The Development of Trust and Commitment among Sexual Partners in Tanzania: the Roles of Social Exchange and Identity

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Abstract

How do young adults form trusting and committed relationships when the potential costs of a partner breaking one's trust and commitment include the possibility of HIV infection along with the emotional and psychological costs? In sub-Saharan Africa, individuals must manage their risk of infection, along with the emotional and psychological risks, while they search for a spouse. This paper begins by recognizing the contribution of exchange theories in explaining sexual relations, yet suggests that additional insight can be found by diversifying the theoretical models used. I use data from a household-based survey of 816 youth in relationships in Tanzania to test the fit of three theoretical models—equity, investment and identity— in explaining the development of trust and commitment. While all three theories offer insight into sexual relationships, the data are most consistent with the identity theory model for the development of trust and commitment among young adults in Tanzania.

Trust and commitment play a complex but critical role in fidelity and condom use, the two ways to avoid contracting HIV through sexual intercourse. While trust in and commitment to one's partner are often barriers to condom use (Agha, Kusanthan, Longfield, Klein, and Berman 2002), they are likely prerequisites for long-term fidelity. Despite their likely role in AIDS prevention, little research on trust and commitment between sexual partners has been conducted in sub-Saharan Africa, the region where the epidemic is most severe. The predominant model used to describe sexual behavior in sub-Saharan Africa stems from writing on the "African sexual system" (Caldwell, Caldwell, and Quiggin 1989) emphasizing the role of transactions in initiating and sustaining sexual relations. The link between sex and resources in sub-Saharan Africa is often framed as operating through women's need for resources, however these exchanges often take on a more important symbolic value than the actual value of the resources exchanged. Ultimately, while many people report exchanging gifts with sexual partners, most do not report ever having received gifts or money in exchange for sex (even after taking into account underreporting). That most individuals do not report ever having exchanged money and sex suggests that the symbolic nature of gift-giving may be more central than the resource-exchange nature of the act. This suggests that while exchange-based theories of sexual behavior will describe a substantial proportion of behavior, there remains a large proportion of behavior that may be described by different models of sexual behavior. This paper uses data from 816 young adults in relationships in Tanzania to ask: can the complementary theories of social exchange (equity theory and investment theory) and identity, developed in a western context, explain the development of trust and commitment between sexual partners in Tanzania?

With no cure or vaccine available, young adults, often defined as those aged 15 to 24, are an important target group for HIV prevention in sub-Saharan Africa due to their relatively low rates of HIV infection, particularly at the beginning of adolescence. Additionally, young people make up a large portion of the population. In Tanzania, the country where this study was conducted, half of the population is under age 15 (47 percent, National Bureau of Statistics (NBS) [Tanzania] and ORC Macro 2005). Age-specific HIV prevalence in Tanzania doubles from an estimated 2.1 percent of those aged 15 to 19 to 5.2 percent of those aged 20 to 24 ((TACAIDS), (NBS), and Macro 2005), peaking at 10.8 percent of those aged 30 to 44 years old.

For young adults in sub-Saharan Africa, the main reason individuals report not using condoms is because they trust their partner (Agha et al. 2002; Plummer, Wight, Wamoyi, Mshana,

Hayes, and Ross 2006). Focus group discussions on the meaning of trust and how trust interferes with condom use among young adults in various urban centers in the region, including discussions in Tanzania, suggest that young people refer to a partner's general characteristics and behaviors to determine whether a partner is deserving of their sexual trust (Longfield, Klein, and Berman 2002). A generalized interpersonal trust in one's partner reduces the feelings of risk despite not knowing a partner's sexual history or HIV status. Partners feel safe because they generally "trust" that their partner has goodwill toward them and would not intentionally infect them. While the potential costs of broken trust and commitment in sub-Saharan Africa include many of the same emotional and psychological costs individuals face in Western contexts, in addition there is a true risk of the health costs of HIV infection. In a context where marriage is nearly universal and an important element in the transition to adulthood, individuals must manage their risk of infection while they search for a spouse.

In this high-risk context I seek to understand how individuals come to trust and be committed to each other. I explore the relationship between trust and commitment using exchange theory and identity theory. A household-based survey provides the empirical basis for testing my hypotheses about the relationship between the elements of trust and commitment. This research builds upon other elements of the project not reported here, specifically in-depth interviews conducted before and after the quantitative survey, to improve our understanding of the relationship between trust and commitment in a region where such constructs have policy implications that will impact young people's lives. The results reveal an important role for identity in trust and committment: having one's identity verified by a partner is associated with more positive self-feelings, trust, and commitment.

BACKGROUND AND SIGNIFICANCE

With a reported median age at first sex of 17.6 years for Tanzanian women aged 25 to 29 and of 18.6 for Tanzanian men aged 25 to 29 ((TACAIDS), (NBS), and Macro 2005), many young adults no longer rely on abstinence to prevent HIV infection. There is approximately a two-year difference between the median age at first sex and the median age at first marriage for women and a five-year difference for men, with a median age at first marriage of 19.1 for women aged 25 to 29 and 23.8 for men aged 25 to 29. Similar to elsewhere in the developing world, marriage in sub-Saharan Africa is changing rapidly from having the parents and kin heavily involved in the marriage

process to a process where individuals largely select their own spouse. Traditional marriages in sub-Saharan Africa have often been described as having substantial distance between spouses, with spouses not identifying with each other's aspirations or interests, continuing to regard each other as strangers, and highly differentiated responsibilities exchanged within the marital union (Omari 1960; Paulme 1963)(Caldwell, Caldwell, and Quiggin 1989). In contrast, the characteristics of modern marriage include an emphasis on individual choice, romantic love, monogamy, and the importance of the couple-relationship above relationships with other kin (Smith 2007). This shift from weaker conjugal relationships toward stronger conjugal relationships is critical to consider when modeling sexual relationships and may point to needing to consider theoretical perspectives that have not previously been used in the region.

Theoretical Perspectives on Trust and Commitment

Researchers often hesitate to use Western theories in the African context. However, various social psychological models have proven effective predictors of behavior in sub-Saharan Africa, when adapted to the local context. Social exchange principles often inform the analysis of sexual behavior in sub-Saharan Africa, which, on the most basic level assumes that women possess sexual resources which they exchange for men's material resources. For example, exchange principles highlighted the importance of Cameroonian young women's status characteristics and the specific benefits men offer in influencing young women's perceived ability to refuse sex (Hattori and DeRose 2008). In Kenya the negative impact of migrants' nonmarital partnerships on their remittances to their families in rural areas is increased when the nonmarital partner provides an important benefit—psychosocial support (Luke 2010). In rural Malawi, men derive pride from providing for their partners and both men and women view the exchanges as symbols of love and commitment (Poulin 2007). To a lesser extent, research in the region has included a focus on social identities. Campbell (1997) demonstrates how the construction of masculine identities by gold miners in the Johannesburg area leaves them vulnerable for HIV infection. Silberschmidt (2001) outlines how the increasing difficulties with which men are able to enact the male identity in Dar es Salaam, Tanzania influence men's self-esteem and multiple partnerships.

In designing this study, I used information from qualitative and cognitive interviews I conducted prior to the household-based survey to adapt three theoretical models and their measurements to the local context. Three dominant social psychological perspectives that address

trust and commitment guide this analysis: two perspectives based in social exchange theory (Homans 1961; Leik and Leik 1977; Sprecher 1988; Sprecher 2001) and one perspective based in identity theory (Burke and Stets 1999).

Social Exchange Theories: Equity and Investment Theories

Social exchange includes the exchange of material goods, services, emotion, or behavior with another individual (Molm, Takahashi, and Peterson 2000). As mentioned above, the basic tenants of this theory have been widely used to inform the study of sexual behavior in sub-Saharan Africa. However, the role of trust and commitment in sexual exchanges has yet to be fully investigated in this context. Work on the development of commitment in exchange relationships in the western context can be divided into two categories: those focusing on the equity of the exchange (distributive justice, e.g., (Sprecher 1986; Walster (Hatfield), Walster, and Berscheid 1978) and those focusing on investments in the exchange relationship (interdependence theory, e.g., (Kelley and Thibault 1978; Rusbult 1983).

The equity branch of exchange theory focuses on the individual's perception of their contributions and rewards compared with their partner's contributions and rewards (see figure 1a). If an individual believes that they are receiving more rewards or contributing less than their partner, then the individual is overbenefiting (Sprecher 2001). Conversely, if an individual believes that they are receiving fewer rewards or contributing more than their partner than the individual is underbenefiting. Both states of inequity have been theorized to lead to distress, lower satisfaction, and lower commitment. However, analyses have found only underbenefiting inequity to be associated with lower satisfaction and commitment.

[Figure 1 about here]

The second area of theory on commitment in exchange relations is investment theory (see figure 1b). Investment theory suggests that satisfaction and the availability of alternatives—as described in interdependence theory—cannot sufficiently explain the persistence of relationships without taking investments into account (Rusbult, Martz, and Agnew 1998). Specifically, the more an individual has invested in the relationship that would be lost were the relationship to end, the greater the costs of ending the relationship and the greater the individual's dependence on the relationship. Investments can include resources such as time, mutual friends, identity, or children. In investment theory, commitment is seen as an "allegiance to the source of dependence" (Rusbult,

Martz, and Agnew 1998: 360) with committed individuals more likely to remain in their relationship. In the theoretical model, satisfaction and investments are positively related to commitment, while comparison level of alternatives is negatively related to commitment.

Equity theory and investment theory each contains a notion of comparison: in equity theory the basis of comparison is one's partner, in investment theory the basis of comparison is what one expects from one's partner. Both view satisfaction as an important mechanism through which social exchange variables influence commitment. While not explicit in either equity or investment theories, trust or a lack of trust likely plays a role in both models. Trust—the expectation that a partner will behave benignly (Molm et al. 2000: 1402)—allows the individual to look for long-term costs, rewards, and balance of benefits between partners when evaluating satisfaction. Further, trust has yet to be developed with an alternative partner, which increases the cost of changing partners relative to remaining with a trusted partner. While neither equity theory nor investment theory explicitly includes trust in the model of the development of commitment, trust in a partner likely develops as the exchange relationship continues.

Identity Theory

There are two traditions of identity theory at the individual level in sociological social psychology (Stryker and Burke 2000). The first, Stryker's identity theory, aims to explain why individuals perform one role instead of another role when there is more than one role expectation in a given situation. The second identity theory, put forward by Burke and his colleagues, focuses on the internalized meanings associated with identities and how others verify an individual's set of meanings. Stryker and Burke's identity theories complement one another, with Stryker's identity theory looking to how social structure influences identity and Burke's shedding light on how identity influences social structures This analysis focuses on Burke and colleagues' identity theory: how the process of self-verification informs the development of trust and commitment between individuals.

In contrast with the social exchange based perspective of trust and commitment, Burke and Stets (1999) view trust as an important factor influencing commitment.

A major strength of Burke and colleagues' model is that the model views identity as a process. This process has four components: 1) an identity standard or set of meanings, 2) input from the environment or situation (including reflected appraisals and appraisals from others), 3) a process

that compares the meanings and the input from the environment or situation, and 4) an output of meaningful behavior (Burke 1991; Burke 1997; Stryker and Burke 2000). Self-verification is a cognitive process where the individual compares their identity standard in a situation to the input from others, the environment, or situation. If there is incongruence between an individual's identity standard and the input received, individuals modify their behavior to change the input received in order to bring that input into congruence with their identity standard. Although self-verification appears largely cognitive, the process has both cognitive and emotional responses. The emotional responses to self-verification by a partner are theorized to influence levels of trust, commitment, emotional attachment, and group orientation (see figure 3). When the individual receives verification, the individual begins to see the other as predictable and dependable, which in turn leads directly to trust in and dependence on the other. Further, when an identity is verified the individual will have an increase in positive self-feelings. When the identity is not verified, the individual will have a decrease in trust and an increase in negative self-feelings.

[Figure 3 about here]

Trusting another individual involves risk-taking. Individuals with greater levels of positive self-feelings are more likely to be willing to extend trust to another because they are more likely to feel they can overcome the potential costs of broken trust. Positive self-feelings from the self-verification process should result in an increase in trust in the other who has verified the individual's identity and negative self-feelings should result in a decrease in trust in the other who has failed to verify the individual's identity. Positive self-feelings operate through trust to contribute to the development of committed relationships, positive emotional attachments, and a group orientation.

Subgroup differences in Social Exchange Theories and Identity Theory

Although all three theoretical models frequently use marital couples to test their theories, all three fail to explicitly incorporate gender or other status and background characteristics in their discussions of development of trust and commitment. However, it is possible to anticipate the role of gender norms in each of the models. In Tanzania there are considerable gender differences in power and access to resources, and these differences are likely to influence the development of trust and commitment. Sex-based power differentials between partners may influence interactions

between partners through different mechanisms in each theoretical perspective considered in this research.

Equity refers to the individual's perception of their contributions and rewards compared with those of their partner, with equity the ideal state for the development of commitment. However, it may be legitimate for men to overbenefit from their relationships with their wives in a strongly patriarchal society. If this is the case then the relationship between the variables in equity theory may operate differently for men than for women in Tanzania. Men who overbenefit and women who underbenefit may not experience distress from their states of inequity. Conversely, women who overbenefit and men who underbenefit may experience greater levels of distress from their states of inequity in Tanzania than has been found in studies conducted in the United States.

Further, in the equity framework, men's advantage in terms of their structural power influences their exchanges with women by altering the perceived value of the resources that they provide in the exchange (Thye 2000). The resources that men, who are of higher status than women in Tanzania, possess will be perceived to be more valuable than the resources that women possess. Although exchanges involving individuals of the same sex would be perceived to be equitably benefiting from the relationship, in male-female exchanges with exactly the same exchange terms, the male would be perceived to be underbenefiting due to the additional value that his male status confers on the resources he brings.

According to investment theory, satisfaction and investments are positively related to commitment, while the comparison level of alternatives is negatively related to commitment. However, the fulfillment of ones needs, the alternatives to the relationship, and the investments individuals make in their relationship likely differ for men and women. Given men's greater access to resources, women may be more dependent on relationships with men to fulfill their needs than men are on relationships with women to fulfill their needs. For example, while a woman's access to a resource such as land is often dependent on her relationship with a man, a man's access to land is not dependent on his relationship with a woman. While men can fulfill their need for access to land while in a relationship with a woman or while single, women may not be able to fulfill their need for access to land unless they are in a relationship, increasing their dependence on relationships.

Operating in the investment theory framework and returning to the notion that the resources that men possess will be perceived to be more valuable than the resources women possess, men and women may have different levels of expectations for their partner to fulfillment their needs. Since

men's resources are likely to be perceived as higher value, women may expect less from men than men expect from women. As the comparator determining an individual's satisfaction in investment theory is an individual's expectations for themselves, women's expectations may be more easily met than men's, which would lead to higher levels of commitment among women.

Turning to the third theoretical framework—identity theory—Tanzanian women may be more likely to value and respect the opinions of their male partners than Tanzanian men are to value and respect the opinions of their female partners. Such a differential in the valuation and credibility of the other would lead to male partners being more important "significant others" to women than female partners would be to men (Rosenburg 1986). If this is the case, verification from one's partner may have a stronger effect for women than for men.

Individuals seek relationships that verify their identities and men may have a greater ability to select relationships that allow for self-verification than women, due to the greater variety of relationships that men are allowed. Further, as marriage is an important status marker for women and divorce is often more difficult for women in Tanzania than for men, women may be forced to enter or remain in relationships with partners who do not verify their identities. In the short-term, women may experience less positive self-emotions and more negative self-emotions. Over time, this may result in slow changes in the meaning that women attach to their identities so that the meanings more closely resemble those that their male partners hold for them.

Men have a greater ability to engage partners other than their main partner to verify their masculine identities than women. Economic changes in Tanzania have made it more difficult for men to fulfill their social role of providing for the material needs of their families (Silberschmidt 2001). Relationships with women other than their wives have been cited as a source of relaxation and comfort to men who feel a decreased self-esteem due to their economic hardships. Men's greater freedom to seek alternative partners increases their opportunities to have their identities verified compared with women's opportunities.

Gender norms are likely to influence the level of effort that the individual and their partner expect of the individual for various activities. However, if an individual's spouse is of higher status than the individual, then the individual's self-views and the individual's view of the spouse are influenced by the spouse (Cast, Stets, and Burke 1999). Higher status individuals appear to be able to resist the influence of lower status partners on their self-views. Given this ability of higher status individuals to influence their partners, higher status individuals may attain greater self-verification

(Cast et al. 1999). Although there has been no evidence of gender differences in the influence of one spouse in the other spouse's self-views in the U.S., the degree of gender inequality in Tanzania may result in gender differences in an individual's ability to influence the other's self-views and in turn, self-verification.

These complementary theoretical perspectives of social exchange and identity theory allow the conceptualization of relationships as involving conflict, negotiation, and altruism while the relationship evolves and individuals seek out self-verification and the resources necessary for verification. The additional insight these perspectives provide, in terms of understanding the development of trust and commitment as well as the consequences of trust and commitment once established—in terms of fidelity and condom use—are explored in this analysis.

METHODS

Setting

This study was conducted in the East African country of Tanzania. The survey data stem from Population Services International (PSI)/Tanzania's nationally representative Tracking Results Continuously (TRaC) survey. Tanzania is predominantly Christian, although a substantial proportion is Muslim (30%). The proportion of the population that is Muslim varies by region, with larger Muslim populations in coastal regions, including Dar es Salaam. Tanzania has many relatively small ethnic groups, each with its own language. Most Tanzanians speak the language of their village in the home, and use Swahili in the early years of their education, for commerce, and in lower levels of government. Swahili is the lingua franca and, along with English, an official language of Tanzania. The survey interviews were conducted in Swahili by a team of Tanzanian interviewers recruited in Dar es Salaam.

The household survey included a random sample of 2094 men and women aged 15 to 24 residing in Tanzania, and was conducted by PSI/Tanzania. PSI used a three-stage sampling design. First, administrative regions were selected. By design, 70 percent of the wards were selected from rural areas and 30 percent of the wards were selected from urban areas. Next, enumeration areas were selected in each selected ward or branch. Households were selected in the final stage. Within each enumeration area, the interviewers were instructed to begin at the center of the village (by choosing a landmark) and to spin a bottle. The interviewer walked 200 steps (or 100 if the village was particularly small) and then turned around to face the landmark. The interviewer took note of

the date and used the date to determine the number of houses that they will count before selecting the first household. For example, if the date was the 25, the interviewer began by interviewing the 5th house from their location, headed back towards the landmark. If a member of that household qualified for an interview (was aged 15 to 24), and was present, the interview was conducted. In the case where more than one youth in a household was eligible for participation in the survey, the interviewer used the last birthday method to determine which youth in the household to interview. If the selected member of a household was not present at the time, the interviewer noted the location of the household and made an appointment to return to the household. After each interview, the interviewer was instructed to go three houses away and inquire if there is a youth aged 15 to 24 in the household. Interviewers returned to the house up to three times in order to interview a selected respondent. If the interviewer reached the end of a road or path and has the option to turn left or right to select a new household, the interviewer always turned left. PSI/Tanzania had a targeted sample size of approximately 2000 respondents aged 15 to 24. A total of 2094 individuals were interviewed. Written informed consent was obtained from the respondent. For respondents under age 18, written informed consent was obtained from both the respondent and the household head.

Given my interest in understanding interactions between romantic partners, this analysis was restricted to the 816 young adults with current partners. I restricted analysis to this group because I am interested in the interaction currently taking place between partners. Additionally, partners who have terminated a relationship are likely to be biased in their response to questions about their past relationships. Nonetheless, studying only those with a current partner biases the results. Individuals who do not have partners are likely to be different from those with partners. Further, individuals who do not want to tell us about their partners are likely to report that they do not have partners. Individuals who do not want to tell us about their partners are likely different from those who are more willing to discuss their partnerships.

Measures

The questionnaire gathered background information from respondents, including demographic and socioeconomic data. The survey also included add-on modules related to trust and commitment. These modules were introduced by explaining to the respondent that we would like to ask them about their sexual partners, and that we were most interested in having them discussing the person that they felt was their main partner.

Each of the modules related to trust and commitment used measures adapted from past research conducted in developed countries. The translator from the first round of in-depth interviewers, a native Swahili speaker, translated these modules from English into Swahili. The translator was instructed to prioritize translating the concepts of the question over translating the questions literally (for methods of translating survey questions see International Quality of Life Assessment (IQOLA) Project 2006). The translated modules were pretested in Mtoni through cognitive interviews at the end of the in-depth interviews. Over the course of the cognitive interviews, these modules were refined and retested to ensure the appropriateness and comprehension of each question as it related to measuring the desired concept.

Consistent with past research on social exchange, I measured investments, equity, comparison level of alternatives, and relationship satisfaction. Equity was measured by asking participants to indicate if each of resource exchange was fair or unfair.[i] Four of the five resource areas are based on Foa and Foa's (1974) classification of resources (love, status, money, and material goods). Based on the pretesting, I replaced Foa and Foa's categories of services and information with the more general term "help". If the respondent indicated that they were giving more or getting less in an exchange, then they were classified as underbenefitting; if they were giving less or getting more then they were overbenefitting. Respondents who reported that they did not know whether they were overbenefiting or underbenefiting on a resource were considered to neither perceive to be overbenefiting nor underbenefiting in that resource. Consistent with past research (see Sprecher 1986; Sprecher 2001), I created an underbenefitting and an overbenefitting indicator for each resource. Preliminary factor analyses showed that areas of overbenefitting and underbenefitting factor into two dimensions: emotional (love and respect) and instrumental (money, goods, help).

Consistent with Rusbult and colleagues' research (1998) on the role of investments in relationship commitment, investments were measured by asking respondents to what extent they agree or disagree with statements about their relationship,[ii] on a four-point scale ranging from "don't agree at all" to "agree completely."[iii] Statements address the respondents' perceptions that they have invested various resources in their relationship that they either would lose if the relationship ended or that they would find difficult to replace. The resources include time, memories, sense of identity, and social ties.

Comparison level of alternatives is measured by items capturing the individual's perception of the quality and likelihood of alternative means of having various needs fulfilled and the quality and likelihood of alternative partners on a four-point scale (Rusbult et al. 1998).[iv] The comparison level of alternatives score is represented by the mean of the responses for the items, with higher scores representing better and more likely alternatives.

The questionnaire included the ten statements used by Rusbult and colleagues to measure relationship satisfaction (1998; Sprecher 2001). The scale includes statements about how well the respondent's partner fulfills the respondent's needs for intimacy, companionship, security, and emotional involvement as well as general statements about the respondent's satisfaction with their partner.[v] An individual's relationship satisfaction score is the mean of the responses to the ten items in the scale. Preliminary factor analyses showed that relationship satisfaction factored into two dimensions: satisfaction with needs (knowing someone understands you, being in a serious relationship, feeling close with someone, sex) and general satisfaction (feeling satisfied in the relationship, relationship makes you happy).

Although Burke and Stets (1999) measured self-verification largely based on instrumental activities, they suggested future research include emotional activities, such as providing emotional support. Our questionnaire included emotional items adapted from the Areas of Change Questionnaire (Weiss, Hops, and Patterson 1973; Mead, Vatcher, Wyne, and Roberts 1990; Douglass and Douglass 1995; Child Trends 2003) in addition to the items used by Burke and Stets (1999; Stets and Burke 2005). The final list of activities included was informed by in-depth interviews conducted prior to the survey. The use activities performed in a role is particularly appropriate given that Tanzanians consider that an individual's character or nature (*tabia*, discussed below) can be most clearly understood by watching the individual's behavior (Setel 1999).

Self-verification was measured by asking respondents about the extent to which they feel they should engage in a partner role activity (on a scale of 1-4), and the degree to which they think their partner thinks they should engage in the activity (on a scale of 1-4), consistent with previous research (Burke and Stets1999). The difference in an individual's own feelings about the extent that they should engage in a partner role activity and the individual's perception of their partner's feelings were calculated for each activity. Each respondent's average difference across the activities was calculated and then reverse coded to create a self-verification index such that scores range from 0, indicating no agreement or self-verification, to 5, indicating perfect agreement and verification of

the identity. Preliminary factor analyses showed that the following activities factor into a single underlying dimension: showing appreciation for the things the partner does well, for making sure that the couple has sex, for financial support, and for helping with the partner's problems.[vi]

Two self-feelings are assessed in this study: self-esteem and depression. Self-esteem was measured using items from the Rosenberg self-esteem scale (Rosenberg 1989).[vii] Factor analysis showed that four of the items did not load onto one factor, and these were consequently eliminated from the self-esteem index.[viii] The second self-feeling, depression, was measured using the Center for Epidemiological Studies Short Depression Scale (CES-D 10) (Radloff 1977).[ix] Factor analysis revealed that two items—feeling that everything was an effort and feeling unable to motivate oneself—did not load on one factor and were eliminated. Further, the factor analysis showed that feeling hopeful about the future loaded into the factors for self-esteem, trust, commitment, and self-verification. As a result, this item was excluded from the analysis.

Trust was measured through a series of statements developed by Larzelere and Huston (1980: 599).[x] Respondents were asked to indicate the degree to which they agreed or disagreed with the statements on a four-point scale. Preliminary factor analysis showed that two items—feeling that a partner is primarily interested in his/her own well-being and feeling that there are times when the partner cannot be trusted— did not load into one factor and were eliminated from the measure. The measure of commitment was derived from research in social exchange and identity theories (Burke and Stets 1999; Sprecher 2001) and included measures of subjective commitment.[xi] Respondents were asked to indicate the degree to which they agreed or disagreed with the statements on a four-point scale.[xii] Exploratory factor analysis showed that one item—whether it is likely that the respondent will pursue or accept someone other than the primary partner within the next year— did not load into the factor with the other items and was excluded.

Analysis

I use the statistical software package M-plus to estimate the structural equation models presented in figures 1, 2 and 3. The development of trust and commitment are modeled using data from PSI's household survey of Tanzanian youth aged 15 to 24. In this household survey sampling was conducted at the individual level without recruiting relationship partners. The unit of analysis in this section is the individual, and I focus on individuals' reports of their own self-feelings, their perceived equity in their relationship, satisfaction with their relationship, investments in their

relationship, perceived alternatives to their relationship, their perceptions of activities they should perform, and their perceptions of what activities they think that their partner expects of them. The measures used to indicate each of these self-feelings or perceptions were adapted and refined based on in-depth interviews and cognitive interviews conducted at the end of the in-depth interviews in Dar es Salaam. Additionally, before these elements were included in the questionnaire, I reviewed the in-depth interviews to assess if the elements in the proposed questionnaire played a role in the youths' understanding of relationship development. All of the elements in the models were addressed during the in-depth interviews in youths' discussions of their relationships.

Exploratory factor analysis of the survey data was conducted to determine the items included in the model.[xiii] In all models, I control for a variety of social and demographic characteristics. These characteristics include sex (male, reference group is female), age (20-24 years, reference group is 15-19 years), level of education, socioeconomic status, urban residence (urban, reference group is rural), religion (Muslim, reference group is Christian or none), reported health status,[xiv] and marital status (married, reference group is not married). The respondent's level of education was classified as low if the respondent reported no education (6%, not shown) or that they did not complete primary school (13%, not shown), average if they reported that they completed primary school (62%), and high if they reached secondary school or higher (19%). A series of dichotomous variables indicates if the respondent had a low level of education or if the respondent had a high level of education (reference group is average, completed primary school). Respondents' socioeconomic status is measured using an index of household assets and amenities. The respondents were rank ordered by score and grouped into the three approximately equal categories of low, average, and high socioeconomic status.[xv] In this analysis, dichotomous variables indicate if the respondent was of low socioeconomic status and if the respondent was of high socioeconomic status (reference group is average).

I begin the analysis of the survey data by examining the means and standard deviations of the variables in identity theory by sex, level of education, socioeconomic status, and rural/urban residence (See Appendix B: Table 2). Next, I tested the assumption that the effects of the variables in the model were the same for female and male respondents. To compare the effects, I tested if the covariance matrices were different for females than they were for males using M-plus. In the absence of significantly different covariance matrices for females and males (not shown), I do not estimate models separately by sex.

Finally, I estimated the models represented in Figures 1, 2 and 3 using the statistical software package, M-plus. The standardized estimates are presented in Table 3, with the standardized estimates standardized based on the variable's variance. The standardized estimates allow me to assess the extent to which the three models are supported by the data. As these data are not longitudinal, causality cannot be asserted. However, the results may either be consistent or inconsistent with the theoretical model that supposes that one variable causes a change in another. For the data to have a satisfactory fit with the proposed model, a combination of two indices should meet specific guidelines: the Comparative Fit Index (CFI) should be greater than or equal to 0.90 and Standardized Root Mean Squared Residual (SRMR) should be less than or equal to 0.10; or the Root Mean Squared Error of Approximation (RMSEA) should be less than or equal to 0.08 and SRMR should be less than or equal to 0.10 (Hu and Bentler 1999; Kline 2005). The indices of model fit for the equity theory suggest satisfactory data-model fit with a CFI of 0.985 and an SRMR of 0.015. The investment theory model is just-identified and data-model fit indices cannot be calculated[xvi]. Finally, the indices of model fit for the identity theory suggest satisfactory data-model fit with a CFI of 0.946 and an SRMR of 0.015.

Sample characteristics

Relationship characteristics

There were no significant differences in the levels of self-verification, trust, or commitment by sex, socioeconomic status, education, or residence (see Table 2). Female respondents indicated higher levels of investments in their relationships than male respondents (2.97 compared with the mean for males of 2.88 on a scale of 1 to 4, $p < 0.01$). Male respondents were more likely to indicate that they were underbenefiting (0.22 compared with the mean for females of 0.10 on a scale of 0 to 1, $p < 0.01$) and less likely to indicate that they were overbenefiting (0.07 compared with the mean for females of 0.19 on a scale of 0 to 1, $p < 0.01$).

Few characteristics of the relationship differed significantly by socioeconomic status, education, or location. Unexpectedly, the availability of potential alternative partners or means of having various needs fulfilled was reported to be higher among respondents from rural areas (2.44 compared with the mean for urban respondents of 2.30 on a scale of 1 to 4, $p < 0.05$). Satisfaction in one's relationship with one's main partner was higher among respondents of higher socioeconomic

status (ranging from a mean of 3.26 for respondents of low socioeconomic status to 3.37 for respondents of high socioeconomic status, p<0.05).

Table 2 about here

Self-feelings

While there were no differences in feelings of self-esteem by sex or residence, self-esteem was higher among respondents of higher socioeconomic status (ranging from a mean of 2.972 for respondents of low socioeconomic status to 3.109 for respondents of high socioeconomic status, p<0.01) and higher among respondents who had attained higher levels of education (ranging from a mean of 2.986 for respondents with no education or incomplete primary schooling to 3.119 for respondents with secondary or higher education, p<0.01). Female respondents reported higher levels of depression than male respondents (1.721 compared with 1.644, p<0.05). There were, however, no differences in depression by socioeconomic status, education, or residence.

RESULTS

Equity theory

[Basically - Only overbenefitting in instrumental exchanges leads to less of all three types of distress (wrong direction, but it might be because the instrumental things are so important—context of extreme poverty?), but only life distress leads to less commitment.]

Investment theory

Table 4 about here

Identity Theory

Table 3 shows that, consistent with the theory, self-verification is associated with higher levels of self-esteem and lower levels of depression, controlling for respondents' sex, age, religion, marital status, urban residence, level of education, and reported health status. For each standard deviation increase in indicating one's main partner verifies one's identity, there was a 0.100 standard deviation increase in self-esteem (p<0.01). Conversely, for each standard deviation increase in indicating one's main partner verifies one's identity, there was a decrease of a 0.137

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standard deviation in depression (p<0.01). Both of these self-feelings had the hypothesized

relationship with trust. A standard deviation increase in self-esteem is associated with a 0.142

standard deviation increase in trust (p<0.01). A standard deviation increase in depression is

associated with a 0.131 standard deviation decrease in trust (p<0.01). These findings confirm the

hypothesized direct and indirect relationships between self-verification and trust. A standard

deviation increase in self-verification is directly associated with a 0.123 standard deviation increase

in trust (p<0.01). Both indirect relationships between self-verification and trust, the first through

self-esteem and the second through depression, were significant. A standard deviation increase in

self-verification is associated with a 0.014 standard deviation increase (not shown, p<0.05) in trust

through the positive relationship that self-verification has with self-esteem and the positive

relationship between self-esteem and trust. Similarly, a standard deviation increase in self-

verification is associated with a 0.018 standard deviation increase (not shown, p<0.01) in trust

through the negative relationship that self-verification has with depression, and the negative

relationship between depression and trust.

<center>*Table 3 about here*</center>

Trust has the hypothesized positive association with commitment. A standard deviation

increase in trust in one's main partner is associated with a 0.505 standard deviation increase

(p<0.01) in commitment to that partner. Ultimately, self-verification by the respondent's main

partner has a significant relationship with commitment to that partner through two paths: through

trust and through self-feelings and trust. Specifically, an increase in self-verification is associated

with an increase in commitment indirectly through the relationship that self-verification has with

trust and the relationship between trust and commitment (0.062, p<0.01). Additionally, an increase

in self-verification is associated with in increase in commitment indirectly through the relationship

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that self-verification has with trust through self-feelings and the relationship between trust and

commitment (0.007, p<0.05 through self-esteem and 0.009, p<0.01 through depression).

Ultimately, the structural relationships in the identity model of trust and commitment are

consistent with those hypothesized by the theory, controlling for respondents' sex, age, religion,

marital status, urban residence, level of education, and reported health status. The findings suggest

that identity theory may be a useful tool to capture accurate descriptions of the development of trust

and commitment among young adults in Tanzania.

DISCUSSION

Model comparisons

According to investment theory, satisfaction and the availability of alternatives cannot
sufficiently explain commitment to a relationship (Rusbult et al. 1998). Investment theory suggests
that the more one has invested in a relationship, the greater the costs of ending the relationship and
the greater the individual's dependence on the relationship. As expected, relationship satisfaction
had a positive relationship with commitment and the availability of alternatives had a negative
relationship with commitment. However, the results are not consistent with a theoretical model in
which the level of investments in a relationship has a substantial role in relationship commitment:
the relationship between investments and commitment was not statistically significant (p=0.20).

The identity theory model is substantially more complex than the investment theory model.
With the exception of the direct relationship between self-verification and trust, the structural
relationships in the identity theory model are as hypothesized by the theory. The direct relationship
between self-verification and trust is in the hypothesized direction, yet fails to meet the standards
for statistical significance (p=0.09). However, when we estimated the model with mastery and
depression (not shown), the direct relationship between self-verification and trust is statistically
significant (p<0.05). *Taken together, the findings suggest that identity theory is the theoretical
model tested in this analysis that may represent an accurate description of the development of trust
and commitment among young adults in Tanzania.*

*As discussed above, all three theoretical models fail to explicitly incorporate gender in their
discussions of development of trust and commitment. Prior to estimating each of the theoretical
models, we tested for whether the effects in the models were significantly different for female
respondents than they were for male respondents. While we did not find statistically significant
differences in the investment theory model or the identity theory model, the covariance matrices for
the equity model differed by sex. Further, among females there was poor data-model fit for the*

equity model, yet marginally acceptable data-model fit among males. Considering that equity theory's basis of comparison is one's opposite-sex partner,[xvii] one would expect that in a highly male dominated society, women not feeling that they have equitable exchanges with their male partners may not have the same effect as it would for men in the same situation. Additionally, it may be common for males to expect to benefit more than females from their relationships. Under these conditions, a male who does not feel that he is benefiting more than his partner might feel distress, as is suggested by our data. Taken together, these results and the poor data-model fit among females may suggest an important role for gender in how perceived equity is related to the development of commitment in Tanzania.

CONCLUSIONS

Table 1: Percentage and frequency distributions of sociodemographic characteristics for respondents aged 15 to 24 who were in relationships and sexually experienced in Tanzania in 2007

	Total	N	Female	N	Males	N
Sex						
Female	52.21	426				
Male	47.79	390				
Total	100			426		390

**p<0.01, * p<0.05

Table 2: Means and standard deviations (SD) of the variables in the social exchange and the self-verification models by sex, socioeconomic status (SES), level of education, and rural/urban residence

	Total	Sex		Education			SES			Residence	
	Mean (SD)	Female (SD)	Male (SD)	Low (SD)	Average (SD)	High (SD)	Low (SD)	Average (SD)	High (SD)	Rural (SD)	Urban (SD)
Relationship variables											
Trust	3.236 (0.615)	3.259 (0.604)	3.210 (0.627)	3.301 (0.555)	3.226 (0.634)	3.199 (0.611)	3.238 (0.632)	3.230 (0.622)	3.246 (0.572)	3.236 (0.614)	3.232 (0.627)
Commitment	3.062 (0.413)	3.083 (0.407)	3.039 (0.419)	3.090 (0.343)	3.062 (0.429)	3.035 (0.427)	3.064 (0.427)	3.061 (0.390)	3.061 (0.442)	3.062 (0.418)	3.062 (0.389)
Overbenefiting, emotional											
Overbenefiting, instrumental											
Underbenefiting, emotional											
Underbenefiting, instrumental											
Distress, relationship											
Distress, status											
Distress, life											
Satisfaction, needs											
Satisfaction, general											
Investments, self											
Investments, relationship											
Alternatives, needs											
Alternatives, closeness											

Self-Verification	4.392	4.376	4.410	4.430	4.372	4.417	4.431	4.375	4.363	4.391	4.395
	(0.472)	(0.478)	(0.466)	(0.454)	(0.479)	(0.470)	(0.446)	(0.493)	(0.469)	(0.472)	(0.474)
Self-feelings											
Self-esteem	3.029	3.033	3.024	2.986**	3.014	3.119	2.972**	3.037	3.109	3.034	3.000
	(0.343)	(0.346)	(0.340)	(0.358)	(0.343)	(0.313)	(0.380)	(0.314)	(0.322)	(0.343)	(0.343)
Depression	1.684	1.721*	1.644	1.616	1.712	1.665	1.723	1.669	1.652	1.689	1.656
	0.421	0.445	0.393	0.447	0.411	0.396	0.403	0.433	0.400	0.429	0.372

**p<0.01, * p<0.05

Table 3: Standardized Estimates for the Equity Theory Model

Independent variables	Dependent variables					
	Distress, relationship	Distress, status	Distress, life	Satisfaction, needs	Satisfaction, general	Commitment
Equity						
Overbenefiting, emotional	-0.044	-0.016	-0.034			
Overbenefiting, instrumental	-0.149**	-0.207**	-0.154**			
Underbenefiting, emotional	-0.017	-0.034	-0.056			
Underbenefiting, instrumental	-0.040	-0.071	-0.035			
Distress, relationship				0.006	0.024	0.038
Distress, status				-0.001	0.023	-0.060
Distress, life				0.052	0.006	-0.108*

**p<0.01, * p<0.05 for differences

Table 4: Standardized Estimates for the Investment Theory Model

| Independent variables	Dependent variable: Commitment
Investments, self	0.199**
Investments, relationship	0.087*
Alternatives, needs	-0.051
Alternatives, closeness	-0.037
Satisfaction, needs	0.123**
Satisfaction, general	0.253**

**p<0.01, * p<0.05 for differences

Table 3: Standardized Estimates for the Identity Model

Independent variables	Dependent variables			
	Self-esteem	Depression	Trust	Commitment
Self-verification	0.100**	-0.137**	0.123**	
Self-esteem			0.142**	
Depression			-0.131**	
Trust				0.505**

Model controls for sex, age, religion, marital status, urban residence, level of education, and reported health status.

**p<0.01, * p<0.05 for differences

Figure 3b.: Standardized estimates of the Self-verification, trust, and commitment process
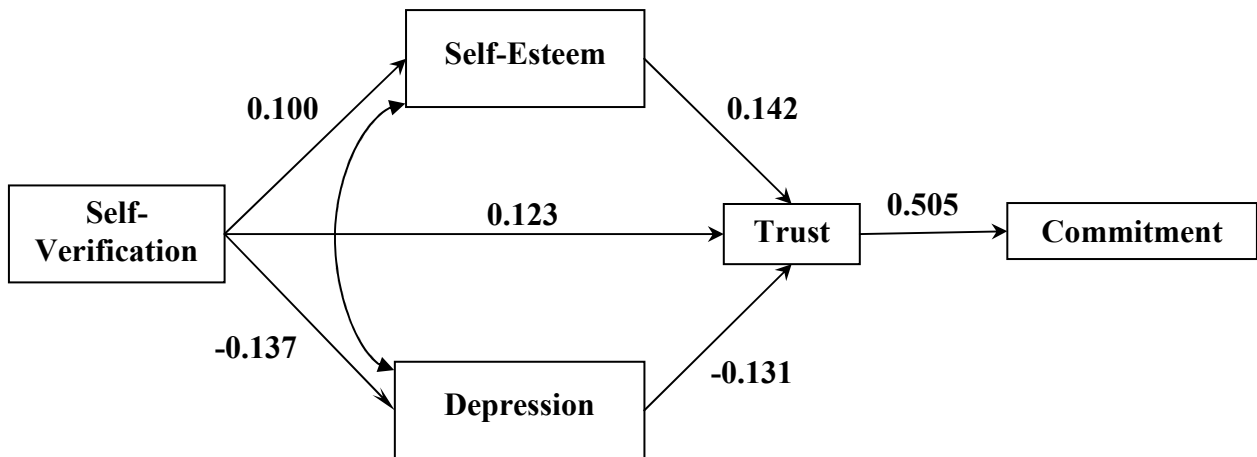
Note: Model controls for sex, age, religion, marital status, urban residence, level of education, socioeconomic status, and reported health status. All estimates are significant at the p < 0.01 level.

Figure 1a: Equity Theory and Commitment
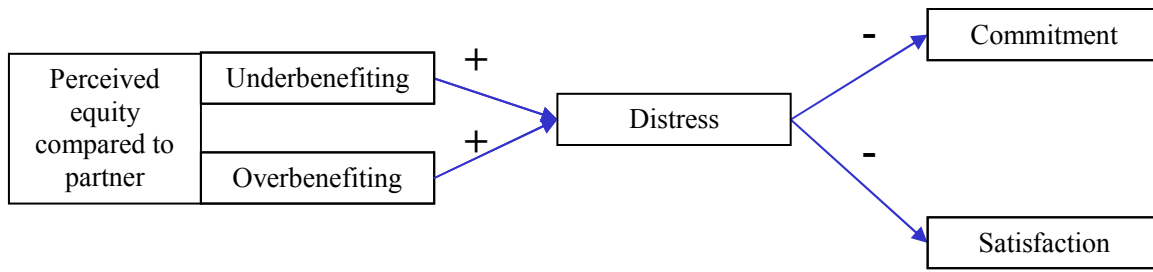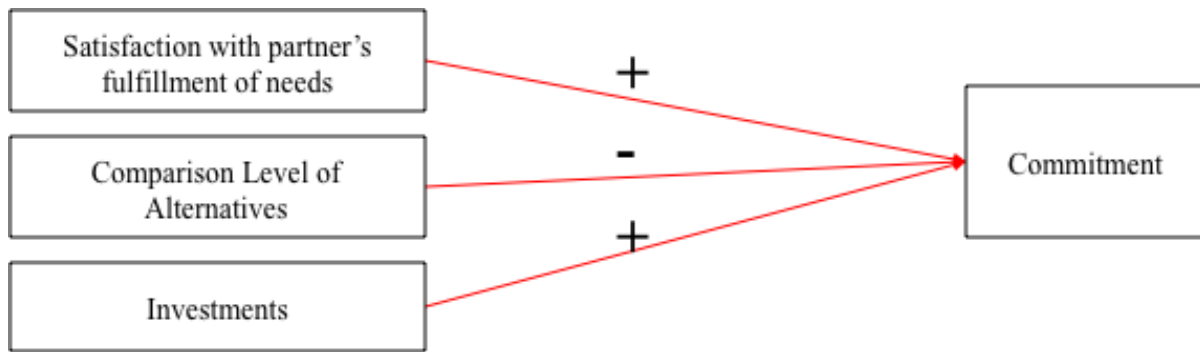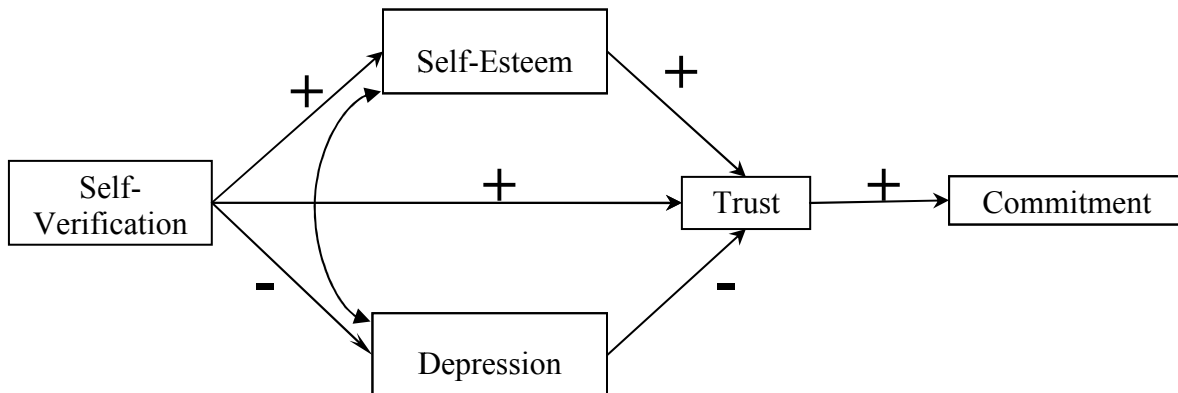

Figure 1b: Investment Theory and Commitment

Figure 1c: Self-verification, Trust, and Commitment (adapted from Burke and Stets 1999)

References

(TACAIDS), Tanzania Commission for AIDS, National Bureau of Statistics (NBS), and ORC Macro. 2005. *Tanzania HIV/AIDS Indicator Survey 2003-04*. Calverton, Maryland, USA: TACAIDS, NBS, and ORC Macro.

Agha, Sohail, Thankian Kusanthan, Kimberly Longfield, Megan Klein, and John Berman. 2002. "Reasons for non-use of condoms in eight countries in sub-Saharan Africa." *PSI Working Paper Series*.

Burke, Peter. 1991. "Identity Processes and Social Stress." *American Sociological Review* 56:836-849.

Burke, Peter J. 1997. "An Identity Model for Network Exchange." *American Sociological Review* 62:134-150.

Burke, Peter J. and Jan E. Stets. 1999. "Trust and Commitment through Self-Verification." *Social Psychology Quarterly* 62:347-366.

Caldwell, John C., Pat Caldwell, and Pat Quiggin. 1989. "The Social Context of AIDS in sub-Saharan Africa." *Population and Development Review* 15:185-233.

Campbell, Catherine. 1997. "Migrancy, masculine identities and AIDS: The psychosocial context of HIV transmission on the South African gold mines." *Social Science & Medicine* 45:273-281.

Hattori, Megan Klein and Laurie DeRose. 2008. "Young Women's Perceived Ability to Refuse Sex in Urban Cameroon." *Studies in family planning* 39:309-320.

Holmes, J. G. 1981. "The exchange process in close relationships: Microbehavior and macromotives." Pp. 261-284 in *The justice motive in social behavior*, edited by M. J. Lerner and S. C. Lerner. New York: Plenum Press.

Homans, G. C. 1961. *Social Behavior: Its elementary forms*. New York: Harcourt Brace Jovanovich.

Kelley, H.H. and J.E. Thibault. 1978. *Interpersonal relations: A theory of interdependence*. New York: Wiley.

Leik, Robert K. and Sheila A. Leik. 1977. "Transition to Interpersonal Commitment." Pp. 299-322 in *Behavioral Theory in Sociology: Essays in Honor of George C. Homans*, edited by R. L. Hamblin and J. H. Kunkel. New Brunswick, N.J.: Transaction Books.

Longfield, Kim, Megan Klein, and John Berman. 2002. "Criteria for Trust and How Trust Affects Sexual Decision-Making among Youth." *PSI Working Paper Series*.

Luke, Nancy. 2010. "Migrants Competing Commitments: Sexual Partners in Urban Africa and Remittances to the Rural Origin." *American Journal of Sociology* 115:1435-79.

Molm, Linda D., Nobuyuki Takahashi, and Gretchen Peterson. 2000. "Risk and Trust in Social Exchange: An Experimental Test of a Classical Proposition." *American Journal of Sociology* 105:1396-1427.

Omari, T.Peter. 1960. "Changing attitudes of students in West African society toward marriage and family relationships." *The British Journal of Sociology* 11:197-210.

Paulme, Denise. 1963. *Women of tropical Africa*. Translated by H. Wright. London: Routledge.

Plummer, M. L., D. Wight, J. Wamoyi, G. Mshana, R. J. Hayes, and D. A. Ross. 2006. "Farming with your hoe in a sack: condom attitudes, access, and use in rural Tanzania." *Stud Fam Plann* 37:29-40.

Poulin, Michelle. 2007. "Sex, money, and premarital partnerships in southern Malawi." *Social Science & Medicine* 65:2383–2393.

Rosenburg, Morris. 1986. *Conceiving the Self*. Malabar, FL: Krieger.

Rusbult, C.E. 1983. "A longitudinal test of the investment model: The development (and deterioration) of satisfaction and commitment in heterosexual involvements." *Journal of Personality and Social Psychology* 45:101-117.

Rusbult, Caryl E., John M. Martz, and Christopher R. Agnew. 1998. "The Investment Model Scale: Measuring commitment level, satisfaction level, quality of alternatives, and investment size." *Personal Relationships* 5:357-391.

Silberschmidt, Margrethe. 2001. "Disempowerment of Men in Rural and Urban East Africa: Implications for Male Identity and Sexual Behavior." *World Development* 29:657-671.

Smith, Daniel Jordan. 2007. "Modern marriage, men's extramarital sex, and HIV risk in southeastern Nigeria." *American Journal of Public Health* 97:997.

Sprecher, Susan. 1986. "The Relation between Inequity and Emotions in Close Relationships." *Social Psychology Quarterly* 49:309-321.

—. 1988. "Investment Model, Equity, and Social Support Determinants of Relationship Commitment." *Social Psychology Quarterly* 51:318-328.

—. 2001. "Equity and Social Exchange in Dating Couples: Associations With Satisfaction, Commitment, and Stability." *Journal of Marriage and Family* 63:599-613.

Stryker, Sheldon and Peter J. Burke. 2000. "The Past, Present, and Future of an Identity Theory." *Social Psychology Quarterly* 63:284-297.

Thye, Shane R. 2000. "A Status Value Theory of Power in Exchange Relations." *American Sociological Review* 65:407-432.

Walster (Hatfield), E., G.W. Walster, and E. Berscheid. 1978. *Equity: Theory and research*. Boston: Allyn and bacon.

Ware, J.J. and C.D. Sherbourne. 1992. "The MOS 36-item short-form health survey (SF-36). I. Conceptual framework and item selection." *Medical Care* 30:473-83.

ENDNOTES

[i] Questions used to assess equity include (Swahili in italics): Some people in relationships give their partners more or less of some things than they get from their partner. In your relationship are you giving more/ getting less, getting equal or giving less/ getting more than your partner in terms of ____. (*Baadhi ya watu katika mahusiano wanawapa wapenzi wao zaidi au pungufu ya baadhi ya vitu wanavyopata kutoka kwa mpenzi wake. Katika uhusiano wako wewe unatoa zaidi/ unapata pungufu, sawasawa au unatoa pungufu/unapata zaidi ya mpenzi wako katika yafuatayo ____*)

[ii] Questions used to assess investments include: I have dedicated a great deal of time to my relationship with my partner. (*Nimetumia muda mwingi katika uhusiano wangu na mpenzi wangu*); I have not told my partner many private things about myself. (*Sijamweleza mpenzi wangu mambo mengi ya binafsi ambayo yananihusu.*); When I think of who I am, I think of myself as someone who has a partner and is in a relationship. (*Ninapofikiria kuhusu mimi ni nani, ninajifikiria mwenyewe kama mtu mwenye mpenzi na niliye katika uhusiano*); My partner and I remember many things that we did together (*Mpenzi wangu pamoja na mimi tunakumbuka mambo mengi tuliyofanya pamoja*); I have put a great deal into my relationship with my partner that I would lose if the relationship were to end (*Nimefanya mengi katika uhusiano wangu na mpenzi wangu kiasi kwamba ningepungukiwa iwapo uhusiano ungekuwa uishe*); Few areas of my life have become linked to my partner. (*Sehemu chache katika maisha yangu zimetokea kuhusiana na mpenzi wangu*); I have put a great deal into my relationship with my partner (Nimefanya mengi katika uhusiano wangu na mpenzi wangu); If my partner and I were to decide to break up, my relationships with *friends* would be complicated (*Iwapo mpenzi wangu pamoja na mimi tungeamua kuachana, basi uhusiano wangu na marafiki zangu ungekuwa mgumu*); If my partner and I were to decide to break up, my relationship with *family members* would be complicated. (*Iwapo mpenzi wangu pamoja na mimi tungeamua kuachana, basi uhusiano wangu na ndugu zangu ungekuwa mgumu*)

[iii] A Monte Carlo analysis suggests that substituting the mean response of a respondent's scores on other items on a scale is the optimal method for handling missing data (Roth, Switzer, and Switzer 1999). This approach saves data and takes advantage of existing data from the individual to estimate missing scores. Unless otherwise stated, missing values and "don't know" values were imputed using this method.

[iv] Questions assessing alternatives include: If you didn't have your current partner, how difficult would it be for you to get the following needs fulfilled either by finding a new partner, or by your friends or family? (*Kama usingekuwa na mpenzi wako wa sasa, ni kwa kiasi gani ingakuwa vigumu kwa mahitaji yafuatayo kutoshelezwa na mpenzi mpya au marafiki zako au familia yako?*) A) My need for feeling close with someone (*mahitaji ya kujisikia kuwa karibu na mtu Fulani*); B) My need for having someone to be with & do activities with all the times you want (*mahitaji ya kupata mtu wa kuwa nae na kufanya naye shughuli wakati wote unapohitaji*); C) My need for feeling that there is someone who understands you (*mahitaji ya kujisikia kwamba yupo mtu anayekuelewa*); D) My need for feeling like you're in a serious relationship (*mahitaji ya kujisikia kwamba upo katika uhusiano makini*); E) My need for feeling emotionally close to someone (*mahitaji ya kujisikia kwamba upo karibu na mtu fulani kihisia*); F) My need for sex (*mahitaji ya kufanya mapenzi*); Other than my partner, the people in this area would not be appealing partners. (*Tofauti na mpenzi wangu, watu katika eneo hili wasingeweza kuwa wapenzi wa kuvutia sana.*); Being with a different partner or spending time with friends or alone would be enjoyable. (*Kuwa katika uhusiano na mpenzi tofauti au kutumia muda wangu na marafiki au kukaa mwenyewe kutanipatia faraja*); If I weren't in a relationship with my partner, and I wanted to I would find another appealing person to be my partner. (*Kama nisingekuwa katika uhusiano na mpenzi wangu, ningetafuta mtu mwingine wa kuvutia awe mpenzi wangu kama ningetaka*); It would be difficult to get the intimacy, companionship, and help that I get out of my current relationship if I were in different relationship (*Ingekuwa vigumu kupata ukaribu, kampani, na msaada ninaopata katika uhusiano wangu uliopo kama ningekuwa katika uhusiano tofauti*).

[v] Questions measuring satisfaction include: In life, people have many needs, like needing someone to be close to, needing someone to be with and do things with, needing to feel someone understands you, needing to feel like you are in a serious relationship, needing to feel emotionally close to someone, and needing sex. How much does your relationship with your partner fulfill your need (*Katika maisha, watu wana mahitaji mengi, kama kuhitaji mtu wa kuwa naye karibu, kuhitaji mtu wa kuwa naye na kushirikiana naye mambo, kuhitaji kujisikia mtu anakuelewa, kuhitaji kujisikia kama uko katika uhusiano imara/ makini, kuhitaji kujisikia karibu na mtu kihisia na kuhitaji kufanya mapenzi. Ni kwa kipimo gani uhusiano wako na mpenzi wako unatosheleza mahitaji yako…*): a) for feeling close with someone (*ya kujisikia kuwa karibu na mtu fulani*), b) for having someone to be with & do activities with all the times you want (*ya kupata mtu wa kuwa nae na kufanya naye shughuli wakati wote unapohitaji*), c) for feeling that there is someone who understands you (*ya kujisikia kwamba yupo mtu anayekuelewa*), d) for feeling like you're in a serious relationship (*ya kujisikia kwamba upo katika uhusiano makini*),e) for feeling emotionally close to someone (*ya kujisikia kwamba upo karibu na mtu fulani kihisia*), f) for sex (*kufanya mapenzi*); I feel satisfied with my relationship with my partner. What about you, do you agree or disagree? (*Ninajisikia kutosheka na uhusiano wangu na mpenzi wangu. Vipi kuhusu wewe, unakubaliana au hukubaliani?*); I feel my relationship with my partner is not ideal. What about you, do you agree or disagree? (*Ninajisikia uhusiano wangu na mpenzi wangu haupo kama nilivyotegemea. Vipi kuhusu wewe, unakubaliana au hukubaliani?*); I feel my relationship with my partner makes me happy. What about you, do you agree or disagree?; (*Ninajisikia uhusiano wangu na mpenzi wangu unanifanya mwenye furaha. Vipi kuhusu wewe, unakubaliana au hukubaliani?*)

[vi] Activities included being responsible: for showing appreciation for the things partner does well (*Katika kuonyesha kufurahishwa kwa yale mpenzi wako anayofanya vizuri*); for making sure you have sex with your partner (*Katika kuhakikisha kuwa kufanya mapenzi na mpenzi wako),* for financially supporting us (*Katika kusaidiana kipesa*); and for helping with the partner's problems (*Katika kusaidia matatizo ya mpenzi wako*).

[vii]I feel that I have a number of good qualities (*Ninajisikia kuwa na baadhi ya sifa nzuri*); All in all, I am inclined to feel that I am a failure (*Kwa ujumla, ninakaribia kujisikia kutofanikiwa*); I am able to do things as well as most other people (*Nina uwezo wa kufanya vitu sawasawa na watu wengine wengi*); I think positively about myself (*Nina mawazo mazuri kuhusiana na mimi mwenyewe*); On the whole, I am satisfied with myself (*Kwa ujumla, nimeridhika na mimi mwenyewe*); and I wish I could have more respect for myself. (*Ninatamani ningeweza kujiheshimu mwenyewe zaidi*).

[viii] Eliminated items include: I feel that I'm a person of worth, at least on an equal plane with others (*Ninajisikia kuwa mtu mwenye thamani, nikilinganishsa na watu wengine*.); I feel I do not have much to be proud of. *(Ninajisikia sina vingi vya kujivunia*.); sometimes I feel like I am useless (*Wakati mwingine najisikia kama sina faida*); and at times I think I have done things that are not of good moral character (*Wakati mwingine ninajisikia kufanya mambo ambayo sio ya tabia nzuri*).

[ix] You were bothered by things that usually don't bother you (*Ulisumbuliwa na mambo ambayo si kawaida kukusumbua*); You had difficulties keeping your mind on the activities you were doing (*Ulipata ugumu kuweka mawazo yako katika shughuli unazofanya.*); You felt depressed (*Ulijisikia kukata tama*); You felt fearful (*Ulikuwa na woga*); Your sleep was restless (*Usingizi wako ulikuwa wa mang'amung'amu*); You felt happy (*Ulijisikia na furaha*); and You felt lonely (*Ulijisikia mpweke*).

[x] My partner is perfectly honest and truthful with me (*Hakika mpenzi wangu ni mkweli na mwaminifu kwangu katika maneno yake*); I feel that I can trust (believe in intentions and abilities) my partner completely (*Ninajisikia kwamba ninaweza kumwamini kabisa mpenzi wangu katika yale anayodhamiria na anayoweza kufanya*); My partner is truly sincere in his/her promises (*Mpenzi wangu ni mkweli kikweli katika ahadi zake*); I feel that my partner does not show me enough consideration (*Ninajisikia kwamba mpenzi wangu haonyeshi kunifikiria vya kutosha*); My partner treats me fairly and justly (*Mpenzi wangu ananitendea kwa usawa na haki*); I feel that my partner can be counted on to help me (*Ninajisikia kwamba mpenzi wangu anaweza kuhesabika katika kunipatia msaada*).

[xi] I want our relationship to last for a very long time (*Ninataka uhusiano wetu udumu kwa muda mrefu sana*); I plan on continuing to improve my relationship with my partner (*Nimepanga kuendelea kuboresha uhusiano wangu na mpenzi wangu*); I would not feel very upset if my relationship with my partner were to end in the near future (*Sitajisikia vibaya sana iwapo uhusiano wangu na mpenzi wangu utavunjika muda mfupi ujao*); I feel very attached to my relationship with my partner (*Ninajisikia nimeguswa sana na uhusiano wangu na mpenzi wangu*); I want my relationship with my partner to last forever (*Ninataka uhusiano wangu na mpenzi wangu udumu daima*); I am concerned about the future of my relationship with my partner (*Ninaufikiria uhusiano wangu na mpenzi wangu kwa hapo baadae*).

[xii] While the full identity theory model included elements of emotional attachment and group orientation, this scope of the questionnaire was limited and this analysis does not include emotional attachment or group orientation.

[xiii] The results of the factor analysis and path model were not sensitive to whether all items are included in the measurement of each factor, whether factor analysis is conducted in STATA to determine the factors included or whether, as is presented here, exploratory factor analysis is conducted in Mplus (analysis available upon request). As exploratory factor analysis in Mplus assesses the shared variation in multiple measures and allows for the inferred presence of latent factors, I present the results of the modeling in Mplus.

[xiv] Self-reported health status was measured by asking the general question from the general health scale of the SF-36 Ware, J.J. and C.D. Sherbourne. 1992. "The MOS 36-item short-form health survey (SF-36). I. Conceptual framework and item selection." *Medical Care* 30:473-83. "In general, would you say your health is excellent, very good, good, fair, or weak?". Although in its original form this question asks the respondent to rank their health as "excellent, very good, good, fair, or poor," our interviewers unanimously felt that we should not ask Tanzanians if their health was "poor." Based on their recommendations we substitute "weak" for "poor."

[xv] Use of an assets and amenities index is the standard measure of socioeconomic status in sub-Saharan Africa. The assets and amenities include whether the household has electricity, a flush toilet, piped water, a radio, a TV, a refrigerator, a bicycle, a moped, and a car/truck. Most respondents (45%) reported two of the listed assets and amenities.

[xvi] In path analysis, a just-identified model has the same number of parameters to be estimated as there are unique pieces of information in the covariance matrix. In other words, there are the same number of equations in the model as there are unknown parameters to be calculated. While just-identified models are empirically solvable, they also reproduce sampling error and most fit indices cannot be calculated. Most path models are over-identified models with fewer parameters to be estimated than unique pieces of information in the covariance matrix. Fit indices are calculated for over-identified models.

[xvii] Same-sex relationships are extremely uncommon in Tanzania. Investment theory's basis of comparison is what one expects for *one's self* from a partner.