

Pregnancy Decision Making as a Significant Life Event: A Commitment Approach

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A value-laden basis for commitment to goals and the behavioral and affective sequelae of commitment were examined in the context of a stressful life event. Fifty-seven women who were interviewed during a clinic visit for a pregnancy test (Time 1 [T1]) subsequently received positive test results and were then interviewed 2 days later (Time 2 [T2]) and a month later (Time 3 [T3]). The intentionality and the meaning of the pregnancy were associated with self-reported commitment to the pregnancy at T1. In turn, commitment predicted affective states both prior to (T1) and shortly after (T2) receiving test results. Initial commitment also predicted decisions to continue versus to terminate the pregnancy. The decision to continue the pregnancy appeared to bolster self-reported commitment. Relatedly, those continuing the pregnancy reported smoking fewer cigarettes at T3 than at T1. For those aborting the pregnancy, commitment at T1 was negatively related to adjustment at T3. Initial commitment predicted subsequent depression, guilt, and hostility among those who aborted, whereas commitment predicted anxiety among those who continued the pregnancy. Other correlates of commitment (pregnancy concerns, religion, abortion history, and other life goals) were explored.

A young woman in an intimate heterosexual relationship misses her menstrual period, undergoes a pregnancy test, and receives positive test results. She was not planning to get pregnant. She is not even sure about the future of her close relationship. Nevertheless, such a woman may feel some commitment to the pregnancy, possibly because of her values or the specific meaning she attaches to it. Can such feelings of commitment prompt her to continue the pregnancy despite it being an unexpected and disruptive life event? If she continues the pregnancy, what effect will feelings of commitment have on her behavior during the pregnancy? If she terminates the pregnancy, what

effect will residual feelings of commitment have on her adjustment and psychological well-being?

Being pregnant and having a baby represent clearly defined goals for many women (Lalos, Jacobsson, Lalos, & von Schoultz, 1985; Pervin, 1989), but these same events can be sources of significant stress not only for those who elect to have the baby (Lobel, 1994) but also for those deciding to terminate the pregnancy (Adler, 1992). In studying commitment within this context, we addressed theoretical issues concerning commitment and its relations to goals and stressful life events. We did this by testing five predictions about an underlying basis for commitment, behavioral manifestations of commitment, and affective implications of commitment.

What Underlies Commitment?

The first question we sought to address was the underlying basis of commitment. Psychologists from varied perspectives have studied commitment and have offered various definitions of the concept. In social psychology, Kiesler and Sakumura (1966) defined commitment as "the pledging or binding of an individual to behavioral acts" (p. 349). From a sociological perspective, Kanter (1972) stated, "A person is committed to the extent that he sees it as expressing or fulfilling some fundamental part of himself" (p. 66). In the close relationships literature, Rusbult (1983) defined commitment as "the tendency to maintain a relationship and to feel psychologically 'attached' to it" (p. 102).¹

¹ See also definitions of commitment in the stress and coping literature (Kobasa, 1982) and the organizational behavior literature (Mathieu & Zajac, 1990).

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Our approach was to start with a working definition of commitment as an internal psychological state in which a person feels tied to or connected to someone or something. Using this general definition, we identified variables that are associated with the construct (for a review, see Lydon, 1996). Whereas previous researchers linked the publicness of one's attitude (Kiesler, 1971), investments or "sunken costs" (Rusbult, 1983), and personal responsibility for incurring costs (Staw, 1976) with degree of commitment, we have emphasized a theme articulated by Brickman (1987), namely that commitment is grounded in meaning and values. The notion is that people feel especially committed to goals, relationships, and life tasks that express their core values, identities, and assumptive beliefs about themselves (e.g., I am a good person) and their world (e.g., people get what they deserve). Moreover, evidence of commitment to a value-relevant self-defining goal or project is clearest when the commitment is tested by adversity (Brickman, 1987; Kelley, 1983).

In an initial demonstration of the value-commitment relation, Lydon and Zanna (1990, Study 1) found that participants felt especially committed to their personal projects (Little, 1983) to the extent that the projects were expressive of personal values. Values were especially predictive of commitment to projects that were stressful and difficult. Moreover, values predicted commitment independent of other robust predictors of commitment, such as rewards and investment (cf. Rusbult, 1983). In Lydon and Zanna's Study 2, the value expressiveness of volunteer projects at the beginning of a term predicted an increase in commitment over the course of the term and intentions to continue projects into the next term. Again, adversity over the course of the term moderated the value-commitment relation, such that when little adversity was experienced, values assessed at the outset were unrelated to changes in commitment, but in the face of high adversity, values were positively related to changes in commitment and intentions to continue the project.

Our first prediction (Hypothesis 1) then was a positive association between the extent to which the pregnancy was perceived as being expressive of one's values and identities (i.e., the meaning of the pregnancy) and self-reported commitment to the pregnancy. By studying the value-commitment relation in the context of a major life event, we identified a commitment domain in which most everyone experiences some degree of adversity. In this way, we were able to test the value-commitment relation in the context of a significant life event without relying on individual differences in perceived adversity as a moderating variable.

Attitudinal Commitment and Actual Behavior

In elaborating on the notion of a value-laden self-defining commitment, it is important to consider self-reports of commitment not only as an outcome measure but also as a predictor of other variables. An important extension of previous findings then is to demonstrate that self-reports of commitment predict actual behavior (and not just behavioral intentions). Typically this is conceptualized in terms of behavioral persistence (e.g., Dishman, Ickes, & Morgan, 1980; Rusbult, 1983; Teger, 1980). Interestingly though, in the context of significant life events, one

can examine the relationship between self-reported commitment and a subsequent significant life decision, such as the decision to marry a person or to undergo a medical treatment. In the current context, would a woman's self-reported commitment about a possible pregnancy at the time of a pregnancy test actually predict her decision about whether to continue or terminate the pregnancy? From a commitment perspective then, our second prediction (Hypothesis 2) was that a value-laden self-defining feeling of commitment would be positively related to the decision to continue the pregnancy.

Just as felt commitment may influence a behavioral decision, in turn, the decision itself (especially a stressful one) may influence subsequent feelings of commitment, creating a reciprocal relation between attitudinal and behavioral expressions of commitment. Dissonance (Brehm & Cohen, 1962; Staw, 1976) and self-perception (Bem, 1972) researchers have indicated that behavior may bolster attitudinal commitment (see also Lydon & Dunkel-Schetter, 1994; Lydon, Zanna, & Ross, 1988). Moreover, commitment theory (Brickman, Dunkel-Schetter, & Abbey, 1987) suggests that predecisional ambivalence may heighten postdecisional feelings of commitment. We expected that feelings of commitment would increase as a function of making a stressful decision that affirms one's commitment. Our third prediction (Hypothesis 3) then was that among those who chose to continue the pregnancy, a subset of women who were relatively low in predecisional commitment would subsequently experience an increase in felt commitment as a result of their behavioral decision.

Evidence of bolstered or strengthened commitment may be especially compelling if increased feelings of commitment are associated with other behaviors reflecting commitment. For example, the strength of commitment to a close relationship has been related to accommodation behavior, the degree to which one responds to a partner's negative behaviors with relationship-constructive rather than relationship-destructive behaviors (Rusbult, Verette, Whitney, Slovik, & Lipkus, 1991). Essentially, to the extent that one is committed to a goal, we expected the person to engage in behaviors that facilitate goal attainment: accommodate for a good marriage, stop smoking for a healthy baby, and work hard for a successful career. Thus, our fourth prediction (Hypothesis 4) was that those who decided to continue the pregnancy (all generally high in commitment after the pregnancy decision) would report smoking cigarettes less often after deciding to continue the pregnancy than they would prior to receiving confirmation that they were pregnant. Moreover, we predicted that after they decided to continue the pregnancy, these women would report smoking less than would those who decided to terminate their pregnancy.

Adjustment to an Abortion

Some stressful decisions result in the termination of a commitment (e.g., relationship dissolution or abortion). The stressful life events literature has revealed that many people adjust reasonably well in response to stressful life events such as cancer (Taylor, 1983), loss of a spouse (Wortman & Silver, 1987), or abortion (Adler et al., 1990). Our theoretical approach suggests that commitment may be an important moderating variable in adjustment to stress whether it is stress due to threatened or lost

goals. In fact, a longitudinal study of depression onset by Brown, Bifulco, and Harris (1987) found that women with a major stressful event that was related to a life domain of marked commitment were almost three times more likely to develop depression than were those for whom the experience of a stressful life event did not relate to a committed life domain.

In an earlier article, Cohan, Dunkel-Schetter, and Lydon (1993) reported that women who aborted their pregnancy were generally more distressed than were those continuing the pregnancy shortly after learning they were pregnant. However, this difference in distress abated shortly after the women terminated their pregnancy, a finding consistent with the conclusions of Adler et al. (1990). Because we expected commitment to predict the decision about whether or not to abort, it was unlikely that we would have many women high in commitment undergoing abortions and thereby experiencing a strong sense of commitment loss. However, we believed we might still find some variation in commitment at the low end of the commitment continuum among women undergoing abortions. Within the group of women undergoing abortions, we predicted that those relatively high in commitment (but still lower than those continuing the pregnancy) would report more negative affect and less positive affect following the abortion than would those low in commitment (Hypothesis 5).

An important goal in this research was to identify a context in which we could examine all of the aforementioned aspects of commitment. We sought a domain in which we could capture commitment at a very early stage and observe a significant and rapid progression of commitment processes. For these reasons, we chose to study women seeking pregnancy tests in a clinic setting.

Psychological Aspects of Pregnancy and Abortion

In the United States in 1988, there were approximately 3.9 million live births and 1.6 million abortions (U.S. Bureau of the Census, 1992). In Canada in 1991, there were approximately 400,000 live births and 95,000 abortions (Statistics Canada, 1992). The psychological study of pregnancy spans a vast array of issues from conception (Miller, 1983) to psychosocial factors related to birth outcomes (Collins, Dunkel-Schetter, Lobel, & Scrimshaw, 1993; Cutrona, 1984, 1989). Psychologists have examined maternal self-definitions and the transition to motherhood (Ruble et al., 1990), infertility (Stanton & Dunkel-Schetter, 1991), amniocentesis (Lydon & Dunkel-Schetter, 1994), abortion (Major et al., 1990), and labor pain (Melzack, 1984, 1993).

Psychological aspects of pregnancy decisions have been of particular relevance to the decision-making (e.g., Beach & Morrison, 1989) and stress and coping literatures (Adler et al., 1990). In the decision-making literature, Bracken, Klerman, and Bracken (1978a) found that the pregnancy decision was associated with the length of the sexual relationship with the father, attitudes about abortion, and the importance of not compromising career goals or social life. Moreover, gladness about the pregnancy decision was associated with happiness about being pregnant, ease of making the pregnancy decision, the decision to deliver (rather than to abort), and initial acceptance

(rather than rejection) of the eventual pregnancy decision (Bracken, Klerman, & Bracken, 1978b).

From a stress and coping perspective, making the decision to abort a pregnancy has been a particular focus of research. In their review of the literature, Adler et al. (1990) noted that, in general, women undergoing abortions do not appear to be terribly distressed shortly after the abortion procedure. Factors associated with relatively greater distress include intendedness of the pregnancy (Major, Mueller, & Hildebrandt, 1985), meaning of the pregnancy (Major et al., 1985), stage of the pregnancy (first vs. second trimester), attitudes toward abortion, perceived support for the decision to abort, and use of denial and nonuse of approach coping strategies (Cohen & Roth, 1984).²

In their review of psychosocial predictors of adjustment to abortion, Major and Cozzarelli (1992) concluded that it is time "to move beyond the question of 'How do women cope with abortion?' to examine the corollary question, 'Compared to what alternative?'" (p. 140). By studying women who continued the pregnancy as well as those who terminated the pregnancy, we took a first step in addressing this question. Moreover, studies of women adjusting to abortion typically begin the day of the abortion or shortly thereafter (Adler et al., 1990). By interviewing women shortly before and shortly after receiving pregnancy test results, we examined adjustment to abortion in a more prospective fashion.

Our approach was to conceptualize pregnancy decisions as a significant life event that may be potentially stressful depending, in part, on personal and social psychological factors as they covary with specific decisions. We propose that psychological commitment may be an important moderator and mediator of psychological responses to pregnancy decisions and significant life events more generally.

Intentionality

Intentionality has been a prominent variable in the literature on psychological responses to abortion (Major et al., 1985), attitude-behavior relations (Fishbein & Ajzen, 1975), and cognitive dissonance (Wicklund & Brehm, 1976). Our study was designed primarily to examine women with unplanned pregnancies who then faced a decision about whether to continue or terminate the pregnancy. As such, we expected intentionality to be generally very low. Nevertheless, we expected that there would still be some variation in intentionality and that this would covary with commitment. We expected intentionality of the pregnancy to be a correlate of commitment to the pregnancy. Moreover, we speculated that intentionality may engender feelings of commitment that might then mediate behavioral decisions and affective responses. Finally, we deemed it important to demonstrate that the hypothesized relationship between value-laden commitment and adjustment to an abortion decision was not accounted for by intentionality.

² Importantly, some factors identified may be confounded with others. For example, a second-trimester abortion differs from a first-trimester abortion in terms of a host of medical, demographic, and psychological variables (Adler, 1982). Also, it appears that the benefits of perceived social support may be indirect and mediated by an increased sense of self-efficacy (Major et al., 1990).

Method

Overview

Women from Los Angeles and Montreal were interviewed at a clinic prior to receiving pregnancy test results (Time 1), within 9 days of receiving test results (Time 2), and 4–7 weeks after receiving test results (Time 3). At Time 1 and Time 2, women responded to scales assessing their concerns about the pregnancy, their commitment to the pregnancy, and the relationship of the pregnancy to their values and identities. These questions were repeated at Time 3 for those who had not aborted the pregnancy. Standard scales were used to assess positive and negative affect at each of the three time points for all women. Questions about smoking behavior were asked of all women at Time 1 and Time 3. Intendedness of the pregnancy was assessed at Time 1.

Participants

Criteria. Women who presented themselves for a pregnancy test at a clinic and who were of legal age to consent to participate in research were eligible for the study. In Los Angeles, women were required to be fluent in English. In Montreal, women were required to be fluent in English or French.³

Recruitment. Women were approached at a West Los Angeles private women's health clinic specializing in low-cost gynecologic and prenatal care. Women were also approached at a downtown Montreal community health clinic. A total of 243 women were approached by interviewers to participate in the study, and 218 agreed to participate (90% acceptance rate), 98 in Los Angeles and 120 in Montreal. Two hundred six women completed full Time 1 interviews and another 12 women agreed to and completed a partial Time 1 interview including a one-page measure of their positive and negative affect. Twenty-five women (10% approached) refused to participate.⁴

Eighty-five (39%) of the 218 women interviewed at Time 1 received positive pregnancy test results. Eleven women could not be reached by telephone within the parameters of Time 2 and Time 3 interviews, and 8 women had a miscarriage during the study. Of the 66 women interviewed at Time 1 who could be reached by telephone and did not have a miscarriage, 57 women completed Time 3 interviews (86%), 34 in Los Angeles and 23 in Montreal. The 9 women who dropped out of the study consisted of 3 women who completed partial Time 1 interviews, 3 women who completed full Time 1 interviews, and 3 women who completed Time 1 and Time 2 interviews (attrition rate = 14%).

Sample. The participants ranged in age from 16 to 51 years and were in their mid-20s on average ($M = 25.0$, $Mdn = 24.0$, $SD = 6.3$). Thirty-one percent of the sample were working full time, 18% were working part time, 14% were unemployed, and 32% were in school.⁵ Others (4%) were performing periodic day work, were caring for children in the home, or were doing something else. The women had completed an average of 14 years of schooling ($SD = 3.0$ years). Eighty-one percent had no children, 12% had one child, 5% had two children, and 2% had three or more children. Sixty percent of the participants were White, 13% Black, 12% Latino, 5% Asian, and 10% of other ethnic-racial background.

Seventy percent of the participants were never married, 22% were married, 6% divorced, 2% separated, and 1% widowed. Eighty-five percent of those not married reported having a steady partner. Thirty-seven percent of the sample lived with a spouse or a close companion. Fifty percent of the participants were of a Catholic religious background, 18% Protestant, 7% Jewish, 3% Muslim, 8% other, and 13% of no religious background. Twenty-one percent were members of a religious organization when interviewed. In Montreal, English was the first language of 52% of the sample, French 22%, and other languages 25%. The interviews were conducted in a primary language for 95% of the Montreal sample and a secondary language for 5% of the sample.

Fifty percent of the sample had never been pregnant before. Sixty-five percent of the sample never had an abortion before, 22% had had one previous abortion, and 13% had had two or more previous abortions. Ten percent of the sample had a history of miscarriage, and 20% had previously delivered a live birth.

Those who were not pregnant (negative test results) were compared with those who were pregnant through a series of *t* tests. There were no reliable differences between groups on age, education, ethnicity, language, marital status, living situation (with or without a partner), history of abortion, or miscarriage. Those who tested positive for being pregnant were more likely to have had a previous live birth (28%) compared with those who were not pregnant (14%), $t(212) = 2.60$, $p = .01$.

Procedure

Women were recruited for the study during their visit to a health clinic to undergo a pregnancy test. Trained female interviewers informed women of the nature of the study and obtained their consent to participate. The first interview (Time 1) took place during the visit to the clinic and prior to receiving pregnancy test results. Participants first completed the affect questionnaire and then were interviewed for approximately 20–30 min about their thoughts, feelings, and behaviors regarding the possibility of being pregnant. Urine samples were obtained and tested, and women were given the results either immediately in person or within a few hours by telephone. Those with positive pregnancy test results were interviewed twice more by telephone for 20 min on each occasion. The second interview (Time 2) took place within 10 days of women receiving their pregnancy test results ($Mdn = 2$ days, range = 1–9 days). The third interview (Time 3) was conducted within 4–7 weeks after the pregnancy test (median days after Time 2 = 33).

Measures

Intentionality of the pregnancy was measured in two ways. First, a modified form of Miller's (1974, 1992) intentionality scale was used. Using a decision-tree format, we generated 5 points on the scale: 0 (*women using birth control all the time*), 1 (*women using birth control on and off*), 2 (*women not using birth control but neither intending to get pregnant nor intending to have a child if pregnant*), 3 (*women not using birth control and not intending to get pregnant but intending to have a child if they got pregnant*), and 4 (*women not using birth control and intending to get pregnant*). In addition, women were asked to rate on a 5-point scale ranging from 0 (*not at all*) to 4 (*very much*), "To what extent did you intend to get pregnant at this time?"

A *meaning of pregnancy* measure was developed to assess how value-laden and self-defining having a baby or not having a baby would be for

³ A native French speaker trained in psychology in English conducted a first draft of the translation. Subsequently, an expert in French-English translation for psychological research (14 years of experience) reviewed and edited the materials and then solicited comments from the team of fully bilingual interviewers.

⁴ Partial Time 1 interviews were conducted with women who agreed to participate and continue in the study but could stay at the clinic for only a very short time (typically because it was their lunch break from work). There was no difference in affect for full versus partial Time 1 interviews, $t < 1$. An additional 78 women completed an affect balance scale for the nurse when there was no interviewer present to enroll the women in the study. These data were used for psychometric analyses of the affect scale. Finally, 1 woman with a complete Time 1 interview did a partial Time 2 interview because she was spotting. She subsequently did a complete Time 3 interview.

⁵ Some frequency distributions in the demographic statistics do not total 100% because of rounding.

participants. Using a 5-point scale ranging from 1 (*strongly agree*) to 5 (*strongly disagree*), women were asked how much they agreed or disagreed with four statements: "Having a baby right now" (a) "would express or reflect my values," (b) "would make me feel good about myself," (c) "would reflect my concern for others," and (d) "would be a good and fair thing to do." Women were then given the same four statements with the stem "To *not* have a baby right now. . . ." Items were reverse coded, and the mean for the latter four items was subtracted from the mean for the first four items to create a meaning score ranging from -4 to 4.

Using the same 5-point agree-disagree format, women also rated the following statements: "I want to have a (another) child some day," "Having a baby right now interferes with or competes with other goals in my life," and "I want to have a (another) child now." These three items were designed to explore the relation between the goal to have a baby and other life goals.

Commitment was assessed by asking women to rate to what extent they felt committed, obligated, attached, enthusiastic, a sense of duty, a sense of enjoyment, a burden, and a relief if not pregnant, with the last two items reverse scored. They responded on a 5-point scale ranging from 1 (*not at all*) to 5 (*extremely*).

Affective states were assessed by using 16 items from the Affects Balance Scale (Derogatis, 1975). Participants were asked to rate each of a list of adjectives on a 5-point scale ranging from 0 (*not at all*) to 4 (*extremely*). Negative affect was assessed with 12 items: 3 anxiety items (nervous, tense, and anxious), 3 guilt items (regretful, guilty, and ashamed), 4 depression items (sad, unhappy, worthless, and hopeless), and 2 hostility items (angry and resentful). Positive affect was assessed with 4 items: pleased, contented, glad, and delighted. The average of the positive affects minus the average of the negative affects created an affect balance score with higher numbers reflecting better emotional adjustment.

Pregnancy concerns were assessed by presenting women with 10 potential concerns and asking them in a yes-no format whether these were concerns or worries of theirs: the baby's health, the baby's future, their financial situation, the size of the family, how others will feel about them, their own health, their relationship with their partner, their religion, their future goals, and their self-respect. Women were also asked to rate on a 5-point scale to what extent these concerns created conflict for them.

Wantedness was assessed by using a modified form of Miller's (1974) wantedness scale. Again, 5 points were generated: 1 (*women who rejected being pregnant at this time and definitely planned to terminate the pregnancy*), 2 (*women who accepted being pregnant, but preferred to not be pregnant, and were considering or had considered terminating the pregnancy*), 3 (*women similar to #2 but were not giving consideration to terminating the pregnancy*), 4 (*women who wanted to be pregnant but faced important problems because of the pregnancy*), and 5 (*women who wanted to be pregnant and were not faced with important problems because of the pregnancy and having a baby*).

Women were asked to report their smoking status using one of three options (*never smoked, used to but don't now, or currently smoke*). If they reported currently smoking, they were also asked how many cigarettes per day they smoked.

Results

Descriptive Statistics

As seen in Table 1, preliminary descriptive analyses were performed on the central variables of the study. Measures of commitment, meaning, and affect were all found to be high in internal consistency (Cronbach's α) and test-retest reliability. The two intentionality items—the modified Miller (1974,

Table 1
Descriptive Statistics for Predictor and Criterion Variables at Time 1

Measure (scale range)	<i>M</i>	<i>SD</i>	α	<i>r</i>
Commitment (1 to 5)	2.35	1.18	.91	.94
Meaning (-4 to 4)	-0.19	1.96	.81	.84
Affect balance (-4 to 4)	-0.12	1.75	.91	.86
Positive affect (0 to 4)	1.12	1.21	.94	.85
Negative affect (0 to 4)	1.24	0.85	.90	.74
Intentionality (0 to 4)	1.06	1.21		

Note. At Time 1, 206 full interviews, 12 partial interviews, and an additional 78 affect balance scales were completed. Correlations are between Time 1 and Time 2 measures.

1992) intentionality measure and the face-valid measure—were correlated, $r(202) = .66$, and these were averaged together as a measure of the intentionality of the pregnancy. Thirty-two women decided to terminate the pregnancy, 30 of whom had an abortion prior to Time 3. Twenty-five women decided to continue the pregnancy.

Overview of Hypothesis Testing

First, using correlational and path-analytic techniques, we tested the direct and indirect relations that meaning, intentionality, and commitment had with affect, both before and shortly after receiving pregnancy test results, and with the actual pregnancy decision. Second, we examined the association between behavioral commitment (i.e., deciding to continue the pregnancy) and subsequent changes in attitudinal commitment by testing for increases in commitment among those who were low in Time 1 commitment yet decided to continue the pregnancy. Third, we used planned comparisons to test for decreases in smoking behavior from Time 1 to Time 3 among those continuing the pregnancy (behavioral commitment). Finally, we tested the hypothesis that commitment would be negatively related to adjustment following an abortion by using affect at Time 1 and Time 2 as baseline control measures for analyses of changes in affect.⁶

Commitment as a Mediator of Time 1 Affect, Time 2 Affect, and Pregnancy Decision

We hypothesized that meaning and intentionality would be correlated with commitment at Time 1 and that commitment, in turn, would mediate the relations that intentionality and meaning had with affect at Time 1, affect at Time 2, and the

⁶ All pregnant women who completed the affect balance scale at each time point ($n = 57$) and the intentionality measure at Time 1 ($n = 56$) were deemed eligible for analyses across time. Because meaning at Time 1 and meaning at Time 2 were highly correlated and commitment at Time 1 and commitment at Time 2 were highly correlated, scores on these measures were averaged to predict Time 3 adjustment. Four women did partial Time 1 interviews and 1 woman did a partial Time 2 interview, and their meaning and commitment scores from either Time 1 or Time 2 were used for analyses across time points.

Table 2
Intercorrelation of Variables in the Path Model

Variable	1	2	3	4	5
1. Commitment	—				
2. Meaning	.76	—			
3. Intentionality	.56	.43	—		
4. Affect balance (Time 1)	.72	.64	.53	—	
5. Affect balance (Time 2)	.76	.62	.60	.86	—
6. Decision ^a	.83	.76	.58	.77	.78

^a0 = abort, 1 = continue.

decision about the pregnancy (continue vs. abort). We simultaneously tested these sets of relations with path analysis by using the AMOS statistical program (Arbuckle, 1993; see Table 2 for the full set of correlations). From the path model in Figure 1, one can see that all predicted pathways were highly significant ($p < .01$). Taken together, meaning ($\beta = .64$) and intentionality ($\beta = .29$) accounted for 65% of the variance in commitment. In turn, commitment accounted for 52% of the variance in Time 1 affect. Commitment ($\beta = .83$) also accounted for 69% of the variance in pregnancy decisions. In addition, note that commitment ($\beta = .29$) had a significant direct path to affect at Time 2 as well as the indirect path through Time 1 affect balance, collectively accounting for 78% of the variance.

An alternative model that removed commitment and had direct paths only from meaning and intentionality to the three outcomes (affect at Time 1, affect at Time 2, and pregnancy decision) was a significantly worse model in comparison, $\Delta\chi^2(1, N = 56) = 60, p < .001$. A third model, a partial mediation model, revealed a significant direct path from meaning to pregnancy decision ($\beta = .30, p < .01$). All other direct paths from meaning and intentionality to the three outcome variables were not significant when accounting for commitment.

In sum, these analyses suggest that meaning and intentionality engendered feelings of commitment that in turn elicited more positive and less negative emotions about the possibility of being pregnant. Moreover, feelings of commitment continued to influence emotions after women received confirmation of being pregnant, independent of Time 1 affect. Finally, feelings of commitment in fact were highly predictive of actual behavior.

Changes in Commitment

Because commitment scores among those who continued the pregnancy were generally high, it was difficult to examine increases in commitment as a result of the pregnancy decision. To do this, three groups were created among those who continued the pregnancy. Those representing the lowest third of the distribution ($n = 8$) were considered low in commitment at Time 1 ($M = 2.67$), those in the second tertile ($n = 7$) were considered moderate ($M = 3.69$), and those in the third tertile ($n = 9$) were considered high in commitment at Time 1 ($M = 4.53$). Using a 3 (Time 1 commitment: low vs. moderate vs. high) \times 2 (Time 1 vs. Time 3) between-within analysis of variance (ANOVA), we found that commitment tended to increase from Time 1 ($M = 3.67$) to Time 3 ($M = 3.88$), $F(1, 21) = 3.81, p < .07$. This increase was qualified by a commitment group (low vs. moderate vs. high) by time of measure interaction, $F(1, 21) = 5.36, p < .02$. As seen in Table 3, the interaction was due to the Time 1 low-commitment group ($M = 2.67$) reporting increased commitment at Time 3 ($M = 3.41$), $t(21) = 3.54, p < .01$, whereas reported commitment by the other two groups did not change from Time 1 to Time 3, $t_s < 1$.

Pregnancy Commitment and Health Behaviors

All women were asked at Time 1 and Time 3 about their smoking status and if they smoked, how many cigarettes per

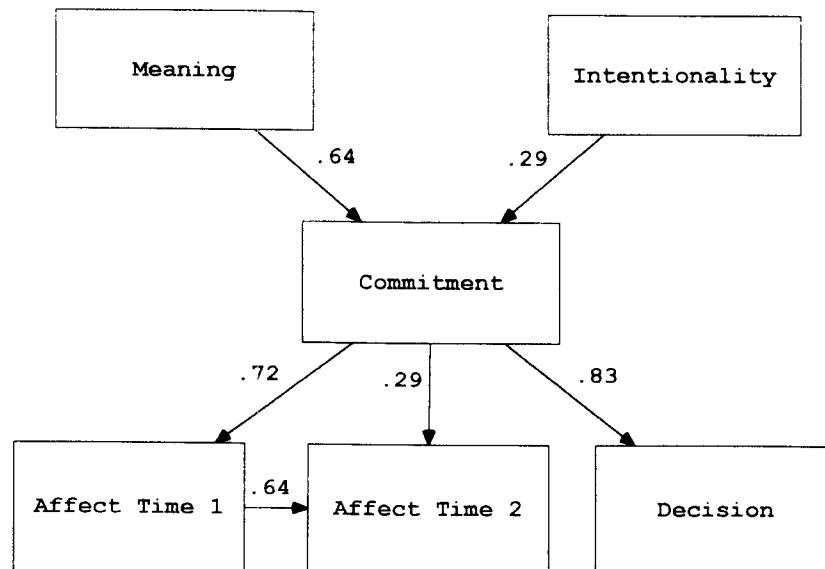


Figure 1. Path model of commitment mediating affect at Time 1 and Time 2 and pregnancy decision. All paths are significant at $p < .01$.

Table 3
Mean Commitment Scores Among Women Choosing
To Continue the Pregnancy

Initial commitment level (T1)	n	Pregnancy decision	
		Before (T1)	After (T3)
Low	8	2.67 _a	3.41 _b
Moderate	7	3.69 _a	3.84 _a
High	9	4.53 _a	4.35 _a

Note. Within rows, means with different subscripts differ significantly ($p < .01$). T1 = Time 1; T3 = Time 3.

day they smoked. The question was whether commitment to the pregnancy might relate to changes in health behaviors that promote the commitment, that is, the pregnancy. Because the decision to carry was a behavioral commitment and it was reflected in subsequent high reports of commitment among all women who decided to continue the pregnancy, we treated those who carried as a pregnancy commitment group and examined changes in their smoking behavior from before they received their test results (Time 1) to 5 weeks later (Time 3) through planned comparisons. Among the smokers, those who continued the pregnancy ($n = 6$) reported a significant decrease in smoking from Time 1 ($M = 6.50$) to Time 3 ($M = 1.33$), dependent $t(5) = 3.32, p < .03$, whereas those who aborted the pregnancy ($n = 12$) did not report a change in smoking behavior from Time 1 ($M = 11.25$) to Time 3 ($M = 9.58$), $t < 1$. Moreover, those who continued their pregnancy reported less smoking at Time 3 than those who aborted their pregnancy, $t(16) = 3.86, p < .01$.

Commitment and Adjustment to Abortion Decision

To examine the relationship between commitment at the time of the pregnancy test and subsequent emotional adjustment following an abortion, we used multiple regression analysis. The affect balance scores at Time 3 of those women who aborted the pregnancy prior to Time 3 ($n = 30$) were entered as the criterion in a hierarchical regression analysis. In the first step, affect balance scores from Time 1 and Time 2 were entered. Collectively, these two variables did not reliably account for affect at Time 3 ($R^2 = .01, F < 1$). Zero-order correlations were less than .10 and were not significant. In the second step of the regression, intention to get pregnant and meaning of the pregnancy were entered. These too were not significant in accounting for affect at Time 3, $F_{\text{change}} = 1.70, ns$. Zero-order correlations revealed that meaning tended to correlate with Time 3 affect, $r(28) = -.27, p < .08$, but intentionality did not, $r(28) = .16, ns$.

In the third step of the regression, commitment was entered and accounted for 17% of the variance in Time 3 affect, $F_{\text{change}}(1, 24) = 5.94, r = -.47, \beta = -.46, sr = -.42, p < .03$. An examination of specific affects revealed that commitment accounted for changes in negative affect from Time 1 and Time 2 to Time 3 but did not account for changes in positive affect. Among the negative affects, commitment was especially predictive of changes in depression, $\beta = .49, sr = .46, p < .01$; guilt, β

$= .42, sr = .39, p < .03$; and hostility, $\beta = .68, sr = .63, p < .01$; but not anxiety, $\beta = .15, sr = .14, ns$.

In contrast to those aborting the pregnancy prior to Time 3, among those who decided to continue the pregnancy ($n = 23$), affect at Time 3 was correlated with affect at Time 1, $r(21) = .43, p < .03$; affect at Time 2, $r(21) = .47, p < .02$; and intentionality, $r(21) = .54, p < .01$, but not commitment, $r(21) = .01$. Whereas commitment predicted changes in negative affect among those aborting the pregnancy, intentionality tended to predict changes in positive affect among those continuing the pregnancy, $r = .60, sr = .30, \beta = .38, p = .10$. Interestingly, the one negative affect that was correlated with commitment was anxiety, $r(21) = .50, sr = .36, \beta = .45, p < .01$, the only negative affect not related to commitment among those who aborted the pregnancy.

Thus, for those continuing the pregnancy, affective responses to the possibility of being pregnant predicted affect 5 weeks later, but this did not hold for those aborting the pregnancy. Instead, feelings of commitment (or lack thereof) toward a possible pregnancy predicted subsequent affect after the decision to abort the pregnancy. Moreover, for those continuing the pregnancy, early levels of commitment predicted increased feelings of anxiety, whereas for those aborting, commitment predicted increased feelings of depression, guilt, and hostility.

Commitment Level, Pregnancy Decision, and Changes in Affect

To examine mean changes in affect balance over time as a function of pregnancy decision and commitment level, we generated four groups. Median splits of Time 1 commitment scores were done within both pregnancy decision groups, creating a continue-high-commitment group, a continue-low-commitment group ($Mdn = 3.65$), an abort-low-commitment group, and an abort-high-commitment group ($Mdn = 1.30$).

A four-groups repeated measures ANOVA of affect balance scores across all three time points yielded significant main effects for group, $F(3, 46) = 18.10, p < .001$, and time of measurement, $F(2, 92) = 37.97, p < .001$, which were qualified by a group by time interaction, $F(6, 92) = 10.57, p < .001$. As seen in Figure 2, among those who continued their pregnancy, those high in early commitment (Time 1; $n = 11$) reported more positive emotions shortly after they received confirmation that they were pregnant (Time 2 $M = 2.32$) than did those low in commitment ($n = 12; M = 1.15$), $t(92) = 2.83, p < .01$. One month later (Time 3), there was no longer a significant difference in emotional responses as a function of initial commitment among those who decided to continue the pregnancy (high-commitment $M = 1.92$ vs. low-commitment $M = 1.75$), $t < 1$.

In contrast, among those who aborted the pregnancy, differences between the high- ($n = 14$) and low-commitment ($n = 13$) groups were not significant at Time 2 (high-commitment $M = -1.01$ vs. low-commitment $M = -1.65$), $t(92) = 1.68, p < .10$. However, as predicted, at Time 3 differences among those who had aborted were in the reverse direction from those who had continued the pregnancy. Among those who had aborted, those who felt relatively more committed to the pregnancy reported less positive and more negative emotions ($M = 0.75$)

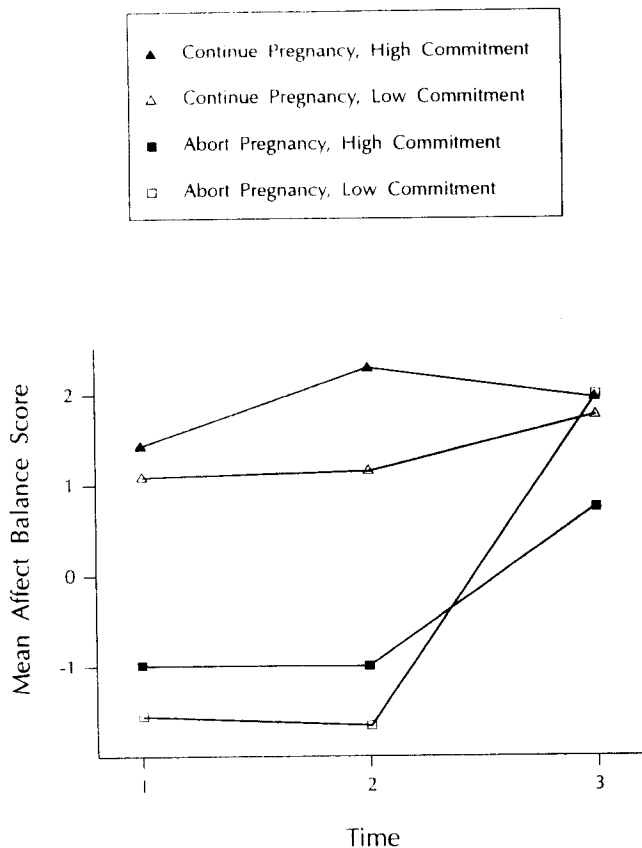


Figure 2. Affect balance across time as a function of pregnancy decision and commitment level.

than those initially low in commitment ($M = 1.95$), $t(92) = -3.15$, $p < .01$.

Exploratory analyses revealed one other variable, in addition to commitment, that predicted affective responses to having an abortion. The extent to which women at Time 1 reported that having a baby right now interfered with or competed with other goals in their lives predicted changes in affect from Time 1 and Time 2 to Time 3, $\beta = -.39$, $sr(25) = .38$, $p < .02$, independent of commitment. Thus, women who most strongly believed that having a baby interfered with other life goals showed better adjustment following the abortion decision than did those who did not feel having a baby created as much goal interference.

Correlates of Commitment

Concerns about the pregnancy, religiosity, and wantedness were examined as potential correlates of commitment. Women who reported that the pregnancy created concerns about their future goals reported lower levels of commitment ($n = 39$; $M = 2.22$) than did those who did not report such concerns ($n = 15$; $M = 3.25$), $t(52) = -2.90$, $p < .01$. Conversely, women who reported concerns about the baby's health reported greater commitment ($n = 38$; $M = 2.80$) than did those who did not report such concerns ($n = 16$; $M = 1.79$), $t(52) = 2.94$, $p < .01$. Importance of religion (but not religious background) was

correlated with commitment, $r(55) = .34$, $p < .01$. Finally, not surprisingly, the wantedness of the baby correlated highly with commitment, $r(49) = .68$, $p < .01$.

Although concerns about future goals and the baby's health, importance of religion, and wantedness of the pregnancy all predicted pregnancy decision, none of them accounted for significant variance (β s *srs*) when controlling for commitment. Moreover, commitment remained a significant predictor of pregnancy decision.

Abortion History

The number of abortions a woman had had prior to the current pregnancy was positively related to commitment to the current pregnancy, $r(55) = .35$, $p < .01$, but the number of children was not related to commitment to the pregnancy, $r(55) = .18$, *ns*. Those who previously had had at least one abortion reported more commitment ($n = 18$; $M = 3.16$) than did those with no history of abortion ($n = 39$; $M = 2.16$), $t(55) = 3.03$, $p < .01$. Analysis of covariance showed that the relationship between abortion history and pregnancy commitment was still significant controlling for age, $F(1, 54) = 5.76$, $p < .05$, and intendedness, $F(1, 53) = 4.71$, $p < .05$. In addition, fewer of the women who had aborted a previous pregnancy decided to abort the current pregnancy (28%) as compared with those who never had had an abortion (69%), $t(55) = 3.13$, $p < .01$. This relationship was still significant when controlling for intendedness, $F(1, 53) = 4.62$, $p < .05$, and marginally so when controlling for age, $F(1, 54) = 3.43$, $p < .07$. However, the relationship between abortion history and pregnancy decision was not significant when controlling for commitment, $F < 1$, whereas the relationship between commitment and pregnancy decision remained significant when controlling for abortion history ($p < .001$).

Discussion

These results support a set of five hypotheses that advance an understanding of commitment as it relates to goals and stressful life events. Consistent with previous research (Lydon & Zanna, 1990) and theorizing (Brickman, 1987), the conceptualization of commitment used here was grounded in meaning. Women felt especially committed to the pregnancy to the extent that it expressed their values, identities, and core beliefs. Commitment, in turn, predicted the decision to continue rather than to terminate the pregnancy. Moreover, the decision to continue the pregnancy (behavioral commitment) was associated with self-reported behavior (decreased smoking) that would facilitate a more successful pregnancy outcome. Finally, among those who continued the pregnancy, early levels of commitment were positively associated with subsequent anxiety, whereas among those who terminated the pregnancy, early levels of commitment were positively associated with subsequent feelings of anger, guilt, and depression.

In addition, commitment mediated the relations that meaning and intentionality had with affective states and pregnancy decisions. Women who intended to be pregnant and found the pregnancy meaningful were especially committed to the pregnancy. Commitment, in turn, was associated with positive emo-

tional responses to the possibility of being pregnant and to the confirmation of being pregnant. Moreover, the decision to continue intended and meaningful pregnancies was accounted for, in large part, by the feelings of commitment engendered. As Novacek and Lazarus (1990) noted, values, or meaning if you will, may guide a person's judgment about what is good or bad, but "values do not necessarily imply energy or lead to action" (p. 695). Instead, it is commitment that connotes energy and action. Nevertheless, one apparent exception to the mediational model was the direct relation between meaning and pregnancy decision.

For those who decided to continue the pregnancy, commitment at the time of pregnancy testing also predicted affective responses after receiving test results. Those high in commitment reported greater positive and less negative affect once they received confirmation that they were, in fact, pregnant. Once those low in commitment made the decision to continue the pregnancy, they too experienced the same degree of positive rather than negative emotions.

This shift in emotional responses of those low in commitment corresponded with increases in their felt commitment to the pregnancy. Although those who continued the pregnancy were, as a group, much more committed to the pregnancy than were those who terminated the pregnancy, a subset of these women had commitment scores that were below the midpoint of the scale. In a sense, these women had relatively weak or ambivalent attitudes about the pregnancy. Subsequently, they experienced an increase in attitudinal commitment that was fueled by the decision to continue the pregnancy (cf. Brickman et al., 1987; Thompson & Holmes, in press). Thus, attitudinal commitment predicted pregnancy decisions, and in turn, the pregnancy decision bolstered attitudinal commitment. This reciprocal relation between attitudinal and behavioral expressions of commitment underscores the dynamic nature of commitment processes (Brickman et al., 1987; Klinger, 1975) and is consistent with the general notion of a reciprocal relation between attitudes and behavior.

For those who decided to terminate the pregnancy, initial commitment predicted affective responses 1 month later (Time 3). At Time 2, these women were faced with an unwanted pregnancy, and as a group, they reported more negative and less positive affect than did those who decided to continue the pregnancy, independent of commitment level. Those planning to terminate the pregnancy were particularly distressed about being pregnant. However, 1 month later these women were no longer coping with an unplanned pregnancy but instead with aborting the pregnancy. For those with slight feelings of commitment initially (1.30 or greater on a 1-5 scale), affective responses 1 month later were more negative than they were for those who were essentially uncommitted to the pregnancy that they were aborting. It is important to note that even women in the high-commitment-abortion group reported an increase in positive affect over time. The commitment-distress relation revealed that the degree of recovery was not as great for these women. That said, remember that these women were still quite low in initial commitment. In fact, there was only 1 woman who aborted whose commitment score reached the mean commitment score of those who carried. Interestingly, on a scale from

0 to 4, this woman's Time 3 negative affect score was 3.10 as compared with the sample mean of 0.73 ($SD = 0.64$).

The fact that very few women who aborted had commitment scores greater than 2.0 is a reminder that, in our convenience sample, women by and large made pregnancy decisions that were highly concordant with the psychological meaning and commitment of the pregnancy. Given the commitment-adjustment data, it would appear that, for the most part, women were making psychologically adaptive pregnancy decisions within the time frame of our study. Also, the degree to which such a decision was justified a priori may have facilitated the adjustment process. This is reflected in the finding that women who saw having a baby as interfering with other goals experienced better adjustment following the abortion decision.

In discussing adjustment, it is important to note that commitment predicted different negative emotions at Time 3 for women who continued as compared with women who aborted the pregnancy. For those continuing the pregnancy, commitment engendered anxiety about a current goal or life task—having a baby. In contrast, for those aborting the pregnancy, commitment engendered feelings of depression, guilt, and hostility about terminating the pregnancy. These results highlight the potential utility of the commitment construct in building bridges between the goals and stressful life events literatures. Moreover, this differential pattern of relations may increase an understanding of how a challenge or a threat to a commitment may differ from the loss of a commitment object. Interestingly, the pattern of responses by the woman described above who had the highest commitment score among those aborting is revealing. Initially, her feelings of depression, hostility, and guilt were modest (2.5, 1.0, and 2.0, respectively), but her anxiety score was at ceiling (4.0). But a month later, her anxiety had dropped (2.0) and instead her depression (3.25), hostility (3.5), and guilt (3.67) had increased. She felt anxious when the pregnancy was threatened, but she felt depressed, angry, and guilty after the pregnancy had been terminated.

Because of the low levels of commitment and restricted range among those aborting, it may be fruitful in future research to examine the commitment-adjustment relation in another context, such as that of commitment in close relationships, where relationships are often terminated despite feelings of commitment by at least one member of the dyad. With increased variability in commitment to the relationship, one can more easily explore factors that may moderate and mediate the commitment-adjustment relation. For example, it would be interesting to consider whether one copes with the loss of a commitment by pursuing other goals that express the same values, identities, and core beliefs as the lost commitment expressed. Would a woman high in nurturance seek other domains to express this value following an abortion, or would her adjustment be associated with affirming any value or identity of similar importance to the self (Steele, 1988)?

The positive correlations between abortion history and commitment and between abortion history and pregnancy decision were unexpected. In one respect, the lack of a negative correlation may address any notion that women who abort approach subsequent pregnancies rather casually and become repeat aborters. But a significant positive correlation may suggest future research on long-term implications of abortion decisions or

adjustment to stressful life events in general. Although women appear to adjust reasonably well to having an abortion (Cohan et al., 1993), it is unclear why those who have had an abortion previously are then less likely to make that same decision again as compared with those without any abortion experience. By virtue of previously having had an abortion, they feel more committed to the current pregnancy. Statistically controlling for two possible confounds, age and intentionality, did not account for the significant relationships.

More generally, it is interesting to consider that the way people adjust to stressful life events may leave residual effects when they cope and adjust to subsequent life events of a similar nature. For example, one might adjust reasonably well to the termination of a close relationship but then experience the resurfacing of thoughts and feelings some time later when another relationship becomes increasingly intimate or more so when a subsequent intimate relationship becomes stressful. People leading reasonably well adjusted lives still experience intermittent thoughts and feelings associated with stressful life events many years later (Tait & Silver, 1989). The relationship between such memories and current life goals may be a fruitful direction for future research.

From a methodological perspective, the current study had the strengths of examining the psychological aspects of a stressful life event over time—as the participants were in the throes of learning their fate (pregnant or not pregnant) and then taking a course of action (to continue or terminate the pregnancy) in response to the event. By studying women at clinics instead of obstetricians' offices, we reduced the likelihood that the pregnancies were fully planned. As a result, a little more than half of our sample decided to abort as compared with approximately 29% of pregnancies in the United States (U.S. Bureau of the Census, 1992) and 19% of pregnancies in Canada (Statistics Canada, 1992). Our sample allowed us to examine and identify a number of key aspects of commitment processes within the context of an unfolding, specific major life event.

However, the virtue of our research strategy carried with it the cost of interviewing many women who were not pregnant (61% of Time 1 participants). As a result, the size of our final sample of pregnant women studied over time was small. This limited our power to explore higher order interactions and curvilinear relationships. For example, we did not examine individual differences in the stress of being pregnant as it might interact with the meaning of the pregnancy. Despite variation in stress among participants, as a group they experienced a sufficient level of stress to detect the predicted pattern of relations between meaning and commitment that are found under high stress but not under low stress (Kelley, 1983; Lydon & Zanna, 1990). It would be interesting in future research to assess perceived stress, in so much as others (Florian, Mikulincer, & Taubman, 1995; Lydon, 1996) have suggested that commitment actually influences subjective appraisals of stress.

A shortcoming of our research is the reliance on self-report data, particularly regarding smoking behavior. Because of the potential self-report bias, these data likely reflect the influence of pregnancy commitment on intentions to engage in positive health behaviors rather than actual behavior. Yet, given the strong relationship between intentions and behavior (Fishbein & Ajzen, 1975), one might expect that intentions to decrease

smoking will relate to actual decreases in smoking. Ideally, one would test for nicotine through urine analysis to verify self-reported smoking behavior.

Our main purpose in this study was to advance our theoretical understanding of commitment in an important and unfolding real-life context. The context we chose highlighted the potential utility of the commitment construct in furthering our understanding of goals, stressful life events, and psychological aspects of pregnancy. The development of constructs such as commitment may then serve as a meeting place wherein conceptual issues in various domains come together while advancing our understanding of the organizing construct under investigation.

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