior interviewers then tested this initial list with a convenience sample of 17 young adults living around Balaka, to ensure that all steps would be familiar and meaningful to people outside of the TLT community and that no important steps were missing.

Our next task was generating pictorial representations of the relationship steps. Illustrating the phrases using pictures was key for our population, many of whom lack functional

literacy. While more than 90% of our respondents have at least four years of schooling, fewer than half have finished primary school, and due to poor-quality schools, many youth in Malawi attend school for five or six years without gaining the skills needed to read and decipher simple sentences like the ones printed on the cards (Chimombo 2005). To generate illustrations for the cards, we worked with Lawrence Kapasule, a self-employed artist who works out of an arts collective in Balaka. After lengthy discussions about the nature of the project and the objectives of this particular method, Mr. Kapasule provided us with mock-up cartoons to represent the 19 steps. To ensure that the illustrations would reflect local reality and be easily understood by survey respondents, we refrained from providing any of our own descriptions and asked him to rely on the one-sentence captions for each relationship step. We instructed the artist to keep the clothing and homes of the characters in the drawings as simple as possible, so that poor rural respondents could relate to the illustrations. We examined his initial drawings, and requested a few minor changes, but in general the drawings exceeded our expectations in terms of capturing each relationship step through a simple image (see Appendix 1). Because some of the statements are gender-specific (example: "*I would give her a present*" versus "*She would give me a present*)," we instructed the artist to draw two parallel sets of illustrations, and ended up with two different sets of cards, color-coded by gender.

Training the Survey Team

We returned to the field in August to pilot the relationship scripts instrument. The first author spent two days training 22 interviewers on the instrument and the use of the cards. Interviewers had been given copies of the instrument and printed sheets showing the cartoon illustrations several days before, and had been discussing the module amongst themselves before

we met as a group for formal training. On the first day, we spent about 2 hours reading the instrument through carefully together, going around the circle with each person reading a section. We then spent the afternoon doing a series of three "role plays" of the entire instrument, with one interviewer administering the instrument to another interviewer.

At first, the interviewers were very concerned that the instrument would be too time-consuming or cognitively complex for respondents to complete, particularly those with low levels of literacy. Indeed, the first run-through of this module alone took over 90 minutes. As only one component of a larger longitudinal survey, this was an unsustainable length. We worked closely with the interviewers to try to come up with ways to make it go faster while maintaining the integrity of the instrument and not rushing the respondent.

The training exercises focused primarily on how interviewers should help respondents to physically arrange cards on the table. As the first step in constructing each sequence, respondents were given the entire pile of cards and asked to identify those that represented things they had experienced in the reference relationship, discarding cards with pictures of things they had not done. During the training, we found that when the interviewers passed the cards one at a time to the respondent, respondents could handle the cards and examine the images, asking questions as necessary before arranging them in a sequence. During the second step, when respondents were tasked with arranging the cards they had selected into a sequence reflecting either their past relationship experience, their expectations for their own relationship, or their ideal relationship, we again discovered that handing the cards to the respondent one at a time – rather than either handing the full stack of cards over at the beginning or having the interviewer handle the cards for the respondent – ensured full participation by the respondent and also allowed for clarification of cards as the sequence was constructed. While the respondent thought about where

to put each new card, the interviewer helped by rearranging the sequence to ensure that illustrations remained visible and no more than five cards were in each row. At the end of each step, interviewers asked the respondents to look over the sequence one last time and make changes as necessary.

On the second day of the training, interviewers spent the morning practicing the instrument in pairs. After lunch, we met as a group to discuss how things had gone in the morning and listen to concerns about the next day's pilot. Some interviewers expressed concern about how to handle cases in which a respondent may be offended by some of the more graphic depictions contained within the cards. One interviewer proposed the offending card should be removed from the pile so that respondent can proceed completing the exercises with only the remaining cards. This suggestion triggered a heated debate with nearly every member of the research team raising their hands to voice their opinions on the matter. Eventually, the group reached a consensus to keep the all the cards in the deck for the entire instrument. Since only the first question asked people to discuss their personal experiences, a topic that was more sensitive than discussing ideals and expectations for the future, respondents are free to discard an offensive card themselves in the latter sections. This lively discussion, centered on the interviewers' concerns about offending respondents with the cards, is illustrative of the value placed on privacy and respecting boundaries in Malawi.[4]

Throughout the training, the interviewers searched for ways to determine whether the respondent understood the instructions. One verification method involved identifying combinations of cards that were either impossible or highly implausible. For instance, a respondent who placed the "having sex" card after the "Getting pregnant card" - a physical impossibility – would require additional probing and explanation. Interviewers suggested a

[4] In the end, not a single respondent refused to give a response for a card.

second implausible sequence specific to the Malawian context: placing the "getting married" card before the "meeting the parents" card.[5]

Identifying respondents who misunderstood the task was a key concern during the pilot and training. However, we were also mindful of the need to train interviewers to avoid influencing respondents' choice of sequence. In other words, interviewers needed to discern a respondent who did not understand from one who was telling us about an unusual or surprising relationship sequence. Training sessions put a heavy emphasis on the fact that there was no "correct" sequence, and provided gentle instructions for probing in cases where it was clear that the respondent did not understand the task. During the training, we had interviewers practice their "poker face" by putting down particularly shocking sequences when playing the part of the respondent to strengthen their "non-reactive" posture when asking questions about sensitive issues.

At times, interviewers' desire to identify indicators that a respondent did not understand the task led them to try to "correct" sequences that they found to be unconventional or "deviant." For instance, during a role-playing exercise, when the person acting as respondent put *"We would talk about contraception"* after *"We would have sex"*, the interviewer asked him to explain this choice, thinking that it indicated that the respondent was confused. Contraception in Malawi is frequently used for spacing rather than stopping, so this "correction" was particularly inappropriate in this context (although it would likely be ill-advised even if this were not the case). This tendency among interviewers – to look for clear-cut ways to catch a respondent answering incorrectly – illustrates one of the difficulties of moving from more traditional

[5] Because meeting the relatives is a part of the traditional marriage process, it is unusual to have a traditional wedding before each member of the couple is introduced to the parents. However, this did happen a few times during the pilot, for example when a respondent lived very far from his parents.

quantitative data-collection methods to the use of card-sort techniques, which are closer in style to more open-ended in-depth interviewing.

Piloting the Instrument

The first author and a team of 18 interviewers piloted the instrument over the course of three days in Ntcheu, a neighboring town about 30 km from Balaka, to a convenience sample of 89 respondents.[6] After each day spent in the field, we spent one full day discussing the experiences and making changes to the instrument; thus the full pilot took six days to complete. To ensure we piloted with both rural and urban respondents, we spent two days at a secondary school in a rural area about 8 km outside of the town's main market, and a third day working out of a primary school in town. Since school was not in session during the holiday, for a small fee we were able to use empty classrooms for the pilot work.

A small group of interviewers sent out the day before each trip to the field recruited potential respondents for the pilot. Potential respondents were informed that interviewers were part of an ongoing research project in Balaka and that the purpose of this exercise was to try out some new questions to see they could be easily understood. Interviewers gave each willing participant an appointment card with the day and time when they should arrive and instructions to present this piece of paper at the school the next morning. Participants received 200 Kwacha (approximately 1.50 USD) for participating in the pilot, and received a snack of cookies while waiting to begin their interview. About 85% of those recruited came to the school to participate in the pilot.

[6] While training included 22 interviewers, four stayed behind to administer the TLT survey to respondents who had missed their appointments during the previous wave of the survey.

Women were much more punctual than the men. After waiting for an hour, we became concerned that we would not have enough respondents to reach our target of 30 interviews, and decided to conduct interviews with five people from the crowd that had gathered around the school to observe the spectacle that was taking place. Eventually, more people showed up with appointment cards, some having walked a long distance to reach the school. Rather than turn them away, we conducted extra interviews, and ended up with a total of 36 on the first day. On the second day, we waited longer for respondents to arrive with their slips of paper, and ended up with 32 interviews. On the third day, we moved the pilot operation to a school near the main market and recruited from middle of the town to test the instrument with more urban respondents. Because interviewers had at this point spent six days in training and piloting the instrument and seemed quite comfortable navigating the questions and using the cards, we conducted only 21 interviews on this third day.

In total, we conducted 89 interviews, 67 with rural respondents and 21 with respondents living in town. Respondents who were recruited from the rural area (for the first two days) were almost all subsistence farmers. Some of the men came carrying hoes, and many women brought their children with them. About half were married, and the average age of respondents was 21. Respondents recruited from the town were slightly younger, less educated, and were less likely to be married.

At the end of each day spent fielding the pilot, we held a full group meeting with the team of 22 interviewers. We also spent time debriefing with individual interviewers while they took breaks between interviews throughout the day. On the days between the pilots, we held morning and evening meetings with the full team and met in small groups throughout the day to discuss their experiences in the field and go over changes to the instrument. Each meeting led to

adjustments in how interviewers were instructed to assist respondents with the cards. For example, we learned that narrating the sequence back to the respondent as they were arranging the cards in a sequence made things more enjoyable for the respondent; this approach also helped interviewers identify misunderstandings about the meaning of a card or confusion over the instructions early on in the exercise.

The first author analyzed pilot data each evening. First, we looked for the cards that were seldom chosen, and for cards that were routinely placed in a surprising position in the sequence. These cases were then taken to the group of interviewers and supervisors and discussed. At times, patterns that seemed surprising to American researchers were, in fact, consistent with the type of responses that Malawians would expect. For example, the card representing kissing was usually placed towards the end of the sequence, both in what the couple had experienced already and in their ideals and expectations. Kissing often occurred after "touching under the clothes" and sometimes after "having sex." This pattern is obviously quite distinct from what would be expected in US populations. When discussed with the interviewers, however, it became clear that kissing is considered a very intimate act in Malawi, and it is quite common to be physically intimate in other ways without kissing each other on the lips. Other findings resulted in changes to the illustrations or to the steps themselves. For example, after seeing that only four respondents chose the civil wedding card, we adjusted the step itself (and the accompanying card) to ask, instead, about the involvement of village chiefs in weddings – a much more common step in the marriage process. Based on findings from the pilot data itself and these extensive insights from interviewers and supervisors, we changed a total of eight cards during the pilot period, and ended up with a final list of 21 relationship steps (see Table 1). We procured

new illustrations to reflect the modified list of steps and tested the new cards before finalizing the instrument.

Challenges Posed by Differences in Perspective both Across and Within Cultures

The relationships scripts methodology has the potential to reveal new insights into how sexual relationships are both experienced and imagined. However in our view, the data are only as good as the cards themselves. If we included cards depicting events or contexts that are unfamiliar to respondents, no meaningful pattern would emerge in the sequences produced by those cards. Because this project advances into mostly uncharted territory – asking respondents in rural sub-Saharan Africa to communicate in detail about the social, physical, and emotional progression of their relationships in a population-level survey- we struggled throughout the pre-pilot and pilot phases to ensure that the cards were meaningful and relatable to respondents. In this section, we describe in detail two cards that posed unique challenges, the first due to language issues and the second due to gender differences in how physical intimacy is understood and discussed in Balaka.

As mentioned above, when developing our initial set of steps to be included in the pilot instrument, we began with the list of 17 steps used in the AddHealth survey and worked to adapt the American list to the Malawian context. During our initial conversations with senior staff members, the first steps to be eliminated were "*I would tell my partner that I loved him"* and *"My partner would tell me that he loved me."* As our colleagues explained to us, in Chichewa, the verb that is used in the phrase "I love you"- *kukonda*- also means "to be sexually attracted to," and men often use the phrase that would translate to mean "I love you" as the first way of communicating to a woman that they are interested in them. After hearing these explanations, we

still searched for a way of capturing the significance behind saying "I love you" in an American relationship- using language to communicate a deeper level of feeling and commitment. Was there not a way that Malawian couples tell each other- in words- that the relationship has deepened or reached a new level of intensity? Through repeated conversations, no informant could think of such a progression of commitment that was not rooted in events represented by other cards, such as marriage, an expression of physical intimacy, or social embeddedness (communicating to other people about the status of a relationship). All agreed that there is no "turning point" in a relationship when a couple begins to use a new word or phrase to describe themselves to each other; thus this step was deleted from the set of cards. Differences in perspective between the American authors and our Malawian colleagues made it difficult for us to grasp that the "I love you" cards were not inaccurately translated – they were irrelevant. Yet, our Malawian colleagues were in agreement about this issue, both in terms of identifying the underlying problem was and specifying which steps should be taken to remedy it.

The second case that we discuss in this section reveals a deeper level of ambiguity- significant differences emerged between our Malawian informants themselves in terms of how they understood and communicated about romantic relationships. In this case, the opinions about how to depict the step "*We would touch each other under the clothes"* were sharply divided along gender lines. We began with a card representing the phrase "*We would touch each other under the clothes."* As originally drawn, this card depicted the male character reaching up the female character's skirt while the female character's hand was reaching between his legs, with his belt undone. During the pilot, several interviewers and members of the senior staff agreed that this card was ambiguous and should be changed. Yet, among those who expressed the opinion that the card should be modified, men and women communicated different opinions

about what specifically needed to be clarified. The seven men we spoke with emphasized that the reflexive nature of the picture- "touching *each other"*- which they worried might be confusing and even offensive to many respondents, as it is much more common for men to reach up women's skirts than vice versa. They were primarily concerned that this image might be offensive to women. They recommended splitting this card into two – one with the man touching the woman and the other with the woman touching the man. On the other hand, the four women who voiced concerns about this card emphasized the need to clarify what is meant by "*under the clothes*," specifically whether under the shirt or under the pants. They recommended that we split the card into two- one showing touching under the shirt, and the other showing touching under the skirt or pants.

These gender differences among those who approached the first author about the card remained when we brought this issue up with the entire interviewer team. When we asked the male interviewers about the card, they echoed the concern that women might get offended by the reciprocal nature of both the text ("touch each other") and the illustration. On the other hand, when we asked the female interviewers directly about whether they felt that respondents might get offended by the picture, because we had heard that women did not typically initiate touching the man's penis in this way, they laughed and said that this was common and that most would not be offended. These gendered reactions occurred both during mixed meetings and during small-group meetings with only one gender present.

The sharp divergence along gender lines in opinions about this matter can perhaps be explained by the fact that in Malawi, sexuality is rarely discussed in informal settings when both men and women are present. It is also likely due to the inherently subjective nature of perspectives on moments of physical intimacy, when two people can develop different

perceptions of the same event, in terms of who initiates what and when. These different perceptions, when communicated only to others of the same gender, can lead to different understandings of what is normal or socially acceptable. Gaining a better understanding of the dynamics leading to the gender pattern we observed in reactions to this card is in itself a worthy research agenda, but it was not our goal during the pilot. We were concerned with generating a list of steps that could be directly comparable between men and women, would not offend respondents, and would generate the maximum level of insight into the progression of steps of physical intimacy. We could not add three new cards, which would be necessary to carry out the suggestions of both the men and the women, because we already had a large number of cards and were concerned about making the task overly difficult for both respondents and interviewers.

In the end, we reached what we perceive to be a compromise between these two viewpoints. We decided to replace this card with two cards: one reading, *"We would touch each other's chests, under the clothes*" and the other reading*, "We would touch each other's genitals, under the clothes."* Both of these cards featured two images- the top left corner showed a picture of the man initiating the touching, and the bottom right corner showed the woman initiating the touching. Interviewers encouraged respondents to choose the card if *either* illustration reflected their past experience, their expectations, or their ideals for the "perfect" relationship. In making our decision, we first examined the pilot data, to look for a gender pattern in who chose the card as originally drawn, and discussed with the interviewers whether respondents seemed offended or taken aback by the card. There was no such pattern, and there were no reports of respondents reporting being offended by the card.[7] In the end, we made the decision based on the fact that

[7] Of course, some respondents did laugh or exclaim when they saw this card, or show other signs of being slightly embarrassed, as should be expected when discussing physical intimacy between strangers in a formal interview setting. But inerviewers reported that the respondents did not seem more uncomfortable when working with this card than they did during other questions related to sexual behavior.

while no consensus emerged as to whether the man touching the woman was truly a different step in the progression of the relationship than the woman touching the man, all agreed that touching the chest and touching the genitals are distinct events. Further, we consciously privileged the opinions our female staff members had about how female respondents would react over the differing positions we heard from our male staff members.

An Initial Look at the Data

This section provides a brief overview of the data, focusing on comparing ideal and realized sequences to each other. First, to compare this elicitation technique to more traditional survey methods, we analyzed inconsistencies between this instrument and early questions in the survey with respect to self-reported sexual activity. Because such differences are instructive, interviewers were told not to correct respondents if they answered inconsistently about their sexual behavior in the two sections of the questionnaire. The two sections of the survey produced virtually identical results. Out of 1,914 respondents who were asked about whether they had ever had sex in both the sexual and romantic partnership questionnaire and the relationship scripts instrument, only seven respondents answered differently in the two modules. This indicates that the respondents understood the task and were able to use the cards to give accurate information about their sexual relationships, at least about significant events like sexual intercourse.

The length of the sequences varies by marital status (Figure 1) and age (Figure 2). Figure 1 shows that married respondents produce much longer sequences when describing their own realized experiences than non-married respondents; the median sequence length for married respondents is about 17, while it is only nine for non-married respondents. Formerly married (separated, divorced, and widowed) respondents produce sequences that are longer than non-

married respondents, but not as long, on average, as married respondents; these respondents averaged about 12 cards in their response to this question. This conforms to our expectations, as married relationships are by nature at a later stage, requiring more cards to explain previous experience. The same pattern is visible for ideal sequences, but the differences between marital categories are attenuated. Married respondents tend to produce shorter sequences when answering about their ideal relationship than they give for their own past experience, while non-married and formerly married individuals produce longer sequences in response to this question than they do for the question about their real experience. These differences in ideal length between nonmarried and married respondents are likely due to the fact that nonmarried respondents are less likely to include the full spectrum of steps, leading to marriage and childbearing, when describing an ideal relationship for a peer or relative.

As shown in Figure 2, younger respondents tend to provide shorter responses to the sequence describing their past relationships, with a maximum difference of about nine cards between the youngest and oldest respondents. This is consistent with what we expected. Older respondents – those in their mid-to-late 20s – are more likely to have progressed further in their own relationships, and also more likely to advise friends to pursue relationships involving sex, marriage, and childbearing, thus producing longer sequences in both sections of the questionnaire. As was true for the analysis of sequence length by marital status, in the right-hand panel showing the ideal sequence, the age pattern is diminished but still visible.

Figures 3 and 4 compare the proportion of respondents who select each card for the sequence describing their past experiences in their relationship ("realized sequence") to the sequence describing what they would advise a close friend or relative about their ideal relationship ("ideal sequence"). Figure 3 shows the difference between these two proportions,

calculated as the proportion selecting each card for their realized sequence minus the proportion selecting the card for their ideal sequence. We drew lines to show the three cards where the proportion who selected each card differed by more than 40%; these three cards were *"We would have sex,"* which many more people experience than would advise those close to them for the "perfect relationship," and "*We would have a religious wedding"* and *"We would go for HIV testing and counseling (HTC)*," which significantly more people would advise for an ideal relationship than had experienced in their own relationships. We will examine the religious wedding and HTC cards in more detail in the following section; see the conclusion section for a detailed discussion of the low proportion of respondents including sex in their ideal sequence.

Figure 4 compliments Figure 3 by showing the proportion selecting each card for ideal versus realized relationships. This graph is sorted by the difference measure depicted in Figure 3, so the cards on the left side were chosen more in the ideal sequence and those on the right were chosen more in the real sequence. The card that was chosen least frequently over all was *"We would touch each other's genitals, under the clothes,"* which indicates that the controversial opinions that were voiced about this card reveal real ambiguity about the role of this step in relationship narratives in rural Malawi. Less than half of all respondents selected the cards related to physical intimacy or pregnancy when describing what they would advise for an ideal relationship, demonstrating strong ideational support for abstinence and delaying childbearing among this sample, though such abstinence is rarely practiced in reality. A sizable minority of respondents selected the card "*I would see less of my friends so I could spend more time with [my partner]*. In a culture where men and women rarely spend time together in public, it seems that the idea that one should spend less time with close friends when in a relationship is not a foregone conclusion.

Table 4 shows the average rank order of each card, among those respondents selecting the card for each type of sequence. For each sequence, we assigned each card a rank number, starting with one for the first card in the sequence and continuing until the last card in the sequence. We then calculated the average rank for each card. This table shows the cards sorted by average rank, among those who were asked about both their realized relationship and their ideal relationship (excluding those who reported having never been in a romantic relationship before). For any specific card, the sequences that do not contain the card are not assigned a rank for that card. The left column shows the rank order for the realized sequences, while the right column lists the rank order for ideal sequences. The arrows show where each card moves in the sequence, when shifting from realized to ideal sequence. For instance, we can see that the card *"I would tell close friends that we are a couple"* moves from the third card in the realized sequence to the fifth card in the ideal sequence.

It is important to keep in mind that the rank-order sequences shown in Table 4 are not the most frequently chosen sequence. The sheer complexity of this data, with 21 possible cards that could be arranged in any order, of varying lengths, makes having identical sequences statistically unlikely. Indeed, with 1,752 respondents in our sample, the "most frequent" realized sequence was shared by only two respondents and the most frequent ideal sequence was given by three respondents. These sequences were much shorter than the average sequence.

Instead, Table 4 should be interpreted as conveying the general place within the sequences that each card typically occupies. From this display, we know that, for both the realized and ideal sequence, "*We would decide to get married"* is usually placed at the very beginning of the sequence, while *"We would have a traditional wedding"* and *"We would pay the chief to register our marriage"* are usually placed in the middle of the sequence, and the

cards "*We would discuss contraception" and "I [or my partner] would get pregnant"* are most often placed towards the end of the sequence. Looking at the cards that moved significantly from the realized sequence to the ideal sequence, and the direction of movement, is also illuminating. For the cards that shift three or more spaces in the ranking, the arrows are drawn in dark blue, while those moving fewer than three spaces are drawn in grey. The three cards displaying events that typically occur three or more steps earlier in ideal relationship sequence when compared to the realized sequence are: *"We would go for HTC", "We would have a religious wedding,"* and *"We would talk about contraception."* The four cards that move three or more steps forward in this display, when moving from realized to ideal relationship sequences, are: *"We would meet somewhere to chat in private," "We would go out alone together holding hands," "We would have sex," and "We would touch each other's chest, under the clothes."*

Table 5 shows the most common answers to the "regrets" question, where respondents were asked, "If you could change one thing about your relationship, what would you change? You can add one card, delete one card, or move one card to a new location." The most common type of response was "add a card," chosen by 35 percent of the sample. Out of the 524 respondents choosing to add a card, the most common type of card added was related to marriage: 35 percent chose to add the card depicting the church wedding, an additional nine percent chose the card showing the traditional wedding. Among the 19 percent of the sample who would choose to delete a step in their relationship if they could make one change, most chose to delete either sex or pregnancy. Among those who would choose to move a step, the most common response was to move sex later in the relationship, followed by moving HTC earlier in the relationship.

Two Patterns that are Idealized by Many and Realized by Few

In this section, we take a closer look at the steps that show the starkest contrast between how they are presented in realized versus ideal sequences. Specifically, we examine three cards: *"We would have sex," "We would have a religious wedding,"* and *"We would go for HTC."* We first present evidence showing that responses to the question asking about ideal relationship sequences display clear normative ordering for these events; an ordering that is rarely experienced in reality. In the next section, we conduct a series of regressions to determine which respondents are among the minority who experience these widely idealized patterns in their own relationships.

These cards were used in distinct ways by respondents when describing their ideal and realized relationships; differences emerge in three respects. First, as shown in Figure 3, the difference between the proportion of respondents selecting each card for realized versus ideal sequence was greatest in magnitude for these three cards (with an absolute value greater than 0.4). Second, these three cards were placed in different parts of the sequence, on average, for realized sequences versus ideal sequences. When moving from realized to ideal, religious wedding and HTC were moved earlier, and sex was moved later, as shown in Figure 5. And third, as Tables 6 and 7 show, the relationship between the cards changes dramatically when going from realized to ideal sequences.[8] While only nine percent of the sample placed the religious wedding card before the sex card when describing their realized sequence, more than half of all respondents - 56 percent - placed the religious wedding card first when describing their ideal sequence. In terms of HTC, 31 percent placed this card before sex for their realized sequence, and 82 percent placed this card first when describing their ideal sequence. In other

[8] For these analyses, the sample is limited to those who selected the card representing "*We would have sex"* for their ideal sequence. To keep the sample consistent with the analyses presented later in this section, we also removed 34 respondents who had missing values for variables of interest in our regression analyses.

words, these orderings of events, namely having sex after a religious wedding and after going for HTC, are desired by many and realized by few.

Figure 6 shows where these three cards are placed in realized and ideal sequences based on the sequences chosen by a randomly selected sub-sample of 300 married respondents[9]. Figure 6 shows two panels; the left-hand panel displays the realized sequences, and the right-hand panel displays the ideal sequences. The sequences read from left to right for each, with the 300 observations arranged randomly along the vertical axis. HIV testing is shown in green, sex is shown in red, and religious wedding is shown in yellow. All other steps in the sequence are depicted in blue. This graph provides a stark visual rendering of the differences between how these three cards are placed in the two different types of sequences. In the left-hand panel, the green and red blocks are distributed throughout the image, with no clear pattern, and there are only a handful of yellow blocks, those representing church wedding. On the other hand, in the right-hand panel, two bands of color emerge- a green stripe at the very beginning of the sequence, representing going to get tested for HIV, and a yellow stripe in the middle of the sequence, representing church wedding. The red blocks decrease in number and appear more frequently towards the end of the sequence. These bands of color show the emergence of a normative sequence in the ideal scripts, one that is not present in the realized scripts.

The evidence presented thus far shows that most respondents agree that an ideal relationship is one containing HTC and a religious wedding, and that most respondents agree that these events should come before sex. In the next section we will seek to identify the key characteristics of "innovators" who have practiced these widely idealized patterns of behavior in their own relationships. Do these patterns represent new trends practiced by younger cohorts;

[9] The sample was limited to married respondents for this graph in order to ensure that differences between the two types of sequences was not caused by a respondent being in the early stages of her current relationship, but rather by substantive differences between how she imagines and experiences relationships.

behaviors that we can expect to become more prevalent over time? Are they indicators of an elite class, who potentially have greater access to the urban areas and to materials promoting models of Western romantic love? Are they practiced by the most highly educated, those who have been exposed to "life skills" and other curricular programs promoting HIV testing before sex and abstinence until marriage? Are the two types of innovation-- having religious wedding and going to get tested for HIV before having sex-- practiced by the same people, or are these two different sets of ideals (religious wedding vs. HIV testing), spreading through different channels?

A Closer Look at the Innovators: The Minority Who Have Enacted These Idealized Patterns

To address these questions, we present a series of logistic regression models predicting the actualization of either the religious or the testing ideal. Respondents who placed the religious wedding card before their sex card in both their real and ideal sequence are coded one for religious wedding innovators (vs. zero), and those who placed the HTC card before the sex card in both sequences are coded one as testing innovators. In other words, these are respondents who have enacted what are rare but widely desired patterns of progression in their own relationships.

We hypothesized that those who attend religious services more regularly would be more likely to experience both ideals; they would be more likely to prioritize having a religious wedding before having sex because this is a core tenet of the teachings of most religious institutions operating in Balaka. Highly religious individuals may also be more likely to go for HTC because religious leaders have been actively promoting messages about HIV prevention in rural Malawi since before 2004, and their prevention messages frequently include urges for members to get tested (Trinitapoli 2006; Trinitapoli 2010; Manglos and Trinitapoli forthcoming). Because religious involvement can be non-linear, we model attendance using a set of dummy

variables to distinguish between infrequent (less than weekly), average (weekly), and very frequently (i.e. more than weekly) attendance.

For the model predicting having a religious wedding before sex, we control for respondents' attitudes toward premarital sex using a binary measure of agreement with the statement: "*Sex before marriage is acceptable if the couple loves each other."* To capture respondents' attitudes toward religious authorities, who are likely to be key promoters of having a religious wedding before having sex, we also control for whether or not a respondent sees religious leaders as hypocrites using their response (zero, one) to the statement: "*Religious leaders say one thing and do another."*

For the models predicting going together to get tested for HIV before having sex, we control for beliefs and attitudes that may represent distinctive attitudes towards testing and HIV transmission using binary measures that indicate agreement with two statements about HIV/AIDS transmission: ("*People can create AIDS for you")* and safe sex (*"Sex with a condom is not sweet").* In local parlance, the statement "*people can create AIDS for you,"* indicates that the respondent does not hold an *exclusively* biomedical view of HIV and suspects that witchcraft can cause – or at least manipulate – HIV transmission. We also include a probabilistic estimate of respondents' perception of the risk of contracting HIV/AIDS from a single sex act. This question uses an innovative method to collect probabilistic estimates of future outcomes, rigorously validated by Delavande and Kohler (2009) in Malawi. Respondents are asked to choose an appropriate amount of beans from a pile of 10 to represent the probability that a specific outcome will occur. The specific question analyzed here reads: "*Consider a healthy woman in your village who currently does not have HIV. Pick the number of beans that reflects how likely you think it is that she will become infected with HIV during a single intercourse*

without a condom with someone who has HIV/AIDS." For the regression analysis, responses to this question were standardized around the mean response. Finally, we include a measure of respondents' attitudes toward prevention in light of the increased access to anti-retroviral treatment (ART) in Balaka. The question reads: "*Now that we have treatment, prevention isn't as important as it used to be."* Respondents chose from four different possible responses to this statement: strongly agree, agree, disagree, and strongly disagree.

In both models, we employ a series of control variables that are considered standard in studies of young adult sexual behavior, including current age, socioeconomic status, and gender. To measure socioeconomic status, we constructed a standardized index of 11 household goods commonly owned in Balaka. We use two measures of educational status: a variable showing years of completed education, ranging from zero to 12, and a dummy variable indicating whether the respondent is currently schooling. We also employ a dummy variable to indicate current employment -- either full time or temporary. Before being entered into the regression models, age, years of education and the index of socioeconomic status were standardized around the mean response. For the model predicting going for HTC before sex, we also include a dummy variable indicating those respondents who have never married.

Below, we present results from a series of logistic regressions predicting these two outcomes. We limit our sample to those who report ever having sex in the reference relationship they describe using the cards (1,221 respondents), in order to reduce heterogeneity of experiences and focus more precisely on predictors of innovation in the steps preceding sex. By limiting our sample to those who report ever having sex with their partner, we know that everyone in our sample has had the chance to enact these idealized patterns of progression. We also remove respondents who have missing values for any of the variables included in our

models (31 respondents). Table 8 shows the mean and standard deviation (when appropriate) for all variables included in our models, disaggregated by gender.

Table 9 displays coefficients from models predicting "religious" innovation – those who place religious wedding before sex in both their realized and ideal sequences, among those who have ever had sex . Model 1 clarifies some basic socio-demographic patterns. Older respondents are significantly more likely to report experiencing this pattern in their relationship, which stands in contrast to our hypothesis that church weddings represent a newly emerging trend, introduced by younger cohorts. Confirming our assumptions, respondents who are currently in school are significantly less likely to place the church wedding card before the sex card sex, and those with higher SES are significantly more likely to be innovators of this pattern. In Model 2, we add measures of religious involvement (attendance at weekly services) and find that the most highly religious, those who attend religious services more than once per week, are about twice as likely as those who attend infrequently to report having a religious wedding before they had sex. In Model 3 we account for the respondent's attitudes toward premarital sex; not surprisingly, we find that those who think that premarital sex is acceptable are less likely to have had a religious wedding before sex (though the result is only marginally significant)[10].

Table 10 displays results from models predicting membership in a different sort of innovative group. "Testing" innovators placed the card representing going together for HIV testing before the sex card in both their real and their ideal sequences. As in Table 9, our first model establishes the basic socio-demographic patterns, while Model 2 adds religious service attendance, and Model 3 includes attitudinal factors that may be associated with early HTC. The socio-demographic patterns largely conform to our expectations: socioeconomic status is positive

[10] Note that this variable does not differentiate between marriage type, and could be interpreted by the respondent to mean traditional weddings, religious weddings, and civil weddings.

and significant, and education has a strong positively relationship with being a testing innovator, with each year of schooling increasing the odds of early testing by a factor of 1.3. In Model 2 we see that those who attend religious services most frequently are also the most likely to report going together for testing before they had sex with their partner (this result is marginally significant). Model 3 of accounts for attitudinal differences using four measures of perceptions of AIDS risk and safe sex described above. Respondents who believe that "*people can cause AIDS for you*" are 0.67 times less likely to have been tested before having sex, In contrast, responding with a higher estimate of the probability of contracting HIV/AIDS from a single unprotected sex act is positively associated with early testing, which indicates that those who perceive AIDS to be an imminent threat are more likely to take this preventive measures. Finally, disagreement with a statement designed to measure disinhibition due to the availability of ART is marginally associated with early testing.

In sum, these analyses indicate that "innovators" – the minority who report enacting relationship patterns that are widely idealized but seldom experienced – are distinct along several important dimensions. Both types of innovators are more likely to be of higher socio-economic status and attend religious services frequently. Both types of innovators also hold distinctive attitudes about sex and AIDS that provide motivation for their innovative behaviors – whether strategically or not. Our results also reveal important differences between these two types of innovators. While both are associated with elite status, testing innovators are more likely have more education and to be formally employed and marriage innovators tend to be older, indicating that early HTC is a mark of allegiance to "modernizing" institutions in Balaka such as schools and non-governmental organizations. Church weddings, on the other hand, may be a symbol of

accumulated social stature. If these shared ideals do indeed represent emerging norms, our results suggest that they will spread through distinct channels.

Conclusion

Concerns about the quality and depth of data on sexual behavior are central to researchers working on topics related to sex, fertility, and family formation. As part of a broader effort to understand how young adults make decisions about relationships and family formation, we adapted a novel technique for use with a semi-literate population in Southern Malawi. By using a combination of card-sort and sequencing techniques, we successfully designed an innovative data collection instrument that elicits both the lived experiences and ideals of young adults in this setting.

This innovative methodology addresses three important challenges that researchers face while collecting data on sexual relationships in settings like Balaka. First, based on insights from other researchers (Abbott 1990; Bolieu et al. 2009), we sought to collect data that would allow us to analyze not only the presence or absence of each relationship step but also reveal the ordering of these events, to allow us to detect important heterogeneity in how people travel along distinct paths to the same destination (e.g. marriage), even if these paths start from the same place and are similar in duration. To make this complex task manageable, we sacrificed the ability to calculate "distance" between events in time and instead conceptualized distance in terms of the presence or absence of intermediary steps. This focus on the ordering, rather than the precise timing, of relationship events allowed us to include more steps, and to include more subtle or contextual events that would not be included in other analyses of sexual relationships.[11]

[11] Because this instrument is embedded in an ongoing longitudinal survey, we do have data on timing of several events represented in the relationship cards, including relationship start and end points, first sexual intercourse,

Second, the unspoken and pictorial aspect of the relationship scripts instrument makes this tool particularly relevant for researchers studying semi-literate populations and for settings where requiring verbal disclosure of sensitive information may not be the optimal approach to garnering information. This differs in an important way from the idea that bias is removed taking away human interaction, a philosophy that underpins the development and implementation of the ACASI method. By removing the interviewer from the equation, respondents answer directly to a machine, which presumably cannot violate their confidentiality, make faces as they disclose non-normative behaviors, or laugh at them after they have finished the interview. However, we follow more closely along the lines of other scholars who, based on new data collected in sub-Saharan Africa, do not view interviewers themselves as the primary source of social desirability. Indeed, two recent studies have found that interviewers elicit higher quality data in scenarios that maximize, rather than minimize, the potential effect of interpersonal dynamics. A larger number of respondents admitted to having sex during in-depth interviewing than during a standard survey (Poulin 2010), and in a longitudinal survey in Kenya, interviewers who lived in the area and were familiar to respondents generated a higher response rate and elicited more consistent data, than strangers from other regions of the country (Weinreb 2006).

In our case, the pictorial and non-verbal characteristics of the relationship scripts approach allow the respondent to tell their narrative to an interviewer without saying undesirable things about themselves out loud. This method thus has the potential to minimize both the *deference effect*, the idea that respondents "tell" the interviewer what the respondent thinks she wants to hear, with an emphasis on "telling" in the literal sense, and *impression management*, the tendency to make themselves look good. By giving respondents the physical task of arranging

---

weddings (specifying the particular type of wedding ceremony), and pregnancy. Future analyses will examine the realized relationship scripts in relation to these time-stamped events.

the cards in a way that tells a story, the relationship scripts methodology dilutes the amount of energy respondents can spend on impression management. Further, by eliciting flexible narratives that are constructed and communicated by the respondents, the relationship scripts methodology removes respondents from the role of student or patient, answering discrete questions as they would in school classrooms or medical clinics, and thrusts them into the role of narrator or storyteller.

Like other researchers concerned with data quality, we designed the relationship scripts instrument with an eye to minimizing social desirability bias that leads to the underreporting of sexual *behavior*. Preliminary results suggest a type of social desirability bias that we did not expect: underreporting of sexual *ideals*. 60 percent of individuals did not place the card depicting sexual activity in their ideal scripts, while only 20 percent omitted this card for their realized scripts. Preliminary comparisons between those who placed the sex card in their ideal sequence and those who did not are presented in Appendix 2. Those who did not select the sex card are on average younger, less likely to be married, more likely to be in school, and less likely to report being sexually active themselves. They are also 39% less likely to include a religious wedding marriage in their ideal sequence, and 97% less likely to include pregnancy in their ideal sequence. These results suggest that respondents who are currently at an earlier stage in their own relationship progression - in school, not married, or not sexually active – are quite myopic in their visions of an ideal relationship, omitting steps further into the sequence that lead to marriage and childbearing.

It is also possible that the wording of this question—in which respondents are asked to imagine themselves *giving advice* to a close friend or relative of the same age and gender—led them to omit sexual intercourse and pregnancy. Relating the task of describing an ideal

relationship to a specific person in the respondents' lives offers advantages over the other alternatives. Asking about "a perfect relationship" in the abstract (as Add Health did) would be more likely to be interpreted as a test of whether or not they know the "right answer" as communicated by NGOs, teachers, or religious leaders. Alternatively, asking respondents about what they would have wanted for themselves would likely generate far more null responses; with most respondents already married, it is likely that many would be reluctant to revise their own life histories, as is shown by the large number of people choosing "no change" for the regrets question in Table 5. Yet this format also leads to some ambiguity in interpreting the ideal sequences. Because the question refers to both the sequence of steps in an ideal relationship and the act of communicating about that ideal sequence to a specific person, it is difficult to ascertain whether respondents who omitted sexual intercourse did so because sex does not fit within their image of an ideal relationship or because they would never discuss sex when giving advice like this.

Third, our experience developing and piloting this module in concert with our local fieldstaff offers insights into how to implement complex and resource-heavy instruments as components of larger quantitative research studies. Overall, our fieldstaff concurred, in the words of one interviewer, that "respondents were much more flexible to share their feelings and experiences using this method. But it was also demanding on the part of the interviewer to get the respondent to the point of understanding the method and gaining his/her trust to fully participate." This feedback from our fieldstaff underscores a critically important point: despite its many merits, the relationship scripts instrument is deceptively labor intensive, particularly in the early stages. In our experience, there is no substitute for PIs in the field to supervise the extensive training and revisions that adapting such a method involves.

The relationship scripts methodology is neither the most efficient way to collect basic information on sexual behavior nor is it equally appropriate to all populations. But for researchers aiming to generate deeper understandings of the context in which demographic behavior develops, especially in areas where literacy levels are low and local mores circumscribe discussions about sex, the relationship scripts approach offers a promising new tool.

References

Abbott, A. 1990. “A primer on sequence methods.” *Organization Science* 1:375–392.

Aisenbrey, S., and A. E Fasang. 2010. “New Life for Old Ideas: The”Second Wave”of Sequence Analysis Bringing the”Course”Back Into the Life Course.” *Sociological Methods & Research* 38:420.

Anglewicz, P., and others. 2009. “The Malawi Diffusion and Ideational Change Project 2004–06: Data collection, data quality, and analysis of attrition.” *Demographic research* 20:503.

Angotti, N. et al. 2009. “Increasing the acceptability of HIV counseling and testing with three C's: Convenience, confidentiality and credibility.” *Social Science & Medicine* 68:2263–2270.

Boileau, C. et al. 2009. “Sexual and marital trajectories and HIV infection among ever-married women in rural Malawi.” *Sexually transmitted infections* 85:i27.

Chimombo, J. P.G. 2005. “Quantity versus quality in education: Case studies in Malawi.” *International Review of Education/Internationale Zeitschrift f\ür Erziehungswissenschaft/Revue internationale l'éducation* 51:155–172.

Clark, Shelley, Michelle Poulin, and Hans-Peter Kohler. 2009. “Marital Aspirations, Sexual Behaviors, and HIV/AIDS in Rural Malawi.” *Journal of Marriage and Family* 71:396-416.

Frye, M. 2010. “Irrationally Ambitious? The Cultural Construction of Future Aspirations in Malawi.”.

Harding, D. J. 2007. “Cultural context, sexual behavior, and romantic relationships in disadvantaged neighborhoods.” *American Sociological Review* 72:341.

Harding, David J. 2007. “Cultural Context, Sexual Behavior, and Romantic Relationships in Disadvantaged Neighborhoods.” *American Sociological Review* 72:341-364.

Harris, Kathleen M. et al. 2009. “The National Longitudinal Study of Adolescent Health: Research Design..” http://www.cpc.unc.edu/projects/addhealth/design (Accessed March 1, 2011).

Harrison, Abigail. 2008. “Hidden Love: Sexual ideologies and relationship ideals among rural South African adolescents in the context of HIV/AIDS - PB - Routledge.” *Culture, Health & Sexuality: An International Journal for Research, Intervention and Care* 10:175.

Kabiru, C. W, N. Luke, C. O Izugbara, and E. M Zulu. 2010. “The correlates of HIV testing and

impacts on sexual behavior: evidence from a life history study of young people in Kisumu, Kenya." *BMC Public Health* 10:412.

Kaufman, C. E, S. Clark, N. Manzini, and J. May. 2004. "Communities, opportunities, and adolescents' sexual behavior in KwaZulu-Natal, South Africa." *Studies in family planning* 35:261–274.

Lloyd, C. B. 2005. *Growing up global: the changing transitions to adulthood in developing countries*. Natl Academy Pr.

Luke, N., S. Clark, and E. Zulu. n.d. "The Relationship History Calendar: improving the scope and quality of data on youth sexual behavior." *Demography*.

Manglos, Nicolette, and Jenny Trinitapoli. "The Third Therapeutic System: Faith Healing Strategies in the Context of a Generalized AIDS Epidemic." *Journal of Heatlh and Social Behavior*.

Mare, Robert D. 2011. "A Multigenerational View of Inequality." *Demography*. http://www.springerlink.com/content/w76326l165222782/ (Accessed March 1, 2011).

McDonnell, T. E. 2010. "Cultural objects as objects: Materiality, urban space, and the interpretation of AIDS campaigns in Accra, Ghana." *American journal of sociology* 115:1800–1852.

Mensch, B. S, M. J Grant, and A. K Blanc. 2006. "The changing context of sexual initiation in sub-Saharan Africa." *Population and Development Review* 32:699–727.

Mensch, Barbara S., Paul C. Hewett, Richard Gregory, and Stephane Helleringer. 2008. "Sexual Behavior and STI/HIV Status Among Adolescents in Rural Malawi: An Evaluation of the Effect of Interview Mode on Reporting." *Studies in family planning* 39:321-334.

Mohr, J. W. 1998. "Measuring meaning structures." *Annual Review of Sociology* 24:345–370.

O'Sullivan, Lucia F., Mariah Mantsun Cheng, Kathleen Mullan Harris, and Jeanne Brooks-Gunn. 2007. "I Wanna Hold Your Hand: The Progression of Social, Romantic and Sexual Events in Adolescent Relationships." *Perspectives on Sexual and Reproductive Health* 39:100-107.

Plummer, M. L et al. 2004. ""A bit more truthful": the validity of adolescent sexual behaviour data collected in rural northern Tanzania using five methods." *Sexually Transmitted Infections* 80.

Poulin, Michelle. 2010. "Reporting on first sexual experience: The importance of interviewer-respondent interaction." *Demographic research* 22:237-288.

Poulin, Michelle. 2009. "Schoolgirl Networks and Schoolgirl Identity: Maintaining Social Status

in a Poor Country." Hilton San Francisco, San Francisco California http://www.allacademic.com/meta/p_mla_apa_research_citation/3/0/8/4/0/p308402_index.html?phpsessid=4afea3895aaf4aab503ea0accb29b7fb (Accessed March 1, 2011).

Poulin, Michelle. 2007. "The Sexual and Social Relations of Youth in Rural Malawi: Strategies for AIDS Prevention." *Ph.D. Dissertation*.

Trinitapoli, J. 2006. "Religious responses to aids in sub-Saharan Africa: An examination of religious congregations in rural Malawi." *Review of Religious Research* 47:253–270.

Trinitapoli, Jenny. 2010. "The AIDS-related Activities of Religious Leaders in Malawi." *Global Public Health: An International Journal of Research, Policy, and Practice* 6:41-55.

Vaisey, S. 2009. "Motivation and Justification: Toward a Dual-Process Theory of Culture in Action." *American Journal of Sociology* 114.

Vavrus, F. K. 2003. *Desire and decline: Schooling amid crisis in Tanzania*. Peter Lang Pub Inc.

Weinreb, Alexander A. 2006. "The Limitations of Stranger-Interviewers in Rural Kenya." *American Sociological Review* 71:1014 -1039.

Yeung, King-To. 2005. "What Does Love Mean? Exploring Network Culture in Two Network Settings." *Social Forces* 84:391-420.

Table 1: Steps Included in Card Sequence in AddHealth, TLT Pilot, and Final TLT Instrument[12]

	AddHealth Steps	TLT Pilot list of Steps	TLT Final List of Steps
Social Embeddedness	We would go out together in a group	*We would go out together in a group.*	We would **attend a community event together.**
	I would tell other people that we were a couple	I would tell **close friends** that we are a couple.	I would tell close friends that we are a couple.
	I would see less of my other friends so I could spend more time with my partner	I would see less of my other friends so I could spend more time with him.	I would see less of my friends so I could spend more time with him.
	I would meet my partner's parents	I would meet my partner's parents.	I would meet my partner's parents.
		My partner would meet my parents.	My partner would meet my parents.
Physical Intimacy	We would kiss	We would kiss.	We would kiss.
	We would have sex	We would have sex.	We would have sex.
	We would touch each other under our clothing	*We would touch each other under our clothing.*	We would touch each other's **genitals.**
	We would talk about contraception *or sexually transmitted diseases*	We would **talk about contraception**.	We would talk about contraception.
	We would hold hands	We would **go for HIV testing and counseling.**	We would go for HIV testing and counseling.
			We would touch each other **under the shirts**
Emotional Intimacy	We would go out together alone	We would go out together alone, **holding hands.**	We would go out together alone, holding hands.
	I would give my partner a present	I would give my partner a present.	I would give my partner a present.
	My partner would give me a present	My partner would give me a present.	My partner would give me a present.
	We would think of ourselves as a couple.		**We would meet somewhere to chat in private.**
	I would tell my partner that I loved him or her		
	My partner would tell me that he or she loved me		
Marriage/ Family Formation	My partner or I would get pregnant	**We would have a traditional wedding.**	We would have a traditional wedding .
	We would get married	**We would have a civil wedding.**	We would pay the chief to register our marriage.
		We would have a religious wedding.	We would have a religious wedding.
		We would start living together.	We would start living together.
		I would get pregnant.	I would get pregnant.
		We would decide to get married.	We would decide to get married.

[12] Bold: card or text added. Italics: card or text deleted.

Table 2: Descriptive Statistics of the Sample

	Male		Female	
	Mean	SD	Mean	SD
N	389		1115	
Age	22.06	3.17	21.49	3.00
Married	0.23		0.59	
In Ongoing Nonmarital Relationship	0.42		0.27	
Years of Education	7.42	2.50	7.34	2.33
In School				
Primary	0.16		0.04	
Secondary	0.26		0.13	
Employed	0.28		0.30	

Table 3: Summary of Questions Asked in Survey Instrument[13]

Think about your current relationship or your most serious past relationship.	
Realized Sequence	Make a pile of all of the cards that represent events that you have experienced before in your relationship with [name of partner].
	Put the cards in this pile in order of how they happened with this partner, from what happened first to what happened last. If you can't remember exactly what happened, just make your best guess.
Regrets	If you could change one thing about what has happened to you with this partner, what would it be? You can add one card, remove one card, or change the order of one card.
Expectations	What do you expect will probably happen in the future with this partner? [asked only for ongoing relationships].
Think about your closest friend or relative, someone about your age and the same gender as you. Imagine you are giving them advice about a new relationship.	
Ideal Sequence	Choose the set of cards that show events that you would want to happen to [name], if their relationship could go exactly as you would want it to go.
	Put the cards in order of what you would advise your friend or relative, stating with what you would want to happen first and ending with what you would want to happen last.
	How would you change this sequence if you were giving advice to someone of the opposite gender?

[13] Full survey instrument available on request. Please contact Margaret Frye at maggief@demog.berkeley.edu.

Figure 1

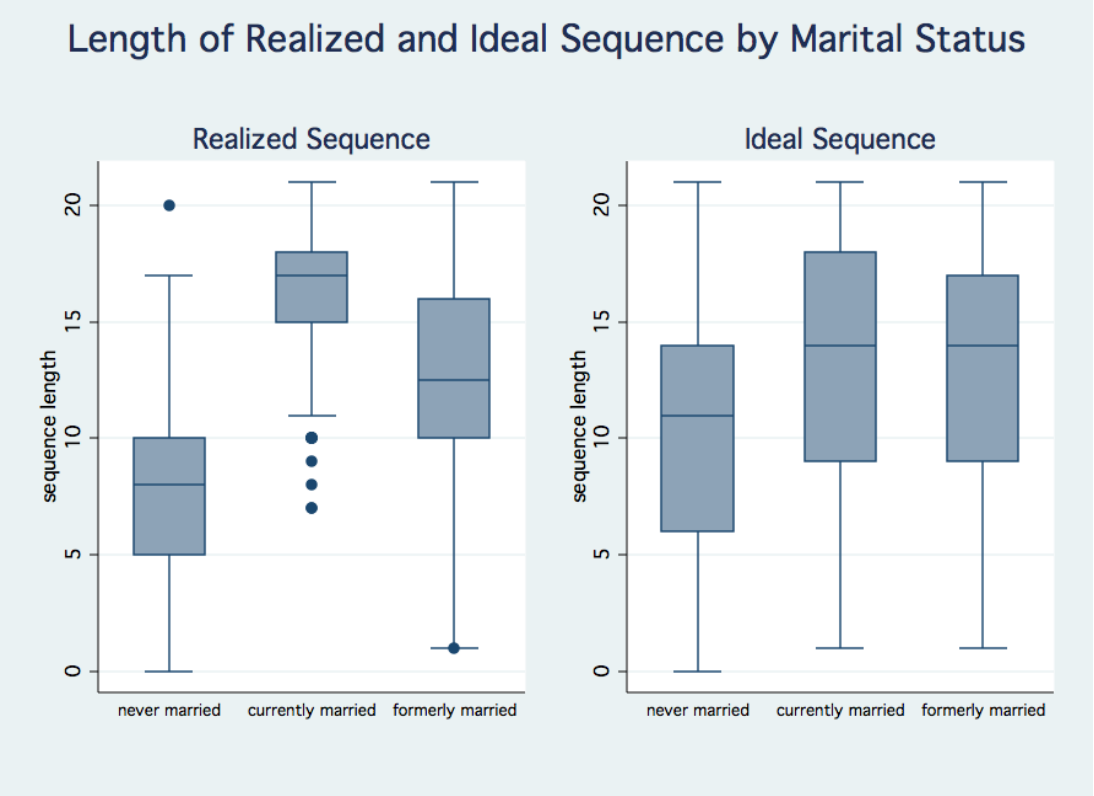


Figure 2

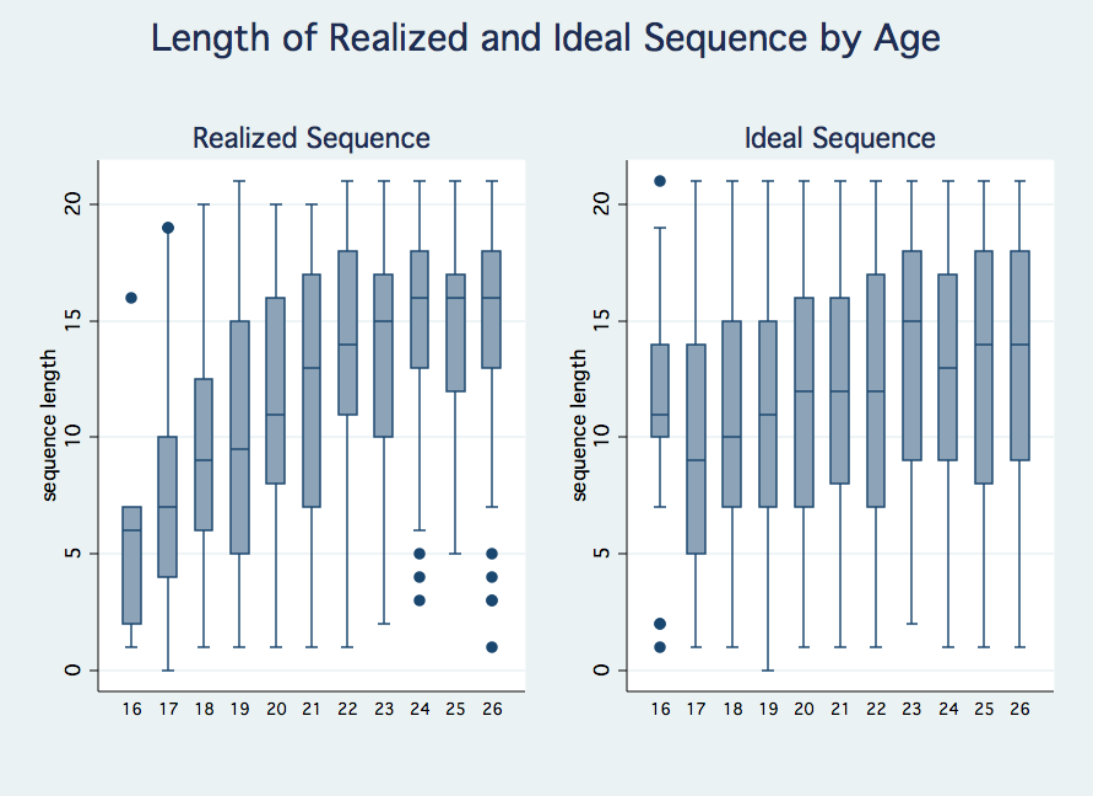


Figure 3

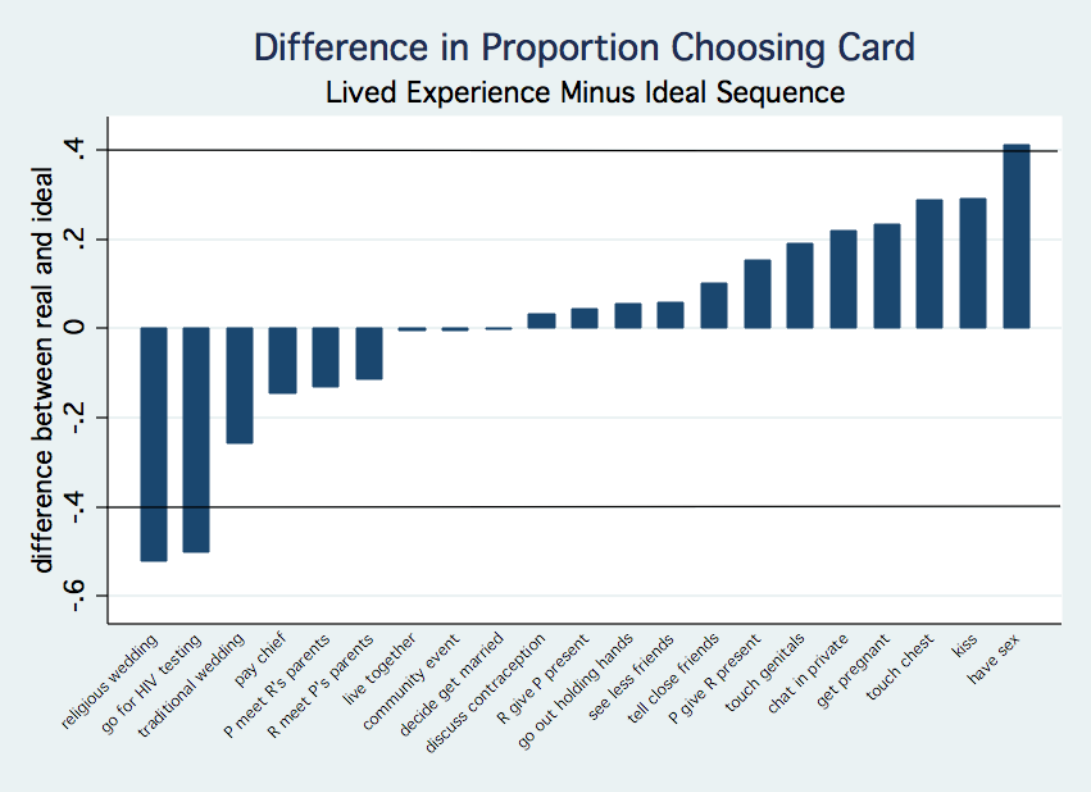


Figure 4

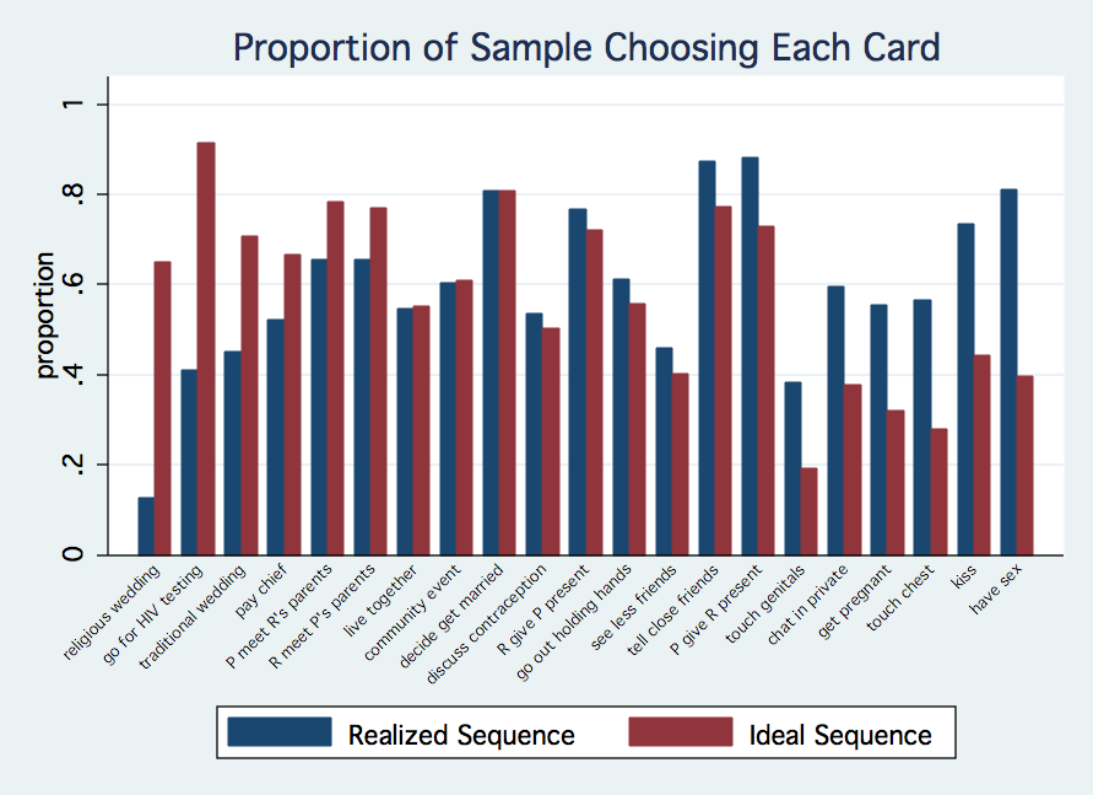


Table 4: Average Rank Order of Cards

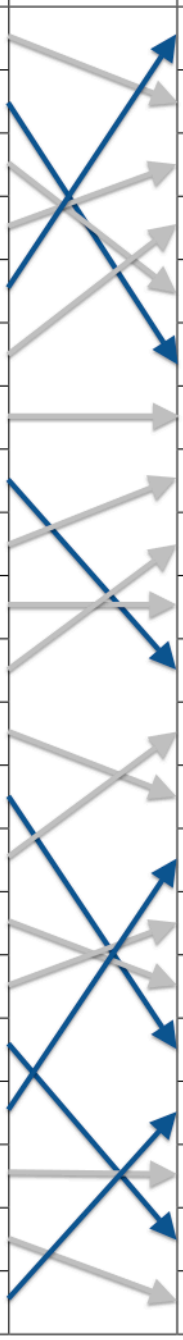
Step	Realized Sequence	Movement	Ideal Sequence
1	We would decide to get married.		We would go for VCT.
2	We would meet somewhere to chat in private.		We would decide to get married.
3	I would tell close friends that we are a couple.		I would meet my partner's parents
4	I would meet my partner's parents.		My partner would meet my parents.
5	We would go for VCT.		I would tell close friends that we are a couple.
6	My partner would meet my parents.		We would meet somewhere to chat in private.
7	My partner would give me a present.		My partner would give me a present.
8	We would go out together alone, holding hands.		I would give my partner a present.
9	I would give my partner a present.		We would pay the chief to register our marriage.
10	We would have a traditional wedding.		We would have a traditional wedding.
11	We would pay the chief to register our marriage.		We would go out together alone, holding hands.
12	We would kiss.		I would see less of my friends to spend more time with my partner.
13	We would have sex.		We would kiss.
14	I would see less of my friends to spend more time with my partner.		We would have a religious wedding.
15	We would start living together.		We would attend a community event together.
16	We would attend a community event together.		We would start living together.
17	We would touch each other's chest, under the shirt.		We would have sex.
18	We would have a religious wedding.		We would talk about contraception.
19	We would touch each other's genitals, under the clothes.		We would touch each other's genitals, under the clothes.
20	[My partner or] I would get pregnant.		We would touch each other's chest, under the shirt.
21	We would talk about contraception.		[My partner or] I would get pregnant.

Table 5: Most Common Responses to the "Regrets" Questions

Type of Change	Add Card	Delete Card	Move Card	No Change
N	524	335	124	521
2 most frequently chosen cards for each type (Percent of N who made that type of change)	*We would have a church wedding.* (35%)	*We would have sex.* (44%)	*We would have sex.* (19%)	
	We would go for HIV testing and counseling (28%)	*We would get pregnant* (14%)	*We would go for HIV testing and counseling* (14%)	

Table 6: Placement of Religious Wedding Card Before Sex Card (N=1190)[14]

	Ideal Sequence		
Realized Sequence	No	Yes	Total
No	43%	49%	91%
Yes	1%	7%	9%
Total	44%	56%	100%

Table 7: Placement of HTC Card Before Sex Card (N=1190)

	Ideal Sequence		
Realized Sequence	No	Yes	Total
No	15%	54%	69%
Yes	3%	28%	31%
Total	18%	82%	100%

[14] For Tables 5 through 9, the sample limited to those who had ever had sexual intercourse and have no missing values for any variables in our regression models, a total of 1190.

Figure 6

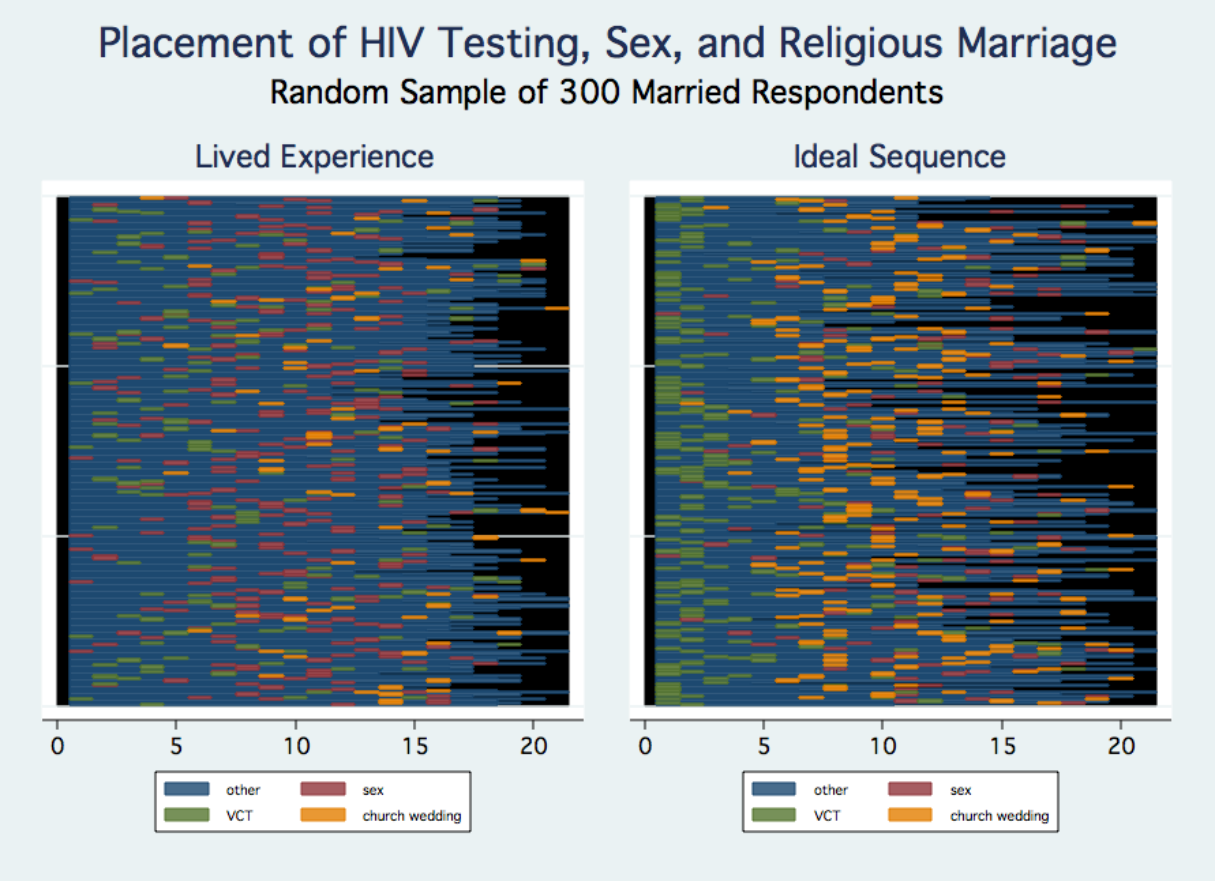

Placement of HIV Testing, Sex, and Religious Marriage
Random Sample of 300 Married Respondents
Lived Experience
Ideal Sequence
0
5
10
15
20
other
sex
VCT
church wedding

Table 8: Descriptive Statistics of Restricted Sample[15]

	Male		Female	
	Mean	SD	Mean	SD
Outcomes of Interest				
HTC before sex in realized and ideal sequence	.24		.29	
Religious wedding before sex in realized and ideal sequence	.06		.08	
Socio-demographic Variables				
N	251		939	
Age	22.16	3.04	22.50	3.05
Never Married	0.21		0.62	
Years of Education	7.43	2.41	7.40	2.57
In School	0.34		0.10	
Employed	0.37		0.34	
Household Goods	2.07	1.17	1.79	1.30
Attends Religious Services:				
Less than Weekly	0.35		0.37	
Weekly	0.49		0.50	
More than Weekly	0.16		0.14	
Attitudes towards Sex and HIV/AIDS				
Agrees with Statement:				
"Sex before marriage is ok if you really love each other."	0.37		0.37	
"People can create AIDS for you."	0.31		0.31	
"Sex with a condom is not sweet."	0.35		0.53	
Likelihood of contracting AIDS from a single unprotected sex act	7.81	2.30	7.67	2.62
"Prevention less important because of ART."				
Strongly Agree	.07		.12	
Agree	.08		.13	
Disagree	.24		.20	
Strongly Disagree	.61		.55	

[15] For Tables 5 through 9, the sample is limited to those who had ever had sexual intercourse and have no missing values for any variables in our regression models, a total of 1190.

Table 9: Logistic Regression Models: Placing Religious Wedding Before Sex in Realized Sequence[16]

	Model 1	Model 2	Model 3
	OR/se	OR/se	OR/se
Male	0.86	0.85	0.76
	(0.27)	(0.27)	(0.27)
Age	1.70 ***	1.65**	1.64 **
	(0.25)	(0.25)	(0.25)
SES	1.35 *	1.33*	1.28 +
	(0.17)	(0.17)	(0.17)
Years of Education	1.12	1.10	1.10
	(0.12)	(0.12)	(0.12)
Occupation			
Subsistence Farming or Unemployed	Ref.	Ref.	Ref.
	---	---	---
In School	0.20 *	0.20*	0.19 *
	(0.15)	(0.15)	(0.14)
Employed	1.02	1.05	1.03
	(0.25)	(0.25)	(0.25)
Attends Religious Services:			
Less than weekly		Ref.	Ref.
		---	---
Weekly		1.08	1.07
		(0.29)	(0.29)
More than weekly		1.99*	1.98 *
		(0.63)	(0.64)
Agrees: Sex before marriage is ok if you love each other.			0.61 +
			(0.16)
Agrees: Religious leaders are hypocrites.			1.43
			(0.59)
LR Test chi^2	41.72 ***	46.99***	52.23 ***
(df)	(6)	(8)	(10)
Pseudo R^2	.07	.08	.09
N	1190	1190	1190

+ p<0.10, * p<0.05, ** p<0.01, *** p<0.001

[16] For Tables 5 through 9, the sample is limited to those who had ever had sexual intercourse and have no missing values for any variables in our regression models, a total of 1190.

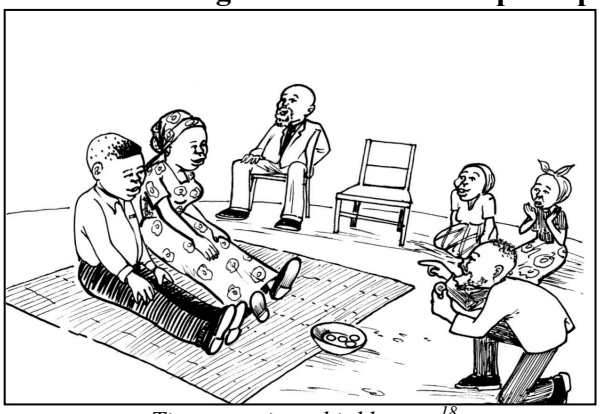
Table 10: Logistic Regression Models: Placing HTC Before Sex in Realized Sequence[17]

	Model 1	Model 2	Model 3
	OR/se	OR/se	OR/se
Male	0.89	0.89	0.84
	(0.16)	(0.16)	(0.15)
Age	1.01	1.00	1.02
	(0.09)	(0.08)	(0.09)
SES	1.23**	1.21*	1.16 +
	(0.09)	(0.09)	(0.09)
Years of Education	1.29***	1.28***	1.20 **
	(0.08)	(0.08)	(0.20)
In School	0.74	0.73	0.72
	(0.20)	(0.20)	(0.20)
Employed	1.34*	1.36*	1.36 *
	(0.20)	(0.20)	(0.20)
Never Married	0.72	0.73	0.66 *
	(0.15)	(0.15)	(.14)
Attends Religious Services:			
Less than weekly		Ref.	Ref.
		---	---
Weekly		1.15	0.12
		(0.17)	(.16)
More than weekly		1.45+	1.48 +
		(0.29)	(0.30)
Agrees: “people can create AIDS for you.”			0.67 **
			(0.09)
Agrees: “sex with a condom is not sweet.”			0.77 +
			(0.12)
Probabilistic Estimate of AIDS Risk			1.20 *
			(0.09)
“Prevention is less important because of ART.”			
Strongly Agree			Ref.

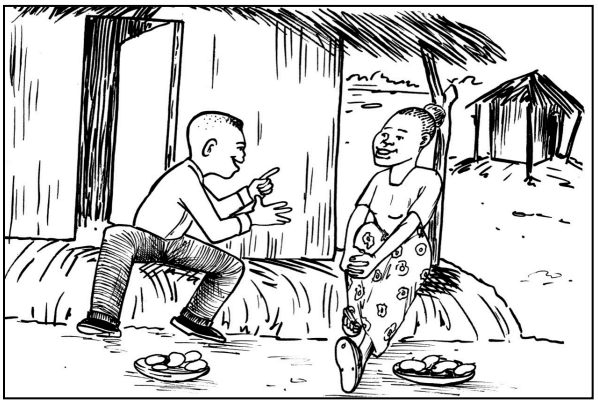
Agree			1.34
			(0.42)
Disagree			1.44
			(0.40)
Strongly Disagree			1.54 +
			(0.39)
LR Test chi^2	48.65***	52.01***	74.01 ***
(df)	(7)	(9)	(15)
Pseudo R^2	.03	.04	.05
N	1190	1190	1190

[17] For Tables 5 through 9, the sample is limited to those who had ever had sexual intercourse and have no missing values for any variables in our regression models, a total of 1190.

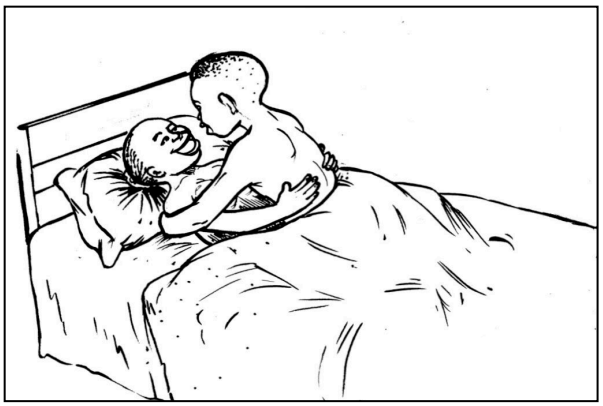
Appendix 1:
Selection of Images from Relationship Script Cards.



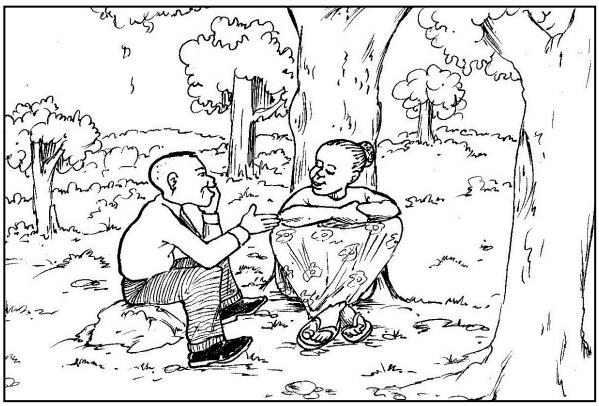
Tingapangitse chinkhoswe.[18]
(We would have a traditional wedding.)



Tingayambe kukhala limodzi.
(We would start living together).

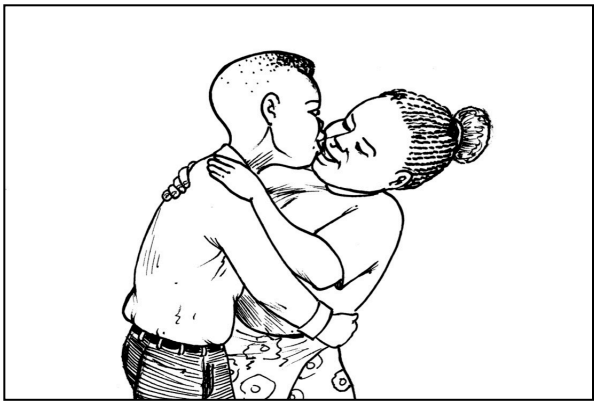


Tingagonane.
(We would have sex.)



Tingakumane pamalo achinsisi kuti tikacheza patokha.
(We would meet somewhere to chat in private.)

Tingwirizani zokwatirana.
(We would decide to get married.)



Tingapsyopsyonani.
(We would kiss.)

[18] Our survey is conducted in Chichewa, the language spoken in Balaka. No English translation appears on the cards.

Appendix 2:
Comparing Respondents who Did and Did Not Select Sex Card for Ideal Sequence

	Did Not Place Sex Card	Placed Sex Card	2 Tailed T-test
	Mean/Proportion (standard error)	Mean/Proportion (standard error)	T Statistic (p)
N	599	905	
Male	0.26 (0.01)	0.29 (0.02)	-1.20 (0.23)
Age	19.90 (0.08)	21.14 (0.13)	7.09*** (0.00)
Never Married	.59 (.01)	.33 (.02)	10.52*** (0.00)
Years of Education	7.37 (0.07)	7.11 (0.10)	2.06* (0.04)
In School	0.41 (0.01)	0.19 (0.02)	9.69*** (0.00)
Socio-economic Status	2.82	2.33	6.09*** (0.00)
Ever had Sex	0.75 (0.01)	0.91 (0.01)	7.46*** (0.00)
Include Religious Wedding in Ideal Sequence***	0.54 (0.02)	0.88 (0.01)	12.63*** (0.00)
Include Pregnancy in Ideal Sequence***	0.02 (.003)	0.78 (0.02)	57.56*** (0.00)
Non-married Respondents Only:			
Probability of getting married in 1 year (out of 10)***	2.41 (0.11)	3.31 (0.20)	4.24*** (0.00)