PREDICTING MARITAL INSTABILITY: AN EMPIRICAL TEST OF COMPETING MODELS

by

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Abstract

There has been substantial empirical research and theoretical modelling on the determinants of marital instability. However, the predominant theoretical models, largely based on field theory and social exchange, are ambiguous. Due to this ambiguity, there remains an ongoing debate in the literature as to the utility of these models. In addition, there are few empirical tests of these models, while existing tests are limited by poor measures and sample restrictiveness. Furthermore, the models are largely developed from research with samples restricted to short marital durations, consequently, limiting the utility of these models on marriages of longer duration. Five models based on Levinger’s (1965, 1976) conceptualisation of marital attractions, alternatives, and barriers and Lewis and Spanier’s (1979) theory of marital quality and marital stability are developed. Four sets of tests are conducted using the National Survey of Families and Households data set (waves 1 and 2), a national, stratified, multi-stage area probability sample consisting of over 13,000 cases in the United States. First, a series of logistic regression analyses are run to determine if marital quality has a significant effect on marital stability, a notion based on little empirical evidence. Second, five models are compared to determine which of five competing explanations best fits the data. Third, the best fitting model is retested with the addition of control variables. Fourth, the resulting model is retested on younger and older marriage cohorts. Marital quality is found to have a significant effect on marital stability. Results of the model comparisons provide support for an additive curvilinear model where marital quality, alternatives, and barriers all have independent effects on
marital stability. This provides support for Lewis and Spanier's (1979) marital typology. With the addition of controls, the model remains significant. However, the additional significance of duration and commitment suggest that cohort and duration effects may be occurring. The model is effective in predicting marital stability for the younger marriage cohort but did not apply to the older marriage cohort. These results suggest a theoretical implication. Time oriented theories need to be examined as possible explanations for marital stability, especially for older marriage cohorts.
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Introduction

Inquiry into the causes of marital instability, through both empirical research and theoretical modelling has been substantial. The predominant theoretical models are those proposed by Levinger (1965, 1976), Lewis and Spanier (1979), and Spanier and Lewis (1980). These models are largely based on field theory and social exchange, combining components of each. However, there is ambiguity in these models. The relationships that are theorised involving principle components such as marital stability, marital quality, alternatives, and barriers are inconsistent. Due to these inconsistencies, there remains an ongoing debate in the literature as to their interpretation and accuracy (Green and Sporakowski, 1984; Schumm and Bugaighis, 1985; Thomas and Kleber, 1981). In addition, there are few empirical tests of these models, while existing tests are limited by poor measures and sample restrictiveness (Green and Sporakowski, 1984; Udry, 1983; White and Booth, 1991). Therefore, clarification of the models as well as empirical testing is necessary.

In addition to theoretical inconsistencies, the models are largely based on samples involving marriages of short duration. Thus, as suggested by Lloyd and Zick (1986), empirical testing of models of marital instability using mid and later life samples would be beneficial. Although the divorce rate is the lowest for the elderly compared with younger age groups, (Hammond and Muller, 1992), Lloyd and Zick (1986) suggest that there are a number of reasons why divorce rates are likely to increase for future cohorts of the elderly. First, increased longevity and the increased proportion of the
elderly in the population may contribute to an increase in divorced elderly (Hennon, 1983). Second, as the onset of health problems occur in later life, marital distress may occur as a result and subsequently lead to instability (Shamoian and Thurston, 1986). Third, as suggested by Uhlenberg and Myers (1981), future cohorts of the elderly are more likely to be accepting divorce as a viable alternative to an unsatisfactory marriage, as there appears to be a new morality where individual fulfilment is placed above obligation to others (Troll, Israel, and Israel, 1977). Thus, an understanding of marital instability for marriages of longer duration is important and should not be excluded from empirical and theoretical testing.

The purpose of this study is to clarify and examine theoretical models of marital instability in an effort to understand the relationship marital quality, alternatives, and barriers have on predicting marital instability. In addition, this research will determine if the theoretical models apply to both younger and older marriage cohorts.
Chapter One
Theories of Marital Stability

Reviewing the determinants of marital instability, Levinger (1965, 1976) developed a theoretical framework based on field and social exchange theories, utilising the notions of attracting forces, restraining or push forces (barriers) and, alternative attraction or pull forces (alternatives). Lewis and Spanier (1979) subsequently proposed a "theory of marital quality and marital stability" based on Levinger's framework and empirical generalisations drawn from existing research on samples of short duration marriages. Lloyd and Zick (1986), in turn, utilise a Levinger/Becker model to summarise the findings of the marital instability literature involving longer marital duration samples. These authors argue that the theoretical ideas behind the two models that are proposed by Levinger (1976) and Becker (1981, 1991) are quite similar except for the use of differing terminology. Therefore, in their classification of marital instability findings, the authors treat the models as one.

However, there remains an unresolved controversy in the literature as to the interpretation and accuracy of the proposed theoretical propositions initially formulated by Lewis and Spanier. (Green and Sporakowski 1984; Schumm and Bugaighis, 1985; Thomas and Kleber, 1981). Little attempt has been made to clarify this debate with empirical research. Exceptions to this include Green and Sporakowski (1984), Udry (1983), and White and Booth (1991). However, all of these studies are weakened by
poor measures of relevant concepts and sample restrictiveness. Therefore, there still remains a strong need for empirical research to test the utility of these models to predict and explain marital instability.

The models to be discussed share a basic premise of exchange theory:
Humans avoid costly behaviour and seek rewarding statuses, relationships, interaction, and feeling states to the end that their profits are maximised. Of course, in seeking rewards they voluntarily accept some costs; likewise in avoiding costs, some rewards are forgone, but the person, group, or organisation will choose the best outcome available, based on his/her/its perception of rewards and costs. (Nye, 1979, p. 2)

Thibaut and Kelley (1959) define rewards as "pleasures, satisfactions, and gratifications the person enjoys" (Thibaut and Kelley, 1959, p.12). Costs, on the other hand are things an individual dislikes. These can be in the form of punishments or rewards forgone (opportunity costs). Profit is the relationship of rewards to costs.

Five theoretical models describing Levinger (1965,1976) and Lewis and Spanier's (1979) frameworks are clarified and presented. These models include: field theory/exchange model, field theory/exchange model with separate effects, relationship exchange model (based on Schumm and Bugaighis's (1985) interpretation), relationship exchange model (interpreted by Thomas and Kleber (1981), and relationship exchange model with separate effects. Although these models are all
based on social exchange theory and most incorporate the concepts of push and pull forces from field theory, the relationships among marital quality, alternatives, and barriers and their subsequent effect on marital stability are unique for each model.

Field Theory/Exchange Model

Levinger (1965, 1976) and part of Lewis and Spanier (1979) and Spanier and Lewis's (1980) discussion of their frameworks propose a model based primarily on field theory but is interpretable in the framework of social exchange. This model is additive in nature where pair cohesiveness or marital stability is determined by (a) the level of attractions or repulsions to the marriage added to, (b) the barriers to dissolution or external pressures to remain married, minus (c) the available and salient alternative attractions. As Levinger notes, "pair cohesiveness pertains to the net sum of the attractions and barriers inside a relationship minus the net attractions to and barriers around the most salient outside alternative" (Levinger, 1976, p. 28).

Levinger views the marriage pair as a two person group and uses Festinger, Schachter, and Back's (1950) definition of group cohesiveness as "the total field of forces which act on members to remain in the group" (Festinger, Schachter, and Back, 1950, p. 164). Attractions to the marriage are directly associated with perceived rewards and inversely with perceived costs (Levinger, 1976). Examples of attractions, according to Levinger, include family income, home ownership, educational status of the husband, occupational status of the husband, social similarity (age, religion, etc...);
companionship, and sexual enjoyment. Levinger defines barriers as restraining forces. “As originally proposed by Lewin (1951, p. 259), a restraining force affects a person only when he approaches the boundary of a psychological region; he is not restrained unless and until he attempts to cross the boundary” (Levinger, 1976, p. 25). Examples of barriers include financial costs of divorce, obligation toward the marital bond, religious constraints, social pressures, and presence of children. Alternative attractions refer to alternative relationships or statuses to that of the marriage. These are factors that compete with the marriage by offering equal or greater profitability. For example, relationships with employers, employees, parents, children, siblings, friends, and lovers all pose as alternative relationships to the marriage (Levinger, 1965). Other alternatives as proposed by Levinger include wife’s independent social and economic status, independence, and self actualisation.

While the interpretation of Lewis and Spanier (1979) and Spanier and Lewis’s (1980) theoretical contribution is problematic, one can interpret the meaning of their theory of marital quality and marital stability as an elaboration of Levinger. In particular, their exchange typology of marital quality and marital stability suggests a similar additive model. They describe two vectors: (a) a horizontal axis representing intradyadic factors (those which affect marital quality) and (b) a vertical axis representing extradyadic factors (those affecting marital stability).

The intradyadic factors directly affect the quality of the marriage.

They consist of a balance of attractions to the marriage and
tensions within the marriage. The extradyadic factors directly affect the stability of the marriage. They consist of a balance of alternative attractions outside of the marriage and external pressures acting on the marriage. The ultimate costs and rewards, pushes and pulls, of all the forces acting on the marriage will determine the quality and stability of the marriage. (Spanier and Lewis 1980, p. 832, emphasis added).

According to Lewis and Spanier, marital quality encompasses all of the following terms: marital "satisfaction", "happiness", "role strain", "conflict", "communication", "integration", and "adjustment". It is specifically defined as "a subjective evaluation of a married couple's relationship ... [where] the range of evaluations constitutes a continuum reflecting numerous characteristics of marital interaction and marital functioning" (Lewis and Spanier, 1979, p. 269). The term marital quality is used by Lewis and Spanier rather than Levinger's term marital attractions. It is seen as the outcome of the factors discussed by Levinger and the primary cause of stability. In contrast, marital stability "is defined as the formal or informal status of a marriage as intact or non intact" (Lewis and Spanier, 1979, p. 269). A stable marriage is a marriage that is only terminated by the natural death of at least one spouse. An unstable marriage is one which is terminated by one or both spouses. A divorce, informal separation, annulment, and desertion all indicate marital instability. Although Lewis and Spanier define marital stability as a dichotomy (either intact or not intact), their use
of the term reflects a continuum which is consistent with Levinger's use of the term pair cohesiveness.

Lewis and Spanier indicate the additive nature of their typology of marital partnerships. "The vectors may be combined or summated to produce one net vector which will place the dyad at one point on the visual map" (Lewis and Spanier, 1979, p. 287). Therefore, a marital relationship can be one of four combinations at any given point in time: (1) high quality and high stability, (2) high quality and low stability, (3) low quality and low stability, and (4) low quality and high stability. Levinger (1979), similarly, depicts this typology as (1) attractive stability, (2) attractive instability, (3) unattractive instability, and (4) unattractive stability.

This typology makes use of simple exchange theory assumptions. Costs and rewards operate within the dyad. Rewards are sources of marital attraction and move the couple towards high marital quality. Costs are sources of marital tensions which move the couple towards low marital quality.

As noted previously by Levinger (1979), extradyadic factors also have operating costs and rewards to be considered in terminating a marriage. Barriers (external pressures to remain married) are the costs while alternative attractions to the marriage are the rewards associated with marital dissolution.

Therefore, according to social exchange theory, the outcomes of interaction in a relationship are evaluated against the comparison level (CL) and comparison level of alternatives (CLalt). CL "refers to the average value of all outcomes one has
experienced in a comparable situation ... [while the CLalt] is the level of outcomes expected in one's best currently available alternative to the present relationship" (Levinger, 1979, p. 171). Levinger (1979) explains that in high quality and high stability marriages "each member's outcomes exceed both CL and CLalt" (Levinger, 1979, p. 173). The marriage is viewed as at or above average to their expectations and that of alternatives (e.g. single life). High quality and low stability marriages involve outcomes where alternatives to the marriage for at least one partner are higher than that of the marriage. Outcomes below both the CL and CLalt lead to low quality and low stability marriages while for low quality and high stability marriages "present outcomes are unsatisfying but still better than those one foresees anywhere else" (Levinger, 1979, p. 173).

Figure 1.1 graphically depicts the relationship proposed by this theoretical model between marital quality and marital stability for high and low levels of alternatives and barriers.
Figure 1.1. Field theory/exchange model.
As can be seen in Figure 1.1, higher barriers and fewer alternative attractions increases the level of marital stability uniformly for all levels of marital quality compared to lower barriers and higher alternatives. Marital stability increases with increases in marital quality.

Field Theory/Exchange Model with Separate Effects

Another interpretation of the relationship between marital quality, alternatives, and barriers and their effects on marital stability is based on an elaboration of the earlier model by Lewis and Spanier (1979) and Spanier and Lewis (1980). In this model, the effects of marital quality on marital stability vary depending on the unique combination of alternatives and barriers.

According to Spanier and Lewis, alternative attractions suppress the positive effects of marital quality by acting as pull factors forcing individuals out of even high quality relationships. Similarly, barriers also suppress the effect of declining marital quality but by acting as push factors forcing individuals to remain in even low quality relationships. These moderating effects can be seen in Figure 1.2.
Figure 1.2. Field theory/exchange model with separate effects.
First, at high levels of marital quality, levels of marital stability are lower for line c
and line d (conditions with high alternatives) compared to line a and line b (conditions
with low alternatives) due to the pull effect of alternatives on marital stability. That is, in
relationships with high alternatives, more couples with high levels of marital quality will
leave the relationship. As a result, the slopes of lines c and d are less severe than the
slopes for lines a and b, respectively. Second, at low levels of marital quality, levels of
marital stability are higher for line a and line c (conditions with high barriers) compared
to line b and line d (conditions with low barriers) due to the push effect barriers have on
marital stability. In other words, in relationships with barriers, more couples with low
levels of marital quality will remain in the relationship. Therefore, the slopes of lines a
and c are less severe than the respective slopes for lines b and d.

Relationship Exchange Model (Schumm and Bugaighis)

The relationship exchange model is another possible interpretation of Lewis and
Spanier’s theory of marital quality and marital stability illustrated by Schumm and
Bugaighis (1985). This model is derived from Lewis and Spanier’s propositions 91-93.
These propositions state that "alternative attractions to a marriage negatively influence
the strength of the relationship between marital quality and marital stability [and that]
external pressures to remain married positively influence the strength of the
relationship between marital quality and marital stability" (Lewis and Spanier, 1979, pp.
289-290, emphasis added). Therefore, according to Lewis and Spanier, the likelihood
of having a stable marriage first depends on the level of marital quality in the relationship. Then, the extent to which low marital quality results in marital dissolution depends directly on the availability of alternative attractions to marriage and the work of external pressures to remain married.

According to Schumm and Bugaighis, high alternatives and low barriers are equivalent conditions and act in similar ways to moderate the effects of marital quality on marital stability by creating a condition where even high quality marriages lack stability.

Figure 1.3 graphically depicts the relationship between marital quality and marital stability as interpreted by Schumm and Bugaighis (1985) based on Lewis and Spanier's theoretical propositions.
Figure 1.3. Relationship exchange model (Schumm and Bugaighis).
As can be seen in Figure 1.3, barriers help decrease marital instability as without barriers, people would dissolve their marriages for even small perceived increases in rewards from an alternate relationship relative to their current relationship. Barriers are needed to keep couples from looking for short term gain from other marital alternatives.

We [Schumm and Bugaighis] interpret ... [Lewis and Spanier's] position to mean that a high number of alternatives will tend to lead to divorce, even if relationship quality is relatively high. If there were absolutely no barriers to divorce, then many people would change partners in pursuit of relatively small gains in relationship quality. (Schumm and Bugaighis, 1985, p. 74)

Even with high levels of marital quality (marital quality above CL), people will tend to change relationships. With low barriers and high alternatives marital quality will always be below CLalt. Thus, marital quality has little effect on marital stability regardless of the level of marital quality. Under conditions of high barriers and low alternatives, however, marital quality has a strong effect on marital stability. At low levels of marital quality, marital quality will be below a persons CL and CLalt while at high levels of marital quality, both CL and CLalt are less than marital quality. Therefore, increases in marital quality will lead to increases in marital stability.

White and Booth (1991) support this model. Their findings suggest that “[w]hen barriers are high and alternatives low, marital happiness has more impact on divorce”
(White and Booth, 1991, p. 18). However, the authors also indicate that the work of thresholds may explain the relationship between these variables. Therefore, this interpretation also provides support for a threshold model which will be presented later in this manuscript.

**Relationship Exchange Model (Thomas and Kleber)**

In contrast to Lewis and Spanier's conditional propositions as well as those of Schumm and Bugaighis, Thomas and Kleber (1981) believe that "increasing alternative attractions strengthens the relationship between marital quality and marital stability [while] ... increasing external pressures weakens the relationship between marital quality and marital stability" (Thomas and Kleber, 1981, p. 780, emphasis added). [This is opposite to that proposed by Lewis and Spanier.] Figure 1.4 graphically depicts this relationship.
Figure 1.4. Relationship exchange model (Thomas and Kleber).
This model is based strictly on exchange theory principles and does not utilize the concepts of push and pull factors for barriers and alternatives. The authors explain that according to exchange theory, as rewards outside the marital relationship increase and costs decrease, marital quality should become a better predictor of marital stability. For the high alternative and low barrier condition, couples with high marital quality will be more likely to remain married. (Marital quality is above CL and CLalt). Under the same conditions of high alternatives and low barriers, couples with low marital quality will have lower levels of marital stability. (Marital quality falls below both CL and CLalt). Therefore, the level of marital quality is a good predictor of the level of marital stability. Under conditions of low alternatives and high barriers, couples with both low and high marital quality will remain married, as for all levels of marital quality, marital quality is above CLalt. Therefore, marital quality, under these conditions, is a poor predictor of marital stability. This model is also implied by Levinger as he states:

Barriers ... affect one's behaviour only if one wishes to leave the relationship ... Barriers are important for keeping long-term relationships intact. An example is the partnership contract, legitimised by the norms of society. Barriers lessen the effect of temporary fluctuations in interpersonal attraction; even if attraction becomes negative, barriers act to continue the relationship (Levinger, 1976, pp. 24-26, emphasis added).
In a reply to Thomas and Kleber, Spanier and Lewis (1981) agree that they may have stated their propositions incorrectly but insist that the propositions need to be tested empirically in order to determine how alternatives and barriers affect the relationship between marital quality and marital stability.

Green and Sporakowski (1984) provide support for this model, however, the findings are insignificant when gender is controlled. The model applies to men but does not apply to women. It appears that alternatives are important for men while marital quality is important for women.

Relationship Exchange Model with Thresholds

A final source of confusion in the debate over Lewis and Spanier's model involves the concept of "thresholds" and the meaning of "strength of relationship". Lewis and Spanier (1979) state in proposition 92 and 93 that alternative attractions negatively influence the strength of the relationship between marital quality and marital stability while barriers positively influence the strength of this relationship. Throughout their discussion, however, Lewis and Spanier indicate that this is a threshold model. The alternatives and barriers are threshold variables which act as forces moderating the effects of marital quality on marital stability. Figure 1.5 graphically depicts this interpretation.
Figure 1.5. Relationship exchange model with thresholds.
In order to correspond intuitively to the threshold model, the theory can be interpreted as follows: Under conditions of high alternatives and low barriers, these moderating variables act as pull factors away from stability, therefore, marital stability will be low regardless of marital quality. (Marital quality is below CLalt) Under conditions of low alternatives and high barriers, however, the relationship between marital quality and marital stability will be strong in the sense that instability will drop off precipitously once marital quality reaches a particular threshold. Thus, a threshold effect will operate for those with extremely low levels of marital quality. With few rewards and many costs of leaving the relationship, couples are unlikely to leave unless marital quality reaches extremely low levels. Therefore, the threshold of marital quality necessary for marital stability decreases. It is in this case that Lewis and Spanier may be interpreting the meaning of “strength of relationship”. This alternative is consistent with Green and Sporakowski’s (1984) interpretation. They state: "the theory implies that … attractions decrease the relationship between quality and stability by increasing the likelihood of divorce independent of the level of marital quality … in regard to the external pressures … quality becomes a better predictor of stability because the pressures enhance the likelihood that those who choose to divorce will have lower levels of quality" (Green and Sporakowski, 1984, p. 79). As indicated above, White and Booth (1991) provide support for this model although no specific tests for curvilinearity were performed. They suggest in their findings that “in the
presence of growing barriers and reduced alternatives, the threshold of marital unhappiness necessary to prompt divorce rises" (White and Booth, 1991, p. 18).

Short Duration Versus Long Duration Marriage

The probability of marital dissolution decreases with increases in marital duration (Hammond and Muller, 1992). How are the differences in the level of marital instability for short duration versus long duration marriages explained? Lewis and Spanier (1979) suggest that "the quality and stability of a relationship may vary over the life cycle, and consequently there is value in assessing a relationship at more than one point in time" (Lewis and Spanier, 1979, p. 286). Several factors may explain why longer duration marriages have less instability: (1) sample attrition, (2) change in the level of alternatives and barriers, (3) the effect of cohort, and (4) the effect of duration.

Marital happiness is found to decline with increases in marital duration (Spanier, Lewis, and Cole, 1975; White and Edwards 1990). The general decline in marital happiness with duration is due to the moderating of marital happiness over time for those individuals in extremely high marital happiness groups. In addition, the proportion of couples with extremely low marital happiness decreases with duration due to the increasing number of divorces that have already occurred. Thus, the variance in marital happiness scores decreases for longer duration marriage samples.
The level of alternatives and barriers may change with increasing marital durations. White and Booth (1991) indicate that longer duration marriages have fewer alternatives and more barriers compared with marriages of shorter duration. This also could explain the decrease in the probability of divorce for longer duration marriages. With fewer reasons to leave coupled with more reasons to stay, marital stability is increased.

There are, however, two factors inconsistent with the theoretical models that may explain the reduction in marital instability for older populations: the effect of cohort and the effect of duration. Older cohorts may be less concerned about receiving rewards from their spouse but instead simply value the institution of marriage in and of itself. As White and Booth (1991) state, “it is also possible that respondents in longer marriages simply come from a generation that put a higher value on stability” (White and Booth, 1991, p. 6). In addition, the effect of duration may play a role in decreasing the probability of marital instability for individuals in long term marriages. In this sense, the relationship itself is valued. Duration increases the value of the relationship and the motivation of individuals to maintain the relationship. Individuals want to continue the relationship as the relationship may be a source of its own rewards providing identity and other more instrumental rewards such as potentials for increasing one’s standard of living and securing future rewards.
Hypotheses

It is assumed that one of the five models presented will best describe the relationship between marital quality, alternatives, and barriers and their effects on marital stability.

H1. According to the field theory/exchange model:
   a) under conditions of high alternatives/low barriers, the level of marital stability decreases uniformly for all levels of marital quality.
   b) under conditions of low alternatives/high barriers, the level of marital stability increases uniformly for all levels of marital quality.

H2. According to the field theory/exchange model with separate effects:
   a) under both conditions with high alternatives (high alternatives/low barriers and high alternatives/high barriers) marital stability will be decreased compared to both conditions with low alternatives (low alternatives/low barriers and low alternatives/high barriers). Alternatives moderate the effect of marital quality on marital stability by acting as pull factors.
   b) under both conditions of high barriers (high alternatives/high barriers and low alternatives/high barriers) marital stability will be increased compared to both conditions with low barriers (high alternatives/low barriers and low alternatives/low barriers). Barriers moderate the effect of marital quality on marital stability by acting as push factors.
H3. According to the relationship exchange model as interpreted by Schumm and Bugaighis:

a) under conditions of high alternatives/low barriers, marital stability will be low regardless of the level of marital quality.

b) under conditions of low alternatives/high barriers, marital stability will be low under conditions of low marital quality and high under conditions of high marital quality.

H4. According to the relationship exchange model as interpreted by Thomas and Kleber:

a) under conditions of high alternatives/low barriers, marital stability will be low under conditions of low marital quality and high under conditions of high marital quality.

b) under conditions of low alternatives/high barriers, marital stability will be high regardless of the level of marital quality.

H5. According to the relationship exchange model with thresholds:

a) under conditions of high alternatives/low barriers, marital stability will be low regardless of the level of marital quality.

b) under conditions of low alternatives/high barriers, a curvilinear effect will be observed. Marital stability will be high except when marital quality is extremely low in which case marital stability will also be low.
H6. The relationship between marital quality, alternatives, and barriers and their effects on marital stability will remain the same regardless of the prior entry of the following control variables: duration, commitment to marriage, age of respondent, assets, completed education, and cohabitation prior to marriage.
Chapter Two

Method

Data

The data used for this study is from the National Survey of Families and Households (waves 1 and 2). The research for this survey was conducted at the Centre for Demography and Ecology and the Department of Sociology of the University of Wisconsin-Madison. The primary research team included: Larry Bumpass, James Sweet, Maurice MacDonald, Sara McLanahan, Annemette Sorensen, Elizabeth Thomson, and Vaughn Call. Some of the perspectives represented include: family sociology, social demography, social psychology and family economics. In addition to the primary research team, a number of consultants provided suggestions and criticism throughout the development of the main interview and corresponding questionnaires.

The sampling plan consists of a national, stratified, multistage area probability sample. The total sample for wave 1 consists of 13,017 primary respondents with a main sample of 9,643 households collected in 1987-1988. Over sampling occurred for African Americans, Puerto Ricans, Mexican Americans, single parent families, families with stepchildren, cohabiting couples, and recently married persons. The subjects were individuals 19 years of age or older living in households in the United States who were able to be interviewed in English or in Spanish. Age 19 was used as the lower end cut-off, with the exception of married respondents under age 19, to reduce the
number of high school students as primary respondents. Not included in the sample were those in institutions or dorms and military barracks.

The data includes a main interview with the primary respondent. Seven parts of this interview were self-administered through short questionnaires. The interview and self-administered questionnaires incorporated objective information, subjective feelings, and retrospective information on a wide variety of topics related to family phenomena. Some examples of areas covered include: the marital and cohabitation experience; relationship and activities with spouse/partner; current income, assets, and debt; education; fertility; employment history; the quality of the relationship with parents, parents-in-law, and siblings; and several dimensions of “well-being”. A longitudinal follow up to this survey occurred in 1992-93. Therefore, one is also able to examine the effects of experience, characteristics, and attitudes on phenomena such as subsequent marital dissolution.

The National Survey of Families and Households (NSFH) was chosen for this study for a number of reasons. This data set is superior in size and representativeness of the American population. Past research on marital instability has largely incorporated samples of a much smaller nature, usually dealing with one to two states, and a younger age range. As is indicated above, research on mid and later life marital instability is extremely limited, largely due to the fact that as marital instability in this age range is less frequent than in younger years, in a smaller sample, the number of cases involving mid and later life instability are too few to be useful. Therefore, the
National Survey of Families and Household will allow analysis of longer marital duration groups involving marital instability. In addition, samples in previous research are largely cross-sectional while the NSFH allows for both cross-sectional and longitudinal analysis of phenomena. The NSFH also covers a broad range of topics. The simplicity, however, makes the survey easy to replicate. Furthermore, collaboration of leading authorities in the fields dealing with family phenomena also strengthens the utility of the survey by ensuring that appropriate and well structured questions are included in the survey.

The use of both interview data and self-administered questionnaire data also strengthens the data set. Response bias can be decreased due to the privacy of a self-administered questionnaire while the response rate can be increased through the urgings of the interviewer.

Sample

The sample is limited to all respondents in their first marriage and living with their spouse at the time of the 1987-88 NSFH survey. Three measures from the survey are used to establish the sample. First, marital status of the respondent is established from the household roster. Respondents are categorised under the five following marital status categories: (1) “married” (includes remarriage and spouse absent), (2) “separated due to marital problems”, (3) “divorced”, (4) “widowed”, and (5) “never married”. Only respondents under category “1 - married” are selected. To determine
that only those respondents in their first marriage are included in the sample, the question "Altogether, how many times have you been married?" is used. Similarly, response "1 - married, living with spouse" is used from the constructed variable MARCOHAB (marital/cohabitation status of respondent) in order to eliminate married subjects who are not living with their spouse at the time of the survey. This is done to further ensure that subjects who may have separated but not formally divorced are eliminated from the sample. A detailed description of the questions used for the analyses is provided in the appendix. For a description of these questions see appendix questions 1 to 3. Due to oversampling of newly marrieds, weighted data is used in the analyses. The selected sample size for wave 1 is 5,238 and the corresponding panel for wave 2 is 4,137 cases. The remaining characteristics pertain to wave 1 data. Age of the participants ranged from 16 to 90 years (mean = 45.11, median = 42, SD = 15.79). The sample is predominantly white (84.8%). There is an almost even distribution of male and female respondents (49.2% male). Thirty-nine and one half percent of the sample completed high school (mean = 12.65, SD = 3.05) with an additional 14.5% completing a two year college degree and 14.5% completing a Bachelor's degree. The average total couple income is $42,397.88 (SD = 49,391.02). Median marital duration is 19.67 years (mean = 268.75 months, SD = 186.23).
As with all secondary data sources, there are some limitations to the use of this survey. The most serious to the present study is that due to the broad range of topics covered in this survey, these topics are not covered as in depth as would be possible on a smaller survey. More specifically, the relationship between the determinants of marital instability could be examined in more depth in a survey dealing specifically with this phenomena. Similarly, some compromise must be made in terms of measurement. One must accept measures as designed and fit them into the current study.

**Dependent Variable: Marital Stability**

There are at least two ways of talking about marital stability. The first perspective, as Lewis and Spanier (1979) suggest, is as a dichotomous variable; either intact or not intact. The second perspective defines marital stability as tied to the probability of separation or divorce occurring in a relationship. Booth, Johnson, and Edwards (1983) have developed a marital instability index to measure this probability.

The marital instability scale developed by Booth, Johnson, and Edwards (1983) measures the probability of separation and divorce through both cognitive and behavioural measures. For this study, the perception of marital stability is used as a measure for the probability of separation/divorce. The NSFH has incorporated four questions dealing with perception of instability based on the marital instability index.
These are found in the self administered questionnaire part of the main interview and are listed as questions 4 to 7 in the appendix. The first question asks: "During the past year, have you ever thought that your marriage might be in trouble?". Responses include a "yes" or "no" answer. The second question inquires: "Do you still feel that way now?" and again is responded to by "yes" or "no" response categories. The third question: "During the past year, have you and your (husband/wife) discussed the idea of separating?" has three response categories: (1) "Yes, I brought it up the first time", (2) "Yes, my (husband/wife) brought it up the first time", and (3) "No". The fourth question asks for a prediction of the probability of separation or divorce occurring in the future. The question asks: "It is always difficult to predict what will happen in a marriage, but realistically, what do you think the chances are that you and your (husband/wife) will eventually separate or divorce?". Responses are based on a five category Likert type scale ranging from (1) "very low" to (5) "very high". The first two items are combined to form a three response category variable assessing trouble in the marriage, and the fourth item is recoded into three response categories. These items are then summed to form an index for marital stability. There are 4,546 cases included in this measure. Although this is intended as an index rather than a scale, a reliability test reveals an alpha of .83 for these items. The average score for marital stability is 6.19 (SD = 1.53) with a possible range of 1 to 7. This variable is significantly negatively skewed (skew = -1.94, SE Skew = .04) and logging procedures provide no
solution to this skew. Therefore, this variable is dichotomised with instability equal to zero and stability equal to one. The proportion with high stability is .7.

Dependent Variable: Marital Outcome

In addition to the marital stability index, longitudinal analysis of marital stability is measured through the use of three marital outcome measures from wave 2 of the NSFH. The first question determines whether or not the respondent is still married to their first spouse. The question asks: "Next we want to find out about any changes in your marital status since NSFH1. At that time you were married to (spouse’s name). Are you still married (and living with) (him/her)?". Responses include a “yes” or “no” answer. The second and third questions determine how the marriage ended. The question asks: “Did that marriage end in ...” with the following response categories: (1) “divorce?”, (2) “separation with no divorce?”, and (3) “widowhood?”.

This measure is consistent with Lewis and Spanier’s (1979) definition of marital stability as “the formal or informal status of a marriage as intact or non intact” (Lewis and Spanier, 1979, p. 269). According to Lewis and Spanier, a stable marriage, thus, can only be terminated by the natural death of at least one spouse. An unstable
marriage occurs when at least one spouse terminates the marriage through separation, formal divorce, desertion, or annulment. Also consistent with this definition, for this study, both separation and divorce will be included as measures of instability in the marital outcome measure. The inclusion of separation, however, can be problematic as many couples separate and get back together a number of times before deciding whether or not to formally divorce. However, including only those who formally divorce may bias the outcome and limit the sample for the longer duration marriage group since some of these individuals may not be as likely to go through the trouble of seeking formal divorce unless they plan to remarry. As the marriage market decreases for the elderly, especially for women, older subjects may not seek formal divorce and thus, would be excluded from the sample.

It is important to note that the analyses involving this measure may be affected by sample attrition in wave 2 of the NSFH. This is especially likely to be a problem for significance tests. More importantly, however, another problem with this measure occurs with varying levels of analysis. Marital quality, alternatives, and barriers are all measured at the individual level of analysis, whereas, the act of separation/divorce is at the dyadic level. Therefore, results obtained from this measure are only offered to be compared with findings based on the marital stability index and must be interpreted with caution. Within the 5 years following the first wave, of 4,137 cases remaining after attrition, 368 (8.9%) respondents separated or divorced. Thus, the proportion with high stability on this measure is .91. The dichotomised scales for marital stability and
marital outcome are positively correlated at .21, \( p < .001 \). This relationship is weaker than expected, but may have been severely attenuated by the extreme splits on the variables.

**Independent Variable: Marital Quality**

Marital quality is defined by Lewis and Spanier (1979) as "a subjective evaluation of a couple's relationship ... [where] the range of evaluations constitutes a continuum reflecting numerous characteristics of marital interaction and marital functioning" (1979, p. 269). Lewis and Spanier argue that marital quality can be used to "encompass the entire range of terms (i.e., marital 'satisfaction', 'happiness', 'role strain and conflict', 'communication', 'integration', 'adjustment', etc...) ... [used as] dependent variables in marriage research" (1979, p. 269). Their argument is that all of these concepts "represent qualitative dimensions and evaluations of the marital relationship ... [and empirically] are highly intercorrelated" (Lewis and Spanier, 1979, p. 269).

Fincham and Bradbury (1987) indicate that a serious problem with marital quality measures occurs when such a wide variety of items are used in the measure of marital quality. Often items measuring marital quality overlap with items used as measures for independent variables.

Current attempts to establish the correlates of marital quality ... and thereby to specify the "meaning" that is to be accorded this
construct, are often beset with problems... These attempts tend to be tautological because items that assess the correlate are often included in the measure of marital quality. (Fincham and Bradbury, 1987, p. 801)

For example, in their study testing Lewis and Spanier’s theory of marital quality and marital stability, White and Booth (1991) confound a measure of barriers (shared social network) with an item used in their measurement of marital happiness (spouse as someone to do things with). Fincham and Bradbury, therefore, suggest measuring marital quality solely as a global evaluation of one’s marriage to avoid confounding. Udry (1983) in utilizing Orden and Bradburn’s (1968) satisfaction and tension scales in conjunction with a global measure of marital happiness, found that the Orden and Bradbury scales were poor predictors of marital disruption. Additional support for the use of a global measure of marital happiness is found in Goodwin (1992). The author found that using only item 31 of the Dyadic Adjustment Scale, developed by Spanier (1976), “happiness in the marriage” highly correlates with total adjustment scores and could differentiate between “distressed” and “non distressed” couples.

Lewis and Spanier (1979) further define marital quality by indicating that the rewards and costs defining marital quality involve intradyadic as opposed to extradyadic factors. This is consistent with Levingers’ use of the term attractions. Assessment of the profitability of the attractions to the marital relationship depend on its perceived rewards relative to its perceived costs.
[Rewards] include the receipt of resources such as love, status, information, goods, services, or money - as conceived in Foa's (1971) scheme of interpersonal resources. The relationship may also bring one support, security, and consensual validation. Costs ... include one's time and energy and the various other expenditures demanded from staying in a relationship. (Levinger, 1976, p. 25, emphasis added)

Levinger (1965, 1976) also proposes intradyadic measures of marital attractions. These include, social similarity, husband's occupational status, husband's educational status, husband's income, home ownership, companionship, sexual enjoyment, and esteem for spouse. Some of these measures, however, have a gender bias. For example, husband's occupational status, educational status, and income may be seen by the wife as attractive resources of the husband but these items do not make the wife attractive to the husband. Perhaps wife's occupational status, educational status, and income are seen as attractants by the husband. Presence of this gender bias is still evident in recent literature. For example, White and Booth (1991) use "wife's income" as a measure for alternatives and "wife's unemployment" as a measure for barriers fully excluding husbands income and unemployment in their measures.

Although there is support for the use of a global measure of marital quality (Goodwin, 1992; Udry, 1983) and Lewis and Spanier's definition of marital quality is an evaluation of the marital relationship, in this study, marital quality is measured by a
combination of evaluative and behavioural questions describing the marital relationship, including a global evaluation question. The behavioural questions are incorporated despite Lewis and Spanier's definition of marital quality as an evaluation of the marital relationship because the NSFH has only one question measuring the global evaluation of the marriage. Testing the models with one question defining marital quality may be problematic. Care was taken to not include questions that may confound with variables to be considered as alternatives and barriers.

The global measure of marital quality asks: "Taking things all together, how would you describe your marriage?". Responses are rated on a seven point scale from (1) "very unhappy" to (7) "very happy".

Four questions on fairness in the relationship are considered. Respondents are asked: "How do you feel about the fairness in your relationship in each of the following areas: household chores, working for pay, spending money, and child care." Response categories include: (1) "very unfair to me", (2) "somewhat unfair to me", (3) "fair to both", (4) "somewhat unfair to him/her", and (5) "very unfair to him/her".

Two questions ask about spousal intimacy. The first question asks: "During the past month, about how often did you and your husband/wife spend time alone with each other, talking, or sharing an activity?". Response categories include: (1) "never", (2) "about once a month", (3) "two or three times a month", (4) "about once a week", (5) "two or three times a week", and (6) "almost every day". The second question asks:
"About how often did you and your husband/wife have sex during the past month?".

Respondents answer number of times in the past month.

Seven questions on disagreements are considered. Respondents are asked:

"The following is a list of subjects on which couples often have disagreements. How often, if at all, in the last year have you had open disagreements about each of the following: household tasks, money; spending time together, sex, having a(another) child, in-laws, and the children.". Response categories include: (1) “never”, (2) “less than once a month”, (3) “several times a month”, (4) “about once a week”, (5) “several times a week”, (6) “almost everyday”.

Finally four questions on conflict resolution are considered. Respondents are asked: “There are various ways that married couples deal with serious disagreements. When you have a serious disagreement with your husband/wife, how often do you: just keep your opinions to yourself, discuss your disagreements calmly, argue heatedly or shout at each other, and end up hitting or throwing things at each other?”. Response categories include: (1) “never”, (2) “seldom”, (3) “sometimes”, (4) “very often”, and (5) “always”.

Several questions were omitted from the final measure of marital quality due to poor reliability and a large number of missing cases. For the final measure of marital quality, 10 items were included: (1) the global measure of marital happiness, (2) fairness with household chores, (3) fairness with spending money, (4) time spent alone with spouse, (5) disagreement with household tasks, (6) disagreement with money, (7)
disagreement about spending time together, (8) discussing disagreements calmly, (9) arguing/shouting, and (10) hitting/throwing things at each other during a disagreement.

These items are standardised and summed into a marital quality index. See appendix questions 11 to 15. Four thousand four hundred and seventy-eight cases are included in this measure. A reliability test reveals an alpha of .73 for these items. There is variation in the distribution of scores around the mean, however, the distribution is significantly negatively skewed at -1.11 (SE Skew = .04). Given that marital quality is an independent variable, this negative skew is not severe enough to warrant special transformation. A principal components analysis reveals three factors, disagreement (3 items), satisfaction (4 items), and conflict resolution (3 items), showing that the scale is multidimensional. Since marital quality has been referred to by Lewis and Spanier as the sum total of all attractions to and repulsions away from a relationship, the multidimensionality of this scale is thought to be a strength rather than a weakness.

Moderating Variables: Alternatives and Barriers

Lewis and Spanier (1979) state that extradyadic factors affect the stability of the marriage by acting as moderating variables. “The strength of the alternate attractions for the individual outside the marriage are balanced against the external pressures [barriers] to determine whether or not the marital dyad will have high or low marital stability” (Lewis and Spanier, 1979, p. 287, emphasis added). Alternatives are
described as pull factors forcing an individual out of a relationship while barriers are push factors keeping an individual in a relationship. Examples of barriers they provide include: "strict divorce laws, strong social stigma, strict adherence to or influence from restrictive religious doctrine, low evaluation of nonmarital alternatives, high degree of commitment to marriage, and high tolerance for marital conflict and tension" (Lewis and Spanier, 1979, p. 287). Alternatives given such as "liberal divorce laws, little social stigma, little or no adherence to or influence from religious doctrine, high evaluation of nonmarital alternatives, low degree of commitment to marriage, and low tolerance for marital conflict and tension" (Lewis and Spanier, 1979, p. 287) are the exact opposite. Therefore, Lewis and Spanier do not distinguish between alternatives and barriers. They simply represent two ends of a continuum. This is further depicted by their propositions:

Alternative attractions to a marriage negatively influence the strength of the relationship between marital quality and marital stability ... conversely ... external pressures to remain married positively influence the strength of the relationship between marital quality and marital stability. (Lewis and Spanier, 1979, pp. 289-290, emphasis added).

However, Lewis and Spanier do indicate that alternatives are "pull" factors while barriers are "push" factors thereby contradicting that alternatives and barriers are not
distinguishable. In addition, if alternatives and barriers are extradyadic factors then commitment to marriage and tolerance for conflict are not appropriate measures of alternatives or barriers since these are not based on external forces.

Consistent with Lewis and Spanier, Levinger (1965, 1976) also views alternatives and barriers as forces outside the marital relationship. Levinger, in contrast to Lewis and Spanier, however, do not view alternatives and barriers as opposites but rather distinguish between the two. Alternatives are "forces that pertain to relations with parents, children, lovers, friends, enemies, employers, employees, or any of a host of alternate persons" (Levinger, 1965, p. 20). These relationships may compete with the marital relationship and, thus, weaken marital attractions. Barriers, on the other hand, are forces that keep people together. Levinger refers to these as restraining forces. "Barriers lessen the effect of temporary fluctuations in interpersonal attraction; even if attraction becomes negative, barriers act to continue the relationship" (Levinger, 1976, p. 26). "Barriers ... cannot theoretically be less than zero; they affect the relationship only insofar as either member contemplates its termination" (Levinger, 1976, p. 29).

Examples of alternatives as proposed by Levinger (1965, 1976) include: wife's independent social and economic status, independence and self actualisation, preferred alternate partner/friends, disjunctive kin affiliations, and opposing religious affiliation. Once again, however, the use of measures for the concepts do not fit the
definition. Independence and self actualisation are based on intradyadic factors (i.e. resources) and are not external to the marriage.

Examples of barriers provided by Levinger include: financial expenses, obligation towards the marital bond, religious constraints, social pressures, obligation to dependent children, joint church attendance (as this leads to connected affiliations), and primary group affiliation. These measures all work within the definition of barriers.

Udry (1983), Green and Sporakowski (1984), and White and Booth (1991) all provide empirical tests of Lewis and Spanier’s (1979) theory of marital quality and marital stability. Within the present definitions of alternatives and barriers, however, not all of the measures they use to test the theory are entirely appropriate. For example, Udry (1983) deals strictly with alternative attractions. These are measured by a marital alternatives scale assessing the likelihood of: (1) obtaining another partner better or as good as the present partner, (2) being satisfied without a partner, (3) being sad but getting over the relationship break-up quickly, (4) being able to live as well as you do presently, (5) being able to take care of yourself, (6) being better off economically, (7) having a bleak future, (8) having the availability of many other partners you could be happy with, (9) being able to support yourself at the same level as now, and (10) having your life ruined. [See Udry (1991) for further description of the scale.] Most of these items deal with the opportunity of obtaining another relationship or status which is consistent with the definition of alternatives. However, items such as “… you would be sad, but get over [the break-up of the relationship] quickly, … [y]our
prospects for a happy future would be bleak ... [and] your life would be ruined" (Udry, 1981, p. 892), are evaluative questions assessing how the person would feel about marital dissolution occurring to them rather than measuring pull factors, or factors that would tempt one out of a relationship. In addition, as suggested by Johnson (1985), many of the items measured are "heavily confounded with attraction to the current relationship since what they tap is essentially the difference between one's current life and the life one would anticipate if the relationship were to end" (Johnson, 1985, p. 5).

Green and Sporakowski (1984) measure the frequency of attraction to the following six items: "personal freedom, sexual relations, spending money, enjoyment from friends, respect from other people, and relationship with parents" (Green and Sporakowski, 1984, p. 81). Once again it is questionable whether "spending money", "respect from other people", and "relationship with parents" are good measures of alternative attractions.

White and Booth (1991) use only two measures of alternatives: (1) wife's income and (2) perception of remarriage probability using the question: "How difficult do you think it would be for you to find another (husband/wife)?" (White and Booth, 1991, p. 11). Wife's income, however, is not an extradyadic factor, rather it is a resource. In addition, once again there is a gender bias in the use of this variable.

Problems with measures of barriers are also evident. For example, Green and Sporakowski (1984) use nine measures of barriers to dissolution: "obligations to marital vows, religious beliefs and obligations to dependent children, as well as ...
financial costs of divorce and the pressure from five social networks: ... neighbours, ... workmates, the people in ... church, ... relatives and ... friends" (Green and Sporakowski, 1984, p. 82). For the most part, these measures work within the definition of barriers. However, "obligations to marital vows" is best described as commitment to marriage which is not an extradyadic factor but instead taps into psychological reasons for remaining in the marriage. White and Booth (1991), similarly, use marital commitment as an indicator of barriers. Their measures of barriers include: "presence of young children, wife's unemployment, shared social network, financial ties, and conservative values" (White and Booth, 1991, p. 10). "Financial ties" is measured by "home ownership" and the couples "assets". "Conservative values" is measured by "religiosity" and "commitment to marriage". As indicated above "commitment to marriage" is not an extradyadic factor. Neither are "wife's unemployment" or "financial ties". Both of these measures are intradyadic measures of resources. Therefore, the outcomes of these studies as tests of the theoretical models must be considered with caution since not all of the measures used are consistent with the definitions of the concepts. Thus, these empirical tests do not provide definitive results.

Alternatives. In this study, several variables are considered as alternative attractions: (1) the evaluation of single life as a desired status, (2) occupational involvement, (3) and participation in outside activities and organisations. All of these
variables are extradyadic and are forces that may act to pull individuals out of a marital relationship.

In White's (1990) review of the determinants of divorce, it is suggested that family has become less important to North American society. Therefore, there is a decrease in the propensity to marry (Espenshade, 1985). Single life may be seen as an appealing alternative to marriage.

Evaluation of single life as a desired status is measured by one question. Respondents are asked: "Please indicate how much you agree or disagree with the following statement: It's better for a person to get married than to go through life being single." Responses are based on a five point Likert type scale ranging from (1) "strongly agree" to (5) "strongly disagree".

Two reviews of the divorce literature (Raschke, 1987; and White, 1990) indicate mixed findings in terms of occupation and its relationship to marital instability. A "positive relationship between unemployment and marital instability" (Raschke, 1987, p. 603) was found by Cherlin (1979). In addition, lower status jobs are also related positively to marital instability (Furstenberg, 1976). Contradictory findings are reported for women's labour force participation, however. Booth, Johnson, White, and Edwards (1984) and Spitze and South (1985), for example, found that women's labour force participation increases the probability of marital dissolution while Smith and Meitz (1985) and South and Spitze (1986), on the other hand, found that it decreases the probability of divorce. The effect of occupational involvement on instability is
questioned. Strong involvement with an occupation is seen as an alternative attraction.

Time and energy spent at a job as well as rewards received from the job may interfere with the marital relationship.

In this study, occupational involvement is measured by three items. The first item asks: "How many hours a week do you usually work". Responses are based on the number of hours worked per week. The remaining two questions deal with evaluations of the job. The first question asks: "How would you describe the work you do at your paid job?". Six sets of descriptor words are evaluated: (a) "interesting - boring", (b) "appreciated - unappreciated", (c) "overwhelming - manageable", (d) "complicated - simple", (e) "lonely - sociable", and (f) "poorly done - well done". Responses are rated on a seven point scale with the first word in the pair (e.g. interesting) having a value of 1 and the last word in the pair (e.g. boring) having a value of 7. The second evaluative question asks: "Please indicate how much you agree or disagree with the following statement: The job I do is one of the most satisfying parts of my life". Responses range on a five point Likert type scale from (1) "strongly agree" to (5) "strongly disagree".

Just as occupational involvement, participation in outside activities and organisations is also considered an alternative which may compete with the marital relationship. Increased participation provides opportunities to meet an alternative partner and/or may weaken the marital relationship due to decreased time and activities spent with the spouse. Participation in these activities and organisations are
measured by two clusters of questions. The first cluster of questions asks: “About how often do you do the following things: (a) spend a social evening with people you work with, and friends who live outside your neighbourhood?; (b) go to a bar or tavern; and (c) participate in a group recreational activity such as bowling, golf, square dancing etc.”. Response categories include: (1) “never”, (2) “several times a year”, (3) “about once a month”, (4) “about once a week”, and (5) “several times a week”. The second cluster of questions asks: “Here is a list of various kinds of organisations. How often, if at all, do you participate in each type of organisation? (a) fraternal groups, (b) service clubs, (c) veteran’s groups, (d) political groups, (e) labour unions, (f) sports groups, (g) youth groups, (h) school related groups, (i) hobby or garden clubs, (j) school fraternities or sororities, (k) nationality groups, (l) farm organisations, (m) literary, art, study or discussion groups, and (n) professional or academic societies. Response categories include: (1) “never”, (2) “several times a year”, (3) “about once a month”, (4) “about once a week”, and (5) “several times a week”.

The entire NSFH sample is analysed for participation in activities and organisations, comparing percent of participation for marrieds versus singles, in order to determine which activities/organisations should be included in the alternatives index by the fact that a disproportionate number of non-marrieds attend these activities/organisations. Singles include separated, divorced, widowed, and never married respondents. A significant difference is found between the two groups but this difference is due to the rate of attendance rather than the proportion of attendance.
The proportion of attendance for singles and marrieds approximates the proportion of singles and marrieds in the population, therefore, this comparison is not helpful in determining which activities/organisations would be good alternatives. Therefore, only the measures of occupational involvement are scaled prior to further examination through logistic regression analysis. Some of the items are omitted due to poor reliability and missing cases. Therefore, the final scale for job satisfaction includes four items: (1) paid job is interesting/boring, (2) paid job is lonely/sociable, (3) paid job is appreciated/unappreciated, and (4) paid job is poorly done/well done. The scale for job satisfaction has an alpha of .97 with a mean of 14.51 (SD = 11.57). The range of possible scores is from 0 to 28. This measure, in addition to the measure for single status, and all of the activities and organisations are then entered into a logistic regression equation with marital quality, age, and race to identify those with significant effect on marital stability independent of marital quality, age, and race effects. This equation is as follows: $MS = a + b_1MQ + b_2Age + b_3Race + b_4Alt1 + b_5Alt2 + b_6Alt3\ldots$,

where $MS =$ marital stability, $MQ =$ marital quality, and $Alt =$ alternatives.

Items significant at the .1 probability level for marital stability and negative in direction are included in the index. See Table 1. Therefore, from the regression results, five items from the pool of alternatives are standardised and summed into an index of alternatives. These measures include preferred single status; going out with co-workers; going to bars/taverns; participating in school fraternities/sororities; and
participating in literary, art, study, and discussion groups. See appendix questions 16 to 18 for a detailed description of alternatives included in the alternatives index.

Separate logistic regression tests are run for males and females to see if there are any differences in alternatives that are relevant for each. [The model testing, however, is based on the amalgamated measure for alternatives]. For males, five measures of alternatives are significant. These included preferred single status, going out with co-workers, going to a bar/tavern, participating in sports groups, and my job is one of the most satisfying parts of my life. For females, two measures of alternatives are relevant. These included going to a bar/tavern; and participation in literary, art, study, and discussion groups.

The amalgamated measure of alternatives, therefore, includes measures relevant for both genders: three measures that are specific for males and two measures that are specific for females. The only common alternative is going to a bar/tavern. Due to the low number of items and extreme skews on some items (especially for females), separate scales for males and females are not constructed. Development of such scales may be warranted in future research.
Table 1

Logistic Regression Coefficients for the Effects of Potential Measures of Alternatives on Marital Stability Controlling for Marital Quality, Age, and Race

<table>
<thead>
<tr>
<th>Variable</th>
<th>All</th>
<th>Males</th>
<th>Females</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>b</td>
<td>R</td>
<td>b</td>
</tr>
<tr>
<td>Single status</td>
<td>-0.110**</td>
<td>-0.03</td>
<td>-0.245***</td>
</tr>
<tr>
<td>Job satisfaction</td>
<td>0.00</td>
<td>0.00</td>
<td>0.009</td>
</tr>
<tr>
<td>Job most satisfying part of life</td>
<td>0.066</td>
<td>0.00</td>
<td>0.160**</td>
</tr>
<tr>
<td>Going out coworkers</td>
<td>-0.093*</td>
<td>-0.02</td>
<td>-0.156**</td>
</tr>
<tr>
<td>Going out friends</td>
<td>0.047</td>
<td>0.00</td>
<td>0.081</td>
</tr>
<tr>
<td>Going out bar/tavern</td>
<td>-0.155***</td>
<td>-0.04</td>
<td>-0.120*</td>
</tr>
<tr>
<td>Participation group rec. activities</td>
<td>0.040</td>
<td>0.00</td>
<td>0.067</td>
</tr>
<tr>
<td>Participation fraternal groups</td>
<td>0.052</td>
<td>0.00</td>
<td>0.095</td>
</tr>
<tr>
<td>Service clubs</td>
<td>0.075</td>
<td>0.00</td>
<td>-0.090</td>
</tr>
<tr>
<td>Veterans groups</td>
<td>0.059</td>
<td>0.00</td>
<td>0.041</td>
</tr>
<tr>
<td>Political groups</td>
<td>-0.142</td>
<td>0.00</td>
<td>-0.258</td>
</tr>
<tr>
<td>Labour unions</td>
<td>0.101</td>
<td>0.00</td>
<td>0.208</td>
</tr>
<tr>
<td>Sports groups</td>
<td>-0.023</td>
<td>0.00</td>
<td>-0.126*</td>
</tr>
<tr>
<td>Youth groups</td>
<td>0.066</td>
<td>0.00</td>
<td>0.137</td>
</tr>
<tr>
<td>School groups</td>
<td>-0.063</td>
<td>0.00</td>
<td>-0.012</td>
</tr>
<tr>
<td>Hobby/garden clubs</td>
<td>0.038</td>
<td>0.00</td>
<td>-0.021</td>
</tr>
<tr>
<td>School fraternities/sororities</td>
<td>-0.288*</td>
<td>-0.02</td>
<td>-0.275</td>
</tr>
<tr>
<td>Nationalistic groups</td>
<td>-0.018</td>
<td>0.00</td>
<td>-0.174</td>
</tr>
<tr>
<td>Farm organisations</td>
<td>0.275</td>
<td>0.01</td>
<td>0.083</td>
</tr>
<tr>
<td>Literary/art/study groups</td>
<td>-0.185**</td>
<td>-0.03</td>
<td>-0.088</td>
</tr>
<tr>
<td>Professional/academic societies</td>
<td>-0.093</td>
<td>0.00</td>
<td>-0.084</td>
</tr>
</tbody>
</table>

N          3306     1534     1772

*p < .1. **p < .05. ***p < .01.
Four thousand three hundred and six cases are utilised in the alternatives index. The mean is .01 (SD = 2.55) with a possible range from -3.31 to 26.53. This measure is significantly positively skewed at 1.4 (SE Skew = .04).

**Barriers.** Several variables are also included as potential measures of barriers. These include: contact with siblings, contact with parents, contact with children, several measures of religiosity and religious fundamentalism, and region. These variables are extradyadic and involve restraining forces, or forces that keep individuals in a marital relationship.

White (1990) states that social "integration increases the likelihood that people will follow social norms in choosing an appropriate spouse and fulfilling their marital roles, and decreases the likelihood that they will court community stigma by divorcing". (White, 1990, p. 905). In the same way, kinship embeddedness is seen as a barrier. Increased involvement with family and kin reinforces the marriage by increasing the joint support network of the couple and by providing an arena for strong social sanctions against marital dissolution. Kinship embeddedness is measured by contact with full siblings, mother, father, and children 19 and older (those living outside the household) as well as the number of children and the number of relatives living with the respondent in the household.

The presence of siblings, mother, father, and children 19 years or older outside the household is first determined by three questions. The first, "How many [full
brothers and sisters] are still living?”, is responded to by a number response. The second question determines if the mother or father are still living: “Is your (mother/father) ... (1) still living or (2) deceased?”. The third question asks: “Do you have any sons or daughters age 19 or older living elsewhere, (other than those away at school)?” and is simply responded to by a “yes” or “no”. Contact with full siblings is determined by two questions. The first question asks: “During the past twelve months, how often did you see any of your full brothers and sisters? Was it (1) not at all, (2) about once a year, (3) several times a year, (4) one to three times a month, (5) about once a week, or (6) several times a week.” The second question asks: “During the past twelve months, how often did you talk on the telephone or receive a letter from any of your full brothers and sisters?” Response categories are the same as the previous question. Identical series of questions are asked for contact with the mother, father, and children of the respondent aged 19 years or older. Scores for contact with parents, contact with siblings, and contact with children are computed.

The presence of children in the household has been found to prevent or delay dissolution (White, Booth, and Edwards 1986) especially for first children less than 1 year old (Waite, Haggstrom, and Kanouse, 1985; White and Booth, 1985). The number of children in the household that are six years old and under is established using (1) the “relationship to respondent of other persons on the full-time household roster” and (2) “age of other persons on the full-time household roster” calculated in years. There are twenty-three classifications of relationship to respondent: (1)
"husband or wife", (2) "lover/partner (opposite sex)", (3) "biological child", (4) "step-child", (5) "adopted child", (6) "foster child", (7) "child of lover/partner", (8) "son-in-law or daughter-in-law", (9) "parent", (10) "step-parent", (11) "parent-in-law", (12) "grandparent", (13) "brother or sister", (14) "step-brother or step-sister", (15) "half-brother or half-sister", (16) "brother-in-law or sister-in-law", (17) "grandchild", (18) "other relative", (19) "roommate", (20) "friend", (21) "other nonrelative", (22) "ex-spouse", and (23) "same sex lover/partner". In addition, using the same measures, the number of all other children living in the household (those older than 6 years) is determined, as well as the number of other kin living in the household.

As suggested by Lewis and Spanier (1979), adherence to or influence from religious doctrine is believed to keep a couple in a relationship thereby acting as a barrier to dissolution. Glenn and Supancic (1984) found that church attendance decreased the probability of divorce. In this study, religiosity is measured by the following question: "How often do you attend religious services?" Responses are recorded as "number of times" per one of the following options: (1) "day", (2) "week", (3) "month", and (4) "year". Participation in church groups is also measured. The question asks: "How often, if at all, do you participate in church-affiliated groups?" The response categories include: (1) "never", (2) "several times a year", (3) "about once a month", (4) "about once a week", and (5) "several times a week". Scores for church attendance and participation in church affiliated groups are standardised and
summed to form a measure of religiosity. The alpha for this measure is .77 and the mean is .00 (SD = 1.8) with a possible range of scores from -2.26 to 3.9.

Three measures of religious fundamentalism are also included. For all three questions, respondents are asked to: "Please indicate how much you agree or disagree with each of the following statements". The first question states: "The Bible is God's word and everything happened or will happen exactly as it says". Response categories include: (1) "strongly agree", (2) "agree", (3) "neither agree nor disagree", (4) "disagree", and (5) "strongly disagree". The remaining two questions state: "The Bible is the answer to all important human problems" and "I regard myself as a religious fundamentalist". Response categories are the same as indicated above. These three items are scaled into a measure of religious fundamentalism. The alpha for this measure is .83 with a mean of 9.65 (SD = 3.12) with a possible range of scores from 3 to 15. A measure of region is also included. Respondents were categorised into the following categories: (1) Northeast, (2) North Central, (3) South, and (4) West.

As was done with the alternative measures, contact with parents, contact with siblings, contact with children, number of young children in the household, number of older children in the household, number of kin in the household, religiosity, and region are all entered into a logistic regression equation with marital quality, age, and race. This is done to identify barriers with a significant positive effect on marital stability independent of marital quality, age, and race effects. Religious fundamentalism is
excluded due to the large number of missing cases and its correlation with religiosity.

The equation is as follows:

\[ MS = a + b_1 MQ + b_2 \text{Age} + b_3 \text{Race} + b_4 \text{Bar1} + b_5 \text{Bar2} + B_3 \text{Bar3} \ldots \text{where Bar = barriers.} \]

Once again items significant at the .1 level for marital stability are included in the index (See Table 2).
Table 2

Logistic Regression Coefficients for the Effects of Potential Measures of Barriers on Marital Stability Controlling for Marital Quality, Age, and Race

<table>
<thead>
<tr>
<th>Variable</th>
<th>All</th>
<th>Males</th>
<th>Females</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>b</td>
<td>R</td>
<td>b</td>
</tr>
<tr>
<td>Sibling contact</td>
<td>.013</td>
<td>.00</td>
<td>.061</td>
</tr>
<tr>
<td>Parent contact</td>
<td>.005</td>
<td>.00</td>
<td>.035</td>
</tr>
<tr>
<td>Child contact</td>
<td>.055</td>
<td>.00</td>
<td>.204***</td>
</tr>
<tr>
<td>Religiosity</td>
<td>.130***</td>
<td>.08</td>
<td>.190***</td>
</tr>
<tr>
<td>Young child in house</td>
<td>.141**</td>
<td>.02</td>
<td>.196**</td>
</tr>
<tr>
<td>Older child in house</td>
<td>-.005</td>
<td>.00</td>
<td>.016</td>
</tr>
<tr>
<td>Kin in house</td>
<td>.218*</td>
<td>.02</td>
<td>.221</td>
</tr>
<tr>
<td>Region</td>
<td>-.055</td>
<td>.00</td>
<td>-.303*</td>
</tr>
</tbody>
</table>

N: 3833, 1744, 2089

*p < .1, **p < .05, ***p < .01.
Three items are standardised and summed into the barrier index. These include the scale for religiosity, young children living in the household, and kin living in the household. The mean for this index is .01 (SD = 1.71) and the distribution is positively skewed at 1.07 (SE Skew = .01). See appendix questions 19 to 23 for a detailed list of barriers included in the barrier index.

Once again, separate regressions are run for males and females to see if there are differences in the barriers that are relevant. Three measures of barriers are relevant for males: the scale for religiosity, young children in the household, and contact with children. (Region is also significant for males but in the opposite direction than predicted). One barrier is relevant for females; the scale for religiosity. Therefore, the amalgamated measure includes one measure that is relevant for both males and females, one other measure that is significant only when measured for the combined group (kin in the household), and one measure that is significant only for males. However, in comparing the b's, note that the gender specific coefficients are largely consistent in strength and direction.

**Control Variables**

Based on two reviews of the divorce literature (Raschke 1987, and White 1990), the following control variables are shown to be related to divorce and are available as measures from the NSFH: (1) duration of marriage, (2) commitment to marriage, (3) age of respondent, (4) assets, (5) debt, (6) total couple income, (7) race, (8) gender, (9)
occupational socio-economic status, (10) completed education, and (11) cohabitation prior to marriage.

Due to the large number of control variables and the possibility of multicollinearity occurring, control variables are included in the regression analyses only if they are significantly correlated with marital stability and/or marital outcome and one other of the following at the .05 probability level: (1) the marital quality measure, (2) a dichotomised high alternatives measure and, (3) a dichotomised high barriers measure. On the bases of this analysis, duration, commitment, age, assets, completed education, and cohabitation are included. Due to the large number of missing cases for assets, missing cases are mean substituted for the control variables. (For marital stability, 6 cases were missing for duration, 133 for commitment, 0 for age, 819 for assets, 14 for completed education, and 3 for cohabitation. Similarly, for marital outcome, the respective number of missing cases are as follows: 5 for duration, 205 for commitment, 0 for age, 708 for assets, 10 for completed education, and 4 for cohabitation). Correlations with marital stability and marital outcome are then rerun to ensure these correlations are not altered drastically by the mean substitution. (See Table 3).
### Table 3

**Pearson Correlation Coefficients for the Effects of Control Variables on Marital Stability and Marital Outcome, With and Without Mean Substitution**

<table>
<thead>
<tr>
<th>Variable</th>
<th>Marital stability Without substitution</th>
<th>Marital stability With substitution</th>
<th>Marital outcome Without substitution</th>
<th>Marital outcome With substitution</th>
</tr>
</thead>
<tbody>
<tr>
<td>Duration</td>
<td>.274*** (n = 4540)</td>
<td>.274*** (n = 4546)</td>
<td>.230*** (n = 4132)</td>
<td>.230*** (n = 4137)</td>
</tr>
<tr>
<td>Commitment</td>
<td>.214*** (n = 4413)</td>
<td>.211*** (n = 4546)</td>
<td>.094*** (n = 3932)</td>
<td>.092*** (n = 4137)</td>
</tr>
<tr>
<td>Age</td>
<td>.276*** (n = 4546)</td>
<td>.276*** (n = 4546)</td>
<td>.245*** (n = 4137)</td>
<td>.245*** (n = 4137)</td>
</tr>
<tr>
<td>Assets</td>
<td>.073*** (n = 3727)</td>
<td>.067*** (n = 4546)</td>
<td>.105*** (n = 3429)</td>
<td>.099*** (n = 4137)</td>
</tr>
<tr>
<td>Completed education</td>
<td>-.074*** (n = 4532)</td>
<td>-.074*** (n = 4546)</td>
<td>.008*** (n = 4127)</td>
<td>.008*** (n = 4137)</td>
</tr>
<tr>
<td>Cohabitation</td>
<td>-.179*** (n = 4543)</td>
<td>-.179*** (n = 4546)</td>
<td>-.161*** (n = 4133)</td>
<td>-.161*** (n = 4137)</td>
</tr>
</tbody>
</table>

*p < .10. **p < .05. ***p < .01.*
Since duration and age are highly correlated with one another, \((r = .95)\) a problem of multicollinearity is evident. Therefore, these variables can not be included in the same model so the final model is tested twice, once with duration and once with age included in the list of control variables. See appendix questions 24 to 34.

Duration. As suggested by White's (1990) review of divorce determinants, empirical research has shown that the probability of marital instability is less for longer duration marriages (Fergusson, Honwood, and Shannon, 1984; Thornton and Rogers, 1987). However, it is unclear whether the determinants of marital instability change with marital duration. Booth, Johnson, White, and Edwards (1986) found that determinants such as health, income, and social integration have less effect on longer duration marriages in terms of affecting instability probabilities. South and Spitze (1986), on the other hand, found no differences.

There are two ways used in the literature to measure duration: (1) years married and (2) date of marriage. Since this study is restricted to first marriages only, the two measures are identical. Therefore, to determine duration of marriage, responses to the question: "In what month and year were you married (for the first time)?" are subtracted from the "month of interview" and "year of interview" measures. All of these measures are coded into century months. The scores for marital duration ranged from 0 to 828 months (0 to 69 years). The mean is 268.75 (SD = 186.04) or 22.4 years. The skew for this distribution is positive at .46 (SE Skew = .03).
Commitment to marriage. Johnson (1985) develops a theoretical framework for commitment in marriage. He divides commitment into two components: personal commitment and structural commitment, and later divides this into a third component, moral commitment.

Personal commitment is defined as personal dedication to the continuation of a line of action, and, when applied to the maintenance of relationships, is identified as consisting of four components: (1) attraction to one's partner; (2) attraction to the relationship; (3) definition of self in terms of the relationship; and (4) moral obligation to the maintenance of the relationship.

(Johnson, 1985, p. 3)

These components generally fit with Levinger's idea of marital attractions except, as Johnson (1985) indicates, Levinger places moral obligation under the classification of barriers. Structural commitment, in turn, is defined as:

events or conditions which constrain an individual to continue a line of action once he or she has initiated it, regardless of his/her personal commitment to it ... [F]our components can be identified:

(1) irretrievable investments, (2) termination procedures, (3) social pressures, and (4) attractiveness of available alternatives.

(Johnson, 1985, p. 4)
These components are compatible with alternatives and barriers to dissolution.

Johnson further divides commitment into a third category because the fourth component of the personal commitment measure, moral obligation to the maintenance of the relationship, has both a personal and structural component to it. The sense of constraint deals with the structural component. However, the constraint is internal thereby giving it a personal component. "This sense of moral obligation has been considered part of personal commitment because of its internal locus; the feeling of constraint here is one of self constraint, clearly different from the sense of causal locus when others invoke moral pressures to force one to maintain a relationship (Johnson, 1985, p. 4)."

Since personal commitment is taken into account in the models by the marital quality measure and structural commitment is taken into account by the alternatives and barriers measures, it is moral commitment that will be controlled for. Commitment to marriage is measured by the following question: Respondents are asked to "please indicate how much you agree or disagree with the following statement: Marriage is a lifetime relationship and should never be ended except under extreme circumstances". Response categories are based on a five point Likert type scale ranging from (1) "strongly agree" to (5) "strongly disagree". The mean for commitment to marriage is 4.15 ($SD = 2.98$) with a possible range of scores from 1 to 5. The distribution is negatively skewed at -1.23 ($SE\ Skew = .03$).
Assets. Although it is appealing to categorise assets as a barrier as White and Booth (1991) do, theoretically, most assets are seen as resources of the couple and tie in with the partner's attractiveness. Levinger (1976), for example, classifies "home ownership" as a marital attractant. Johnson (1985) defines irretrievable investments as "resources which an individual has put into a relationship which are perceived as 'lost' if the relationship ends" (Johnson, 1985, p. 4). In this case, irretrievable investments can be classified as a barrier since a loss would be incurred if the relationship ended. However, a distinction must be and has been made between assets and irretrievable investments. "The investments that are specifically less valuable when single can be called 'marital specific' (Becker, Landes, and Michael, 1977, p. 1152)." However, some investments made in the course of a marriage retain most of their value even after marital dissolution. These investments or assets, thus, do not act as barriers or restraining forces.

Married persons may invest in many assets, including houses, children, market and nonmarket skills, and information. Some of these investments, such as in household appliances, automobiles, or knowledge of consumer prices, would be almost as valuable if marriage dissolved. (Becker, Landes, and Michael, 1977, p. 1152 emphasis added)

Three questions from the NSFH are used to assess assets. Respondents are asked: "Do you own: (a) your own home, (b) other real estate, and (c) a business or
farm?". Responses are simply "yes" or "no". The value (in dollars) of these assets are determined by: "How much do you think your (asset type) would sell for now?". The amount of savings of the couple is determined by: "What is the approximate total value of your (and your husband's/wife's) savings, including savings accounts, savings bonds, IRA's, money market shares, and CD's?". There are nine response categories: (1) "none", (2) "$1 to $1,499", (3) "$1,500 to $2,999", (4) "$3,000 to $4,999", (5) "$5,000 to $9,999", (6) "$10,000 to $19,999", (7) "$20,000 to $49,999", (8) "$50,000 to $99,999", and (9) "$100,000 or more". The amount of investments is determined by: "What is the approximate total value of your (and your husband's/wife's) investments, including stocks, bonds, shares in mutual funds, or other investments?". The response categories are the same as those indicated above. These items are standardised and summed to form the control variable for assets. The mean is .01 (SD = 2.98) with a range of -2.86 to 63.51. This distribution is extremely positively skewed at 6.90 (SE Skew = .03).

Completed Education. A constructed variable COMPLEQ will be used to measure this control variable. See Appendix question 32 for explanation of components included in this variable. The average score for completed education is 12.65 (SD = 3.04) with a possible range of scores from 0 to 20. There is a slight negative skew at -.27 (SE Skew = .03).
Cohabitation Prior to Marriage. Cohabitation prior to first marriage is measured by the following question: "Nowadays, many unmarried couples live together; sometimes they eventually get married and sometimes they don't. Did you and your (first)(husband/wife) live together before you were married?". Responses are simply "yes" or "no". The mean for this dichotomous variable is 1.14 (SD = .35). There is a significant positive skew of 2.08 (SE Skew = .03).

Age of Respondent. Since age and marital duration are highly correlated, a separate analysis will be run with age substituting for duration in the list of controls. The age of the respondent is determined from the household roster. Respondents age ranged from 16 to 90 with a mean of 45.11 (SD = 15.79). There is a positive skew of .46 (SE Skew = .03).
Chapter Three

Results

A series of logistic regression analyses comprise the design of the study. Logistic regression is chosen due to the dichotomous nature of both dependent variables, marital stability and marital outcome. Prior to tests of the theoretical models, a preliminary regression analysis is performed to determine if marital quality is a significant predictor of marital stability, as evidence is limited to a few studies. This preliminary test is then followed by a series of logistic regression model comparisons to determine which of the five hypothesised models best fits the data. Significant model chi-square improvement at $p < .05$ level is used to determine this. The relative importance of the different variables entered into the regression analyses are assessed by comparing $R$ statistics. These are partial correlation coefficients which are similar to standardised betas found in multiple regression analysis. The model that best fits the data is then rerun with control variables to test for possible competing explanations such as those suggested by duration. Finally, the model is rerun to compare results for younger and older marriage cohort groups.

Effects of Marital Quality on Marital Stability

As White (1990) notes, "a strong link between marital happiness and divorce seems simple and self-evident, but empirical evidence is scant. Booth and associates
(1986), however, report that individuals with low marital happiness at Time 1 are from four to five times more likely to divorce over a three-year period than those with very high marital happiness" (White, 1990, p. 907). The equation for this test is as follows: $MS = a + b_1MQ$. The effect of marital quality on marital stability is significant ($\chi^2 (1, N = 4237) = 1099.50, p < .001$). Marital quality has a positive $b$ of .25 ($R = .38, p < .001$). The effect of marital quality is also significant for marital outcome ($\chi^2 (1, N = 3641) = 141.67, p < .001$). Marital quality has a positive $b$ of .11 ($R = .26, p < .001$). [A bivariate correlation analysis reveals a $r$ of .50 ($p < .001$) between marital quality and marital stability and a $r$ of .21 ($p < .001$), between marital quality and marital outcome.]

**Model Comparisons**

The first of these model comparisons determines whether or not the most complex interaction model (Model 1.2) adds significantly to the variance explained on marital stability over and above that explained by the two way interaction models (Model 1.3 and 1.4) and the simple additive model (Model 1.1). The equations used for this comparison are:

(a) $MS = a + b_1MQ + b_2Alt + b_3Bar$

(b) $MS = a + b_1MQ + b_2Alt + b_3Bar + b_4Alt*MQ + b_5Bar*MQ + b_6Alt*Bar$, and

(c) $MS = a + b_1MQ + b_2Alt + b_3Bar + b_4Alt*MQ + b_5Bar*MQ + b_6Alt*Bar + b_7Alt*Bar*MQ$. 


where Alt*MQ, Bar*MQ, and Alt*Bar*MQ are multiplicative combinations of marital quality, alternatives, and barriers. Equation (a) determines if there are additive and independent effects of marital quality, alternatives, and barriers on marital stability, testing Model 1.1. Equation (b) determines if there are significant two way interactions, testing Models 1.3 and 1.4. To determine between Models 1.3 and 1.4 it is necessary to inspect regression slopes and means. Equation (c) determines if there is a significant three-way interaction effect, testing Model 1.2. If equation (c) adds significantly to the variance explained (significant model chi-square improvement) over equation (b), and as well as the entire step being significant, the three way interaction term, \(b_7\), is significant then all the remaining models can also be eliminated and Model 1.2 would describe the relationship between the variables most accurately in terms of the five models presented. If this is not the case, comparisons between equation (a) and (b) are needed to determine whether or not either of the two-way interaction models (Model 1.3 and Model 1.4) are more appropriate than the additive model (Model 1.1).

Neither the three way nor two way interaction terms are significant for marital stability. However, the additive model (Model 1.1) is significant \(\chi^2 (3, N = 3646) = 1029.29, p < .001\). Marital quality, alternatives, and barriers all have significant b’s in the predicted direction with the relative strength coefficients (R) indicating that marital quality has the strongest effect followed by alternatives and barriers respectively (See Table 4).
Table 4

Logistic Regression Coefficients for the Additive and Interaction Models for Predictors of Marital Stability

<table>
<thead>
<tr>
<th>Variable</th>
<th>Additive model</th>
<th>Two way interaction model</th>
<th>Three way interaction model</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>b</td>
<td>R</td>
<td>b</td>
</tr>
<tr>
<td>Marital quality</td>
<td>.246****</td>
<td>.37</td>
<td>.245****</td>
</tr>
<tr>
<td>Alternatives</td>
<td>-.120****</td>
<td>-.11</td>
<td>-.118****</td>
</tr>
<tr>
<td>Barriers</td>
<td>.070***</td>
<td>.04</td>
<td>.068**</td>
</tr>
<tr>
<td>Alts * MQ</td>
<td>.004</td>
<td>.00</td>
<td>.004</td>
</tr>
<tr>
<td>Bars * MQ</td>
<td>.002</td>
<td>.00</td>
<td>.002</td>
</tr>
<tr>
<td>Alts * Bars</td>
<td>.011</td>
<td>.00</td>
<td>.012</td>
</tr>
<tr>
<td>Alts * Bars * MQ</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Chi square model</td>
<td>1029.29****</td>
<td>1026.83</td>
<td>1029.19</td>
</tr>
<tr>
<td>Improvement</td>
<td>2.46</td>
<td>.10</td>
<td></td>
</tr>
<tr>
<td>N</td>
<td>3646</td>
<td>3646</td>
<td>3646</td>
</tr>
</tbody>
</table>

** p < .05, *** p < .01, **** p < .001.
Similarly, for marital outcome, only the additive model is significant ($\chi^2 (3, N = 3143) = 145.48, p < .001$) but only marital quality and alternatives have significant b's: (marital quality: $b = .11, R = .28, p < .001$; alternatives: $b = -.11, R = .10, p < .001$).

As a further more stringent test, only the high conditions for alternatives and barriers are entered into a regression equation as the theory suggests that push and pull conditions are represented by the high groups. Once again the additive model is significant for marital stability ($\chi^2 (3, N = 3646) = 1004.91, p < .001$) with three terms having significant effects. Marital quality has a b of .25 ($R = .38, p < .001$). High alternatives have a b of -.48 ($R = .08, p < .001$) while high barriers have a b of .21 ($R = .03, p < .05$). For marital outcome, the results are also similar to those obtained prior to dichotomising. The additive model is the only significant model ($\chi^2 (3, N = 3143) = 138.05, p < .001$). With marital quality and high alternatives having significant effects: (marital quality: $b = .11, R = .24, p < .001$; alternatives: $b = -.47, R = -.08, p < .001$). Since results are comparable, these dichotomised versions of alternatives and barriers are used in the remaining analyses.

Tests for Curvilinearity

Next, a test for curvilinearity in the interaction terms is performed. In order to test for curvilinearity, marital quality is trichotomised into the following codes: (1) low, (2) medium, and (3) high, and separate dummy codes for medium marital quality and high marital quality are entered into a regression equation. Thus, the omitted category
is low marital quality. The codes are as follows: MQ2 is coded as (0) for both low and high and (1) for medium marital quality; MQ3 is coded (0) for low and medium and (1) for high marital quality. These separate dummy terms are then used in equation (d), with dichotomous terms added on equation (e).

(d) \[ MS = a + b_1 MQ_2 + b_2 MQ_3 + b_3 Althigh + b_4 Barhigh. \]

(e) \[ MS = a + b_1 MQ_2 + b_2 MQ_3 + b_3 Althigh + b_4 Barhigh + b_5 Althigh \times MQ_2 + b_6 Barhigh \times MQ_2 + b_7 Althigh \times MQ_3 + b_8 Barhigh \times MQ_3. \]

If equation (e) adds significantly to the variance explained over that explained by equation (d), then a curvilinear model is indicated. No significant interactions are found for either marital stability or marital outcome.

Since there is only support for the additive model, another possibility is curvilinearity in the additive model. Therefore, a second test for curvilinearity of the main effect is performed. For this test, a squared term for marital quality is added into a regression equation for additive effects with dichotomous alternatives and barriers (equation (g)), and compared to an equation without this squared term (equation (f)).

(f) \[ MS = a + b_1 MQ + b_2 Althigh + b_3 Barhigh. \]

(g) \[ MS = a + b_1 MQ + b_2 Althigh + b_3 Barhigh + b_4 SQMQ, \]

where SQMQ = squared marital quality. If equation (g) adds significantly to the variance explained over that explained by equation (f), then an additive curvilinear model is indicated.
For marital stability, model chi-square improvement with the addition of the squared term is significant ($\chi^2$ improvement $(1, N = 3646) = 18.18, p < .001$). B's for marital quality, high alternatives, high barriers, and squared marital quality respectively are: .28 ($R = .39, p < .001$), -.46 ($R = -.09, p < .001$), .21 ($R = .03, p < .05$), and .01 ($R = .08, p < .001$). Chi-square improvement is not significant, however, for marital outcome. Therefore, for marital stability an additive curvilinear model is present while for marital outcome the model is additive. See Table 5.
Table 5

Logistic Regression Coefficients for the Additive and Additive Curvilinear Models

Predicting Marital Stability

<table>
<thead>
<tr>
<th>Variable</th>
<th>Additive model</th>
<th>Additive curvilinear model</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>b</td>
<td>R</td>
</tr>
<tr>
<td>Marital quality</td>
<td>.248****</td>
<td>.38</td>
</tr>
<tr>
<td>High alternatives</td>
<td>-.475****</td>
<td>-.08</td>
</tr>
<tr>
<td>High barriers</td>
<td>.206**</td>
<td>.03</td>
</tr>
<tr>
<td>Squared marital quality</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Chi square model</td>
<td>1004.91****</td>
<td>986.73</td>
</tr>
<tr>
<td>Improvement</td>
<td></td>
<td>18.18****</td>
</tr>
</tbody>
</table>

**N = 3646**

**p < .05. ***p < .01. ****p < .001.
To see the nature of the additive curvilinear model, predicted log odds for marital stability are computed and plotted for the effect of marital quality groups one and two standard deviations above and below the mean. Figure 3.1 depicts these results.
Figure 3.1. Predicted log odds for marital stability estimated from the additive curvilinear model.
The results indicate that at high levels of marital quality, small changes in the level of marital quality reduces marital stability while at lower levels of marital quality larger changes are needed to further decrease marital stability.

Reanalyses with Control Variables

Control variables are added to the regression equations to determine if marital quality, alternatives, and barriers explain marital stability or if other competing variables such as duration are more important determinants of marital stability. Although some of the controls had significant effects, the models remained significant.

Duration, commitment, assets, completed education, and cohabitation are entered as controls in the first step of the logistic regression. The effects on marital stability are significant ($\chi^2$ (5, $N = 3646$) = 425.24, $p < .001$) with duration, commitment and cohabitation having significant b's. With the addition of the curvilinear additive model variables, model chi-square improvement is also significant ($\chi^2$ improvement (4, $N = 3646$) = 732.85, $p < .001$). At this step, duration, commitment, cohabitation, marital quality, high alternatives, high barriers, and squared marital quality have significant b's. These are listed as follows: duration $.00 (R = .10, p < .001)$, commitment $.28 (R = .10, p < .001)$, cohabitation $.32 (R = .04, p < .01)$, marital quality $.25 (R = .32, p < .001)$, high alternatives $.23 (R = .03, p < .05)$, high barriers $.35 (R = .05, p < .001)$, and squared marital quality $.00 (R = .06, p < .001)$. See Table 6.
Table 6

Logistic Regression Coefficients for the Additive Curvilinear Model Predicting Marital Stability, With and Without Controls

<table>
<thead>
<tr>
<th>Variable</th>
<th>Without controls</th>
<th>With controls</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>b</td>
<td>R</td>
</tr>
<tr>
<td>Marital quality</td>
<td>0.277***</td>
<td>0.39</td>
</tr>
<tr>
<td>High alternatives</td>
<td>-0.462***</td>
<td>-0.09</td>
</tr>
<tr>
<td>High barriers</td>
<td>0.208**</td>
<td>0.03</td>
</tr>
<tr>
<td>Squared marital quality</td>
<td>0.006***</td>
<td>0.08</td>
</tr>
<tr>
<td>Duration</td>
<td>0.002***</td>
<td>0.10</td>
</tr>
<tr>
<td>Commitment</td>
<td>0.283***</td>
<td>0.10</td>
</tr>
<tr>
<td>Assets</td>
<td>0.011</td>
<td>0.00</td>
</tr>
<tr>
<td>Completed education</td>
<td>-0.014</td>
<td>0.00</td>
</tr>
<tr>
<td>Cohabitation</td>
<td>-0.323***</td>
<td>-0.04</td>
</tr>
</tbody>
</table>

N = 3646

**p < .05. ***p < .01. ****p < .001.
The inclusion of controls in the first step with marital outcome yield a significant effect ($\chi^2 (5, N = 3143) = 229.06, p < .001$). Significant b's are found for all of the controls. With the addition of the model variables, model chi-square improvement is also significant ($\chi^2$ improvement $(3, N = 3143) = 56.91, p < .001$). Significant b's are as follows: duration .001 ($R = .19, p < .001$), commitment .23 ($R = .09, p < .001$), assets .07 ($R = .03, p < .05$), completed education .08 ($R = .06, p < .01$), marital quality .08 ($R = .17, p < .001$), and high barriers .28 ($R = .03, p < .05$).

Almost identical results are obtained when age is substituted for the duration measure. For the block of controls on marital stability, model chi-square is significant ($\chi^2 (5, N = 3646) = 451.62, p < .001$). Age, commitment, and cohabitation have significant b's. With the addition of the model variables, model chi-square improvement is also significant ($\chi^2$ improvement $(4, N = 3646) = 71.43, p < .001$). Significant b's are found for age .03 ($R = .10, p < .001$), commitment .28 ($R = .10, p < .001$), cohabitation -.37 ($R = -.04, p < .01$), marital quality .25 ($R = .31, p < .001$), high alternatives -.22 ($R = -.03, p < .05$), high barriers .36 ($R = .05, p < .001$), and squared marital quality .00 ($R = .06, p < .001$).

For marital outcome, the controls yield a significant model chi-square ($\chi^2 (5, N = 3143) = 255.94, p < .001$). Variables with significant b's include: age, commitment, completed education, and cohabitation. With the inclusion of the model variables, model chi-square improvement is also significant ($\chi^2$ improvement $(3, N = 3143) = 50.29, p < .001$). The following variables have significant b's: age .07 ($R = .21, p < .001$),
commitment .24 (R = .09, p < .001), completed education .06 (R = .04, p < .05), cohabitation - .34 (R = -.04, p < .05), marital quality .07 (R = .15, p < .001), barriers .32 (R = .04, p < .05).

Reanalyses with Younger and Older Marriage Cohorts

Two additional logistic regressions are run to determine if the models apply to both a younger marriage cohort and an older marriage cohort. The younger cohort is comprised of respondents who married after 1960. The older marriage cohort is comprised of respondents who married prior to and including 1960.

For the younger marriage cohort, the inclusion of control variables for marital stability yield a significant model chi-square ($\chi^2$ (5, N = 2721) = 153.16, p < .001). Duration, commitment, assets, and cohabitation have significant b's: .00 (R = .05, p < .01), .41 (R = .16, p < .001), .04 (R = .03, p < .05), and -.46 (R = -.07, p < .001) respectively. With the addition of the model variables, model chi-square improvement is significant ($\chi^2$ improvement (4, N = 2721) = 584.47, p < .001). Variables with significant b's are as follows: duration .00 (R = .03, p < .05), commitment .29 (R = .10, p < .001), cohabitation -.35 (R = -.04, p < .01), marital quality .26 (R = .31, p < .001), high alternatives -.26 (R = -.04, p < .05), high barriers .35 (R = .06, p < .001), and squared marital quality .00 (R = .05, p < .001).
For marital outcome, the inclusion of controls yield a significant model chi-square ($\chi^2 (5, N = 2428) = 106.85, p < .001$). Significant b's are found for duration, commitment, completed education, and cohabitation. With the inclusion of model variables, model chi-square improvement is also significant ($\chi^2 \text{ improvement} (3, N = 2428) = 45.86, p < .001$). Significant b's are found for the following variables: duration .00 ($R = .12, p < .001$), commitment .20 ($R = .07, p < .001$), completed education .10 ($R = .08, p < .001$), marital quality .07 ($R = .15, p < .001$), and high barriers .32 ($R = .04, p < .05$).

Results for the older marriage cohort are as follows for marital stability: the inclusion of controls yield a significant model chi-square ($\chi^2 (5, N = 920) = 32.80, p < .001$). Only commitment and duration have significant b's, .367 ($R = .14, p < .001$) and .003 ($R = .06, p < .05$) respectively. With the inclusion of the model variables, model chi-square improvement is also significant ($\chi^2 \text{ improvement} (4, N = 920) = 134.22, p < .001$). Variables with significant b's are as follows: commitment .25 ($R = .07, p < .05$), marital quality .24 ($R = .33, p < .001$), and squared marital quality .01 ($R = .06, p < .05$).

For marital outcome, the inclusion of controls yield a significant model chi-square ($\chi^2 (5, N = 710) = 16.32, p < .01$). Significant b's are found for commitment and assets only. With the inclusion of the model variables, model chi-square improvement is also significant ($\chi^2 \text{ improvement} (3, N = 710) = 15.08, p < .01$). Commitment has a significant b .60 ($R = .19, p < .01$) as does marital quality .15 ($R = .28, p < .001$). Table 7 provides the results for marital stability for the entire sample, the younger marriage cohort, and the older marriage cohort.
Table 7

Logistic Regression Coefficients for the Additive Curvilinear Model Predicting Marital Stability for Different Cohorts

<table>
<thead>
<tr>
<th>Variable</th>
<th>Entire sample</th>
<th>Younger marriage cohort (1961 to present)</th>
<th>Older marriage cohort (1960 and prior)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>b</td>
<td>R</td>
<td>b</td>
</tr>
<tr>
<td>Marital quality</td>
<td>.254****</td>
<td>.32</td>
<td>.256****</td>
</tr>
<tr>
<td>High alternatives</td>
<td>-.229**</td>
<td>-.03</td>
<td>-.257**</td>
</tr>
<tr>
<td>High barriers</td>
<td>.350****</td>
<td>.05</td>
<td>.354****</td>
</tr>
<tr>
<td>Squared marital quality</td>
<td>.005****</td>
<td>.06</td>
<td>.004****</td>
</tr>
<tr>
<td>Duration</td>
<td>.002****</td>
<td>.10</td>
<td>.001**</td>
</tr>
<tr>
<td>Commitment</td>
<td>.283****</td>
<td>.10</td>
<td>.292****</td>
</tr>
<tr>
<td>Assets</td>
<td>.011</td>
<td>.00</td>
<td>.029</td>
</tr>
<tr>
<td>Completed education</td>
<td>-.014</td>
<td>.00</td>
<td>.007</td>
</tr>
<tr>
<td>Cohabitation</td>
<td>-.323***</td>
<td>-.04</td>
<td>.348***</td>
</tr>
</tbody>
</table>

** p < .05. *** p < .01. **** p < .001.
Post hoc Analysis

Since both the additive models and duration have significant effects on marital stability, two additional logistic regression equations are run to do a rough comparison of the effects of duration compared to the effects of the models. Equation (h) separates out duration from the other controls and is entered before the model while equation (i) enters the model before duration. This is done to compare the amount of chi-square improvement for duration versus that for the models. Equations (h) and (i) are as follows:

(h)  
\[ \text{MS} = a + b_1 \text{Controls} + b_2 \text{Duration} + b_3 \text{MQ} + b_4 \text{Alt} + b_5 \text{Bar} + b_6 \text{SQMQ}, \]

(i) 
\[ \text{MS} = a + b_1 \text{Controls} + b_2 \text{MQ} + b_3 \text{Alt} + b_4 \text{Bar} + b_5 \text{SQMQ} + b_6 \text{Duration}, \]

where subequation (a) is the equation run for the marital stability measure (additive curvilinear model) and subequation (b) is the equation run for the marital outcome measure (additive model).

The analyses with duration entered prior to the models are reported first. The entry of the controls for marital stability yield a significant model chi-square \( \chi^2 (4, N = 3646) = 279.90, p < .001 \). All controls have significant b's. Duration is then entered yielding a significant model chi-square improvement \( \chi^2 \text{ improvement } (1, N = 3646) = 145.34, p < .001 \). At this stage commitment, cohabitation, and duration have significant b's. With the inclusion of the model, model chi-square improvement is also significant \( \chi^2 \).
improvement \((d, N = 3646) = 732.85, p < .001\). The following b's are significant:

commitment .28 \((R = .10, p < .001)\), cohabitation -.32 \((R = -.04, p < .01)\), duration .00 \((R = .10, p < .001)\), marital quality .25 \((R = .32, p < .001)\), high alternatives -.23 \((R = -.03, p < .05)\), high barriers .35 \((R = .053, p < .001)\), and squared marital quality -.01 \((R = .06, p < .001)\).

For marital outcome, the control variables yield a significant model chi-square \((\chi^2(4, N = 3143) = 135.97, p < .001)\). Commitment, assets, and cohabitation have significant b's. With the addition of duration, model chi-square improvement is significant \((\chi^2\text{ improvement}(1, N = 3143) = 93.09, p < .001)\). All control variables have significant b's. Finally, with the inclusion of the model variables, model chi-square improvement is also significant \((\chi^2\text{ improvement}(3, N = 3143) = 56.91, p < .001)\). The following b's are significant: commitment .23 \((R = .09, p < .001)\), assets .07 \((R = .03, p < .05)\), completed education .08 \((R = .06, p < .01)\), duration .01 \((R = .19, p < .001)\), marital quality .08 \((R = .17, p < .001)\), and high barriers .28 \((R = .034, p < .05)\).

The second and comparison test includes duration in the last step after the models have been entered. For marital stability, with the addition of controls, model chi-square is significant \((\chi^2(4, N = 3646) = 279.90, p < .001)\). All controls have significant b's. With the inclusion of the model variables, model chi-square improvement is significant \((\chi^2\text{ improvement}(4, N = 3646) = 835.38, p < .001)\). All variables have significant b's. With the inclusion of duration, model chi-square improvement is also significant \((\chi^2\text{ improvement}(1, N = 3646) = 42.81, p < .001)\). The following variables have significant b's:
commitment .28 (R = .11, p < .001), cohabitation -.32 (R = -.04, p < .01), marital quality .25 (R = .35, p < .001), high alternatives -.23 (R = -.04, p < .05), high barriers .35 (R = .06, p < .001), squared marital quality .01 (R = .06, p < .001), and duration .00 (R = .11, p < .001).

For marital outcome, the inclusion of control variables yield a significant model chi-square ($\chi^2 (4, N = 3143) = 135.97, p < .001$). Significant b's are found for commitment, assets, and cohabitation. With the inclusion of the model variables, model chi-square improvement is significant ($\chi^2$ improvement $(3, N = 3143) = 78.39, p < .001$). Significant b's are found for commitment, assets, cohabitation, marital quality, high alternatives, and high barriers. Finally, with the inclusion of duration, model chi-square improvement is also significant ($\chi^2$ improvement $(1, N = 3143) = 71.61, p < .001$). The following variables have significant b's: commitment .23 (R = .09, p < .001), assets .07 (R = .03, p < .05), completed education .08 (R = .06, p < .01), marital quality .08 (R = .17, p < .001), high barriers .28 (R = .03, p < .05), and duration .01 (R = .19, p < .001).

Thus, for marital stability, the chi-square improvement when duration is entered first is 145.34 in contrast to the chi-square improvement when the curvilinear additive model is entered first (after the other controls) at 835.38. This same comparison for marital outcome is a chi-square improvement of 93.09 with duration entered first, compared to the chi-square improvement when the additive model is entered first at 78.39. Therefore, for marital stability, the models are having a larger effect than duration while for marital outcome, duration is having a larger effect than the models.
Green and Sporakowski (1984), in testing Lewis and Spanier's model, found significant results for males but not for females. Since in this study, the model does not apply to the older marriage cohort group, it is possible that the model is also gender specific. Therefore, two additional analyses are run to determine if the model is applicable for both genders. Table 8 provides the results found for marital stability for the entire sample, males, and females. Results indicate a gender difference. The model is applicable to males but not to females. For males, the model variables as well as duration and commitment all have significant effects on marital stability. For females, however, the only other variables with significant effects aside from the controls; duration, commitment, and cohabitation, are marital quality and squared marital quality. Alternatives and barriers have no significant effects.
Table 8

Logistic Regression Coefficient for the Additive Curvilinear Model Predicting Marital Stability for Different Genders

<table>
<thead>
<tr>
<th>Variable</th>
<th>Entire sample</th>
<th>Males</th>
<th>Females</th>
</tr>
</thead>
<tbody>
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<td></td>
<td>b</td>
<td>R</td>
<td>b</td>
</tr>
<tr>
<td>Marital quality</td>
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<td>.262****</td>
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<tr>
<td>High alternatives</td>
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<td>-.03</td>
<td>-.316**</td>
</tr>
<tr>
<td>High barriers</td>
<td>.350****</td>
<td>.05</td>
<td>.499****</td>
</tr>
<tr>
<td>Squared marital quality</td>
<td>.005****</td>
<td>.06</td>
<td>.006****</td>
</tr>
<tr>
<td>Duration</td>
<td>.002****</td>
<td>.10</td>
<td>.002****</td>
</tr>
<tr>
<td>Commitment</td>
<td>.283****</td>
<td>.10</td>
<td>.420****</td>
</tr>
<tr>
<td>Assets</td>
<td>.011</td>
<td>.00</td>
<td>.001</td>
</tr>
<tr>
<td>Completed education</td>
<td>-.014</td>
<td>.00</td>
<td>-.017</td>
</tr>
<tr>
<td>Cohabitation</td>
<td>-.323***</td>
<td>-.04</td>
<td>-.072</td>
</tr>
<tr>
<td>N</td>
<td>3646</td>
<td></td>
<td>1688</td>
</tr>
</tbody>
</table>

**p < .05; ***p < .01; ****p < .001.
Similar gender differences are found for marital outcome. For males, the model variables; marital quality and high alternatives as well as the controls; duration, commitment, and completed education have significant b's: marital quality .09 (R = .18, p < .001), high alternatives -.47 (R = -.06, p < .05), duration .00 (R = .13, p < .001), commitment .24 (R = .07, p < .05), and completed education .09 (R = .06, p < .05). For females, only marital quality and the controls duration and commitment have significant b's: marital quality .07 (R = .15, p < .001), duration .01 (R = .22, p < .001), and commitment .23 (R = .08, p < .01).
This study investigates the effects of marital quality, alternatives, and barriers on marital stability. Five models are developed based on Levinger's (1965, 1976) conceptualisations of marital attractions, alternatives, and barriers and Lewis and Spanier's (1979) theory of marital quality and marital stability. In addition to other controls, the effect of duration, an important competing explanation, is investigated.

**Dependent Variables: Marital Stability and Marital Outcome**

Marital stability, in this study, is a psychological measure assessing the perceived probability of separation or divorce occurring. Marital outcome, on the other hand, is a behavioural measure of separation and divorce. The bivariate correlation for these variables is $r = .21 \ (p < .001)$. Although this correlation appears weak, the magnitude is not unusual considering two different phenomena are being assessed. The correlation may have been stronger if all of the items in the marital instability index developed by Booth, Johnson, and Edwards (1983) were included. Their index, compared to the index created in this study, is composed of more behavioural measures. This is one of the potential problems of using secondary data. Existing measures must be fit into the current study and often the best measures for the study are not available. Both types of measures have been used previously in the literature.
to assess the effects of marital quality, alternatives, and barriers on marital stability. For example, Green and Sporakowski (1984) compare married and divorced subjects in their test of Lewis and Spanier's theory, using the behavioural measure, while Udry (1983) and White and Booth (1991) both use psychological measures of marital stability.

In terms of this study, more emphasis is placed on the results of the marital stability measure than for the outcome measure for a number of reasons. First, the marital outcome measure is weakened by sample attrition. For the selected sample used in this study, 1,100 cases were lost due to attrition - approximately 21%. Second, some respondents will separate or divorce immediately following the NSFH interview. However, in the survey, these respondents are categorised as stable. The dichotomous nature of the variable, as intact or not intact, does not have the ability to capture instability that may be present in a marriage. Third, the marital outcome measure is significantly negatively skewed. Thus, although logistic regression analyses are robust, the assumptions of normality may be violated. This has an impact on significance tests. Therefore, conclusions must be made with caution. Fourth, and perhaps most important, is the problem of varying levels of analyses between the dependent and independent, moderator, and control variables. Marital outcome is a dyadic measure. The act of separating or divorcing may occur due to the decision of one or both spouses. Incorporating both people into one measure is problematic and, for this study is not possible, as measures of alternatives and barriers for the spouse
are not included in the data set. All the remaining measures in the analyses, are at the individual level of analysis. Thus, interpretation becomes unclear. It is for these reasons that more emphasis is placed on the results of the marital stability measure. However, results for the marital outcome measure must not be discounted as this measure adds an additional dimension to the study. The models subsequently are tested both cross-sectionally and longitudinally.

Effect of Marital Quality on Marital Stability

As suggested by White (1990), "a strong link between marital happiness and divorce seems simple and self-evident, [but] empirical evidence is scant (p. 907)." In a review by Karney and Bradbury (1995), of only four longitudinal studies found reporting this effect, the aggregated results of this effect for couples is a correlation of .14 and for husbands is .29. In addition, two longitudinal studies reported for wives revealed an aggregated $r$ of .42.

In this study, the bivariate correlation between marital outcome and marital quality is .21 ($p < .001$). Therefore, the results are comparable to the results found by Karney and Bradbury (1995). In addition, the correlation between marital stability and marital quality is .50 ($p < .001$). The greater strength of this correlation may be due to the fact that these measures are both psychological in nature, while for the marital outcome correlation, a behavioural measure is correlated with a psychological measure.
Consistent with Lewis and Spanier's (1979) theoretical proposition that marital quality is the best predictor of marital stability, marital quality has a profound effect on marital stability in this study. Even with the addition of controls, and when separate cohorts and genders are isolated, the effect of marital quality on marital stability remained the same in both magnitude and significance. The measurement of marital quality may play a part in this outcome. Although the measure of marital quality constructed in this study has not been used previously in other empirical research, the items used in the index are similar to many of those used in Spanier's (1976) Dyadic Adjustment Scale (DAS). The measure in this study, however, is not confounded with marital stability as is the DAS. [The DAS combines a measure of marital instability in the measure of marital quality]. Also similar to the DAS, the measure of marital quality is found to be multidimensional. The factor components are similar. [The DAS is comprised of four factors: (1) consensus, (2) satisfaction, (3) cohesion, and (4) affectional expression. The factors found for the marital quality measure in this study are: (1) disagreement, (2) satisfaction, and (3) conflict resolution.]

Model Testing

No significant interaction effects are found in this study. This is inconsistent with previous literature testing the models (Green and Sporakowski, 1984; White and Booth, 1991). Poor measures of alternatives and barriers may be the cause of this outcome. Although care is taken to clearly define and distinguish between alternatives and
barriers, once again the limits of using secondary are evident. The indices created for alternatives and barriers are based on available measures from the data set. Unfortunately, finding good measures of alternatives is particularly difficult. The data set was not designed with tests of alternatives and barriers in mind. Better measures of alternatives, for example, would determine if the respondents participated in outside activities and organisations with or without their spouse. The measurement of alternatives has, however, been difficult in previous studies as well. For example, White and Booth's (1991) measure of alternatives include items such as "wife's income", an item that is specific to women yet the authors use this alternative in a sample that includes men. Development of better measures of alternatives and barriers is still very much needed.

Unfortunately, without obtaining two way interactions, the debate in the literature, as to the appropriateness of Lewis and Spanier's model over that of Thomas and Kleber, cannot be resolved by this study. It is probable, however, that the other models simply are incorrect and that the additive model, conceptualised by Levinger and consistent with Lewis and Spanier's marital typology, best explains the effect of marital quality, alternatives, and barriers on marital stability. Sometimes the simpler of two solutions is the better one. This appears to be true in terms of the five models presented. Marital quality, alternatives, and barriers all have independent additive effects on marital stability. Therefore, profitability from the marriage as measured by marital quality increases levels of marital stability. Alternative attractions to the
marriage act as "pull forces", pulling one out of the relationship while barriers act as "push forces" keeping an individual in a relationship.

Curvilinearity in the model is found for the marital stability measure. Therefore, the effects of marital quality, alternatives, and barriers are not only additive and independent but these effects change the level of marital stability at different rates. At high levels of marital quality, even small changes in marital quality will quickly reduce the level of marital stability. At low levels of marital quality, however, larger decreases in marital quality are needed to decrease stability levels. Unfortunately, due to the small number of studies testing these models, there is no support in the literature for this result. Once again further testing is necessary.

Although duration, commitment and previous cohabitation did have significant effects on marital stability these control variables did not erase the effects of the model. The level of alternatives is decreased and the level of barriers increased when these controls are added. The decrease in the strength of effect for alternatives may be due to the cohabitation measure. Although cohabitation is not an alternative people presently have, cohabitation represents an alternative to marriage. Therefore, people who have cohabited in the past may see this as an alternative they can go back to. Although this measure is not an extradyadic factor, perhaps in future studies this measure should be included as a possible alternative.

As both the model and some of the control variables such as duration and commitment are significant at the same time, it appears that more than one process is
contributing to the level of marital stability. When the results for the entire sample are compared with those for the younger and older marriage cohorts, it appears evident that the results of the entire group are echoed in the results of the younger marriage cohort. In fact, these results are almost identical. Only duration loses some significance in the younger marriage cohort group. This may be due to the fact that for this group, some marriages are relatively new and, therefore, the role duration may play, such as increasing the value of the relationship for its own rewards, may not yet be relevant. This effect, however, may also be due to the decrease in sample size and/or a decrease in the amount of variance in the duration measure for this group.

The model does not predict marital stability for respondents in the older marriage cohort. Only commitment and marital quality had a significant effect on marital stability for this group. Once again, these results may be due to decreased variation in the measures and reduced sample size. Also, due to sample attrition, respondents in bad marriages may have already separated/divorced and therefore, are not included in the sample. There may also be additional problems with the measurement of alternatives and barriers for this group. For instance, one measure in the alternatives index and one measure in the barrier index appear to have little relevancy to older respondents, thereby, decreasing the highest possible level one can obtain for alternatives and barriers. Specifically, participation in school fraternities/sororities and having a young child in the house are more likely to be relevant to younger respondents than older respondents.
Another possible explanation for this finding is that respondents in the older marriage cohort may have married under different norms than those of marriages today. Specifically, these norms may suggest greater stability and decreased focus on personal gain or profit. Even though the norms have changed, people may still think and behave under the rules under which they married. For example, even though divorce is freely available, respondents in this marriage cohort may not feel divorce is freely available to them. They may not even consider this option. Similarly, the meaning of marriage for the older cohort may also be different than that for the younger cohort. The status of being married itself may be valued more in the older group. As White and Booth (1991) suggest, those in older marital cohorts may put a higher value on stability.

Another possible explanation is that these marriages are developing. Over time, people may have established patterns of behaviour and interaction that maintain higher levels of quality. In addition, respondents in these marriages may report high commitment and high quality simply because they have remained in the marriage and "stuck it out" for so long. Reporting dissatisfaction would seem contradictory. Thus, justification for remaining in the marriage may be necessary. Furthermore, respondents in older marriage cohorts simply may not be focusing on possible alternatives and barriers they may have. Commitment, comfort, and predictability in the relationship may keep them from looking elsewhere.
White and Booth (1991) report that older respondents have fewer alternatives and increased barriers compared to younger respondents. These results are not consistent with findings in this study. Alternatives and barriers simply did not appear to be important to the older marital cohort group. The magnitude of alternatives and barriers decreased. These results may, however, be affected by the decreased N for this group and possibly reduced variance in the measures. In addition, as mentioned above, the specific measures of alternatives and barriers in this study may be less relevant to the older cohort.

Another issue relevant to this study is gender. Findings reveal that the additive curvilinear model predicts only for male respondents. This is consistent with Green and Sporakowski's (1984) finding that, alternatives play a role for men but not for women. The experience of marriage and marital instability may differ for men and women. Men are seen as more instrumental in orientation and therefore, focus on their available alternatives and barriers. Women, on the other hand, may be more affective, therefore, paying more attention to the quality of their marriages. These findings, however, simply may have occurred due to the relative applicability of the alternative and barrier measures to males and females. Although there is no theoretical reason for gender differences in alternatives and barriers, for the measures used in this study, this appeared to occur. Separate measures for alternatives are relevant for men and women with only one item in the index being relevant for both (going to bars/taverns). With barriers, only one measure is found to be significant for women (religiosity).
Therefore, the lack of effect of the model on the test for women may be due to the inapplicability of these items as relevant alternatives and barriers. This suggests the inappropriateness of using identical items for both genders. Separate measures for men and women may need to be developed and used in model testing. Further research is needed to resolve this issue. Perhaps separate models should also be developed by gender.

This study provides partial support for exchange and field theories. In exchange theory terms, attractions of the marriage are compared with available alternatives and barriers to dissolution. These components are independent and additive in nature. The decision to separate or divorce is based on the perceived profit or loss of remaining in the relationship. Field theory adds to this. According to field theory, alternatives act as a "pull" force, pulling one out of a relationship while barriers act as a "push" force keeping one in a relationship. The problem with these theories, however, is that the element of time is missing. As suggested by the results of this study, time is an important factor to consider in predicting marital dissolution. Further theoretical development is needed to integrate the two components to form a better predictive model relevant for all marital durations. Perhaps one needs to look at time oriented theories, such as developmental theory, to explain marital stability in older marriage cohorts.
Limitations, Strengths, and Implications

An important limitation of this study is the problematic nature of using secondary data. In particular, for this study, the effects of alternatives and to a lesser degree barriers are weakened by the available measures used to create the indices. Interaction models may have been significant with stronger measures of alternatives and barriers. These measures must still be developed.

The use of survey instruments also has the possibility of response bias occurring. Sensitive issues, such as degree of conflict and/or abuse may be under reported. However, the combined formats of interview and self-administered questionnaires help reduce this effect.

There are a few unique features of this sample that must be taken into consideration. The results are mainly generalizable to whites and respondents in their first marriage. Remarriage would bring in many other possibilities for measures of marital quality, alternatives, and barriers not assessed here. The dynamics of step families as well as those of other race, or culture may vary significantly. Exchange theory may not play a part in these marriages. Further tests of these models on different family types is still needed.

Because this sample is older than most other studies, it is difficult to compare findings and assess their worth. For example, the age range for this study is from 16 to 90 years old, while most studies on long duration marriages sample under 55 years of age. The older age of this sample is also seen as a strength, as research on older
samples is severely limited. Utilising this large national representative sample provides much needed analysis of older marriage cohorts where “older” goes beyond the “young old” and includes the “older old” as respondents. Assessing marital outcome would be impossible with a smaller sample as there would be too few cases in the older marriage cohort group to justify analysis. In addition, as the population is “greying” it is becoming increasingly important to understand this group of individuals.

Another strength of this study is the clarification of the theoretical models and relevant concepts. This was long overdue. There is an ongoing debate in the literature as to the applicability of the best theoretical model. However, it becomes difficult to compare findings or even report findings when the models themselves are unclear. In addition, support for the additive model is provided using both cross sectional and longitudinal data.

Further support for the correlation between marital quality and marital stability is determined. Even though this relationship seems obvious, little evidence has been reported in the literature. It is also interesting to note that the correlation between the two psychological measures, marital quality and marital stability, is quite large explaining approximately 25 percent of the variance.

Further tests of these models are needed on various marriage cohorts, stages, family types, and cultures. However, prior to retesting, better measures of alternatives and barriers must be developed. Other time oriented theoretical perspectives, such as developmental theory, should also be examined as this study has shown that duration
is relevant in predicting marital stability. In addition, gender specific models predicting marital stability may be warranted.

The results of this study also have practical implications. Marriage counsellors may be able to work with younger couples at increasing their marital quality and barriers, and reducing alternatives in order to remain married (if that is the desired result by both parties). Conversely, if dissolution would be beneficial, for example, in an abuse situation, one could work on decreasing the barriers to dissolution. For clients in older cohorts, counselling would have to be adjusted to incorporate duration and commitment processes.

The results also have implications on social policy. For example, a change to stricter divorce laws, according to these results, would help decrease marital instability by acting as a barrier to dissolution for men in younger marriage cohorts but would have a smaller effect on women and people in older marriage cohorts. Finally, a theoretical implication suggested by these results indicates that time oriented theories should also be examined as possible explanations for marital stability, especially for respondents in older marriage cohorts.
References


Appendix

Questions From the National Survey of Families and Households (Waves 1 and 2)

Sample

1. Marital status of respondent.
   (1) Married (Includes married spouse absent)
   (2) Separated due to marital problems
   (3) Divorced
   (4) Widowed
   (5) Never married

2. Altogether, how many times have you been married?
   ______ number of times

   *(1) Married, living with spouse
   (2) Married, spouse absent
   (3) Cohabiting - separated
   (4) Cohabiting - divorced
   (5) Cohabiting - widowed
   (6) Cohabiting - never married
   (7) Not cohabiting - separated
   (8) Not cohabiting - divorced
   (9) Not cohabiting - widowed
   (10) Not cohabiting - never married

Marital Stability

4. During the past year, have you ever thought that your marriage might be in trouble?
   (1) Yes
   (2) No
5. Do you still feel that way now?

(1) Yes
(2) No

6. During the past year, have you and your (husband/wife) discussed the idea of separating?

(1) Yes, I brought it up the first time
(2) Yes, my (husband/wife) brought it up the first time
(3) No

7. It is always difficult to predict what will happen in a marriage, but realistically, what do you think the chances are that you and your (husband/wife) eventually separate or divorce?

(1) Very low
(2) Low
(3) About even
(4) High
(5) Very high

Marital Outcome

8. Next we want to find out about any changes in your marital status since NSFH1. At that time you were married to (spouse’s name). Are you still married (and living with) (him/her)?

(1) Yes
(2) No

9. Did that marriage end in: (Respondents remarried since NSFH wave I)

(1) Divorce?
(2) Separation with no divorce?
(3) Widowhood?

10. Did that marriage end in: (Respondents not remarried since NSFH wave I)

(1) Divorce?
(2) Separation with no divorce?
(3) Widowhood?
Marital Quality

11. Taking things all together, how would you describe your marriage?

VERY: 1 2 3 4 5 6 7 8
UNHAPPY: _____ _____ _____ _____: HAPPY

12. How do you feel about the fairness in your relationship in each of the following areas:

(a) household chores?
1. Very unfair to me
2. Somewhat unfair to me
3. Fair to both
4. Somewhat unfair to him/her
5. Very unfair to him/her

(b) spending money?
1. Very unfair to me
2. Somewhat unfair to me
3. Fair to both
4. Somewhat unfair to him/her
5. Very unfair to him/her

13. During the past month, about how often did you and your husband/wife spend time alone with each other, talking, or sharing an activity?

(1) Never
(2) About once a month
(3) Two or three times a month
(4) About once a week
(5) Two or three times a week
(6) Almost every day
14. The following is a list of subjects on which couples often have disagreements. How often, if at all, in the last year have you had open disagreements about each of the following:

(a) household tasks?

1. Never
2. Less than once a month
3. Several times a month
4. About once a week
5. Several times a week
6. Almost everyday

(b) money?

1. Never
2. Less than once a month
3. Several times a month
4. About once a week
5. Several times a week
6. Almost everyday

(c) spending time together?

1. Never
2. Less than once a month
3. Several times a month
4. About once a week
5. Several times a week
6. Almost everyday

15. There are various ways that married couples deal with serious disagreements. When you have a serious disagreement with your husband/wife, how often do you:

(a) discuss your disagreements calmly?

1. Never
2. Seldom
3. Sometimes
4. Very often
5. Always
(b) argue heatedly or shout at each other?

1. Never
2. Seldom
3. Sometimes
4. Very often
5. Always

(c) end up hitting or throwing things at each other?

1. Never
2. Seldom
3. Sometimes
4. Very often
5. Always

Alternatives

Single status.

16. Please indicate how much you agree or disagree with the following statement:

It’s better for a person to get married than to go through life being single?

(1) Strongly agree
(2) Agree
(3) Neither agree or disagree
(4) Disagree
(5) Strongly disagree
Participation in activities/organizations.

17. About how often do you do the following things:

(a) spend a social evening with the people you work with?

1. Never
2. Several times a year
3. About once a month
4. About once a week
5. Several times a week

(b) go to a bar or tavern?

1. Never
2. Several times a year
3. About once a month
4. About once a week
5. Several times a week

18. Here is a list of various kinds of organizations. How often if at all, do you participate in each type of organization:

(a) school fraternities or sororities?

1. Never
2. Several times a year
3. About once a month
4. About once a week
5. Several times a week

(b) literary, art study or discussion groups?

1. Never
2. Several times a year
3. About once a month
4. About once a week
5. Several times a week
Barriers

Religiosity.

19. How often do you attend religious services?

_____ number of times per:

20. Unit of time.

(1) Day
(2) Week
(3) Month
(4) Year

21. How often if at all, do you participate in church-affiliated groups?

(1) Never
(2) Several times a year
(3) About once a month
(4) About once a week
(5) Several times a week

Children and kin living in the household.

22. Relationship to respondent of other persons on the full-time household roster.

(1) Step-parent
(2) Parent-in-law
(3) Grandparent
(4) Brother or sister
(5) Step-brother or step-sister
(6) Half-brother or half-sister
(7) Brother-in-law or sister-in-law
(8) Grandchild
(9) Other relative
(10) Roommate
(11) Friend
(12) Other nonrelative
(13) Ex-spouse
(14) Same sex lover/partner
23. Age of other persons on the full time household roster (in years).

Control Variables

Duration.

24. Date of 1st marriage?

25. Month of interview

26. Year of interview

Commitment to marriage.

27. Please indicate how much you agree or disagree with the following statement:

Marriage is a lifetime relationship and should never be ended except under extreme circumstances.

(1) Strongly agree
(2) Agree
(3) Neither agree nor disagree
(4) Disagree
(5) Strongly disagree

Assets.

28. Do you own:

(a) your own home?

1. Yes
2. No
(b) other real estate?

1. Yes
2. No

(c) a business or farm?

1. Yes
2. No

29. Asset value

How much do you think your (Asset type) would sell for now?

_________ (dollars)

30. Savings

What is the approximate total value of your (and your husband's/wife's) savings, including savings accounts, savings bonds, IRA’s, money market shares, and CD’s?

(1) None
(2) $1 to $1,499
(3) $1,500 to $2,999
(4) $3,000 to $4,999
(5) $5,000 to $9,999
(6) $10,000 to $19,999
(7) $20,000 to $49,999
(8) $50,000 to $99,999
(9) $100,000 or more
31. Investments

What is the approximate total value of your (and your husband's/wife's) investments, including stocks, bonds, shares in mutual funds, or other investments?

(1) None
(2) $1 to $1,499
(3) $1,500 to $2,999
(4) $3,000 to $4,999
(5) $5,000 to $9,999
(6) $10,000 to $19,999
(7) $20,000 to $49,999
(8) $50,000 to $99,999
(9) $100,000 or more

Completed education.

32. This variable is an extraction of primary respondents' formal educational attainment level from their detailed education attendance and degree history. The variable represents either the highest elementary or secondary grade level completed, or the highest postsecondary degree level obtained from a college, university, or professional school. Passing a high school equivalency test (GED) is counted as high school graduation. The variable does not include attendance at or certificates received from vocational, technical, trade, business, secretarial, or nursing schools. Persons who did NOT complete high school but attended a college (usually a two-year community or junior college for one year or less) without receiving a degree or a GED are coded at the grade level they left elementary or high school.

Cohabitation before marriage.

33. Nowadays, many unmarried couples live together; sometimes they eventually get married and sometimes they don't. Did you and your (first) (husband/wife) live together before you were married?

(1) Yes
(2) No

34. Age of respondent.

______ years.