The Experience, Impact and Effects of Timing of Adolescent Transitions

by

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Abstract

Two studies examined the impact of developmental transitions, how such events are experienced, and how elements of their timing affect adolescents. In Study 1, prevalence, experience, and impact of 10 transitions, and effects of self-perceived timing and sequencing, were examined in a community sample of 553 adolescents aged 11-19 years. Transitions in intimate relationships and individuation were rated as most positive and most important to adolescents' identities. Being out-of-synch with peers on timing of first love predicted higher levels of current distress. Early occurrence of first drug use or first romantic relationship was associated with perceiving these events as more positive and important, compared with late occurrence. A typical sequence of intimate interpersonal transitions was identified such that most adolescents had a first relationship prior to onset of sexual intercourse. Those for whom this sequence was disrupted experienced losing virginity as more negative and less important compared to those who followed the typical order. In Study 2, adolescents were followed over 10 months through the transition to senior high school ($\underline{n}$ = 48) or to university ($\underline{n}$ = 41), allowing for cross-sectional and longitudinal comparisons of impact and experience of school milestones. Both events were perceived as highly positive, although starting university was slightly more stressful. A drop in grades was associated with each transition, but no other functional decline was observed after either event. In the younger group, the occurrence of one or more transitions at the same time as starting high school was associated with decreased academic competence six months post-transition, but co-occurrence of transitions was not related to the impact of starting university. Results for both studies are discussed in the context of theories about the impact of developmental transitions, with support for predictions based on the gradual consolidation hypothesis.

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Chapter 1

Introduction

Adolescence is characterized by milestones that mark the end of childhood and the emergence of adulthood, including puberty, sexual initiation, and school transitions. The recognition of the importance of adolescence as the foundation for adult functioning has produced a steady increase in research on this life phase over the last two decades, spanning sociology, demography, medicine, anthropology, and psychology (Furstenberg, 2000; Hoffman, 1996; Newcomb, 1996). Much of this research has centred on explaining the emergence of symptoms and problem behaviours during adolescence, and not without good reason: evidence that major disorders, including anxiety, depression, drug use or dependence and alcohol use or dependence have a modal age of onset during or shortly after this life phase (Burke, Burke, Regier, & Rae, 1990) lends support to the idea that this is a period of significant risk. In contrast, there has been increasing recognition that most individuals navigate adolescence successfully, a fact which is well documented by several longitudinal studies (e.g., Coleman, 1974; O'Malley & Bachman, 1983; Petersen, 1984; Simmons & Blyth, 1987; Stattin & Magnusson, 1990). Given that this life phase generally has a positive outcome, there remains the question of whether there is something unique about adolescence that increases vulnerability in certain individuals (Eccles, Lord, & Roeser 1996), and how to identify those who are at risk. To address these questions, research has focused on developmental transitions in adolescence.

The current program of research examines the experience of transitions from the perspective of adolescents in order to gain insight into factors that may predict difficulties during this life phase. Identifying factors that predict adjustment difficulties in a normative sample of adolescents can highlight which individuals are at risk for later pathology (Eccles et al., 1996), and the focus of the current research is on the adolescent experience of transitions and the impact of transitions on adolescent functioning. In the first study, the prevalence and impact of a number of transitions were examined in adolescents of different ages. The experience of these transitions, in terms of their importance to adolescents' identities and their affective impact, is assessed using a measure developed for the current research, the Adolescent Transition Questionnaire (ATQ). The first study also investigates the impact of factors related to the timing of transitions. In the second study, two groups of adolescents are followed through academic transitions as a model for examining the experience and impact of transitions over time. The ATQ is expanded-upon in this study in order to measure the experience of these transitions on multiple dimensions, including ratings of how stressful the transition is and how well the experience matched with adolescents' expectations. The second study is also designed to test whether the co-occurrence of other transitions affects the impact of academic milestones, and thereby refine the prediction of difficulties during this developmental period.

Adolescence as a Life Phase

Historically, the conception of adolescence is fairly recent, and Arnett (1998) has chronicled the evolution of this life phase in the contemporary West. He described the "modern version" of adolescence that includes prolonged schooling and living with family, as having arisen late in the 19th century. The transition into the role of an adult was historically made through marriage, and this currently remains the marker of adulthood in many traditional societies. However, the increasing age of marriage in North America since the 1960s, along with an emphasis on individualism among contemporary Western cultures, has meant that the transition to adulthood is now less clearly defined. Since the 1960s, Arnett concludes, adolescence has evolved into a life phase characterized by a series of transitions or expected life events that help to shape and consolidate one's identity as adulthood emerges. This view is in keeping with developmental theorists who believe that the numerous physiological, cognitive, and social changes that take place during this life phase are critical to the task of identity formation (e.g., Erikson, 1968; Waterman, 1983).

Currently, adolescence is considered to cover a period anywhere from age 11 to 20 years or older, with ages of entry into and exit from this life phase varying with culture and social class (Schlegel, 2000; Schulenberg, Maggs, & Hurrelmann, 1997). In the research literature, adolescence has generally been considered to start with the events that signal puberty (Newcomb, 1996; Bynner, 2000) or with school transitions (Graber & Brooks-Gunn, 1996) such as starting junior high school. In keeping with the view that

the transition to adulthood is not clearly defined (Arnett, 1998; Furstenberg, 2000; Schulenberg, O'Malley, Bachman, & Johnston, 2000), there appears to be less consensus about which transition marks the exit from adolescence. Events such as finishing one's formal education (e.g., Krahn & Lowe, 1999; Thiessen & Looker, 1999), moving out of the parental home (e.g., Tang, 1997) and achieving some measure of financial independence (e.g., Arnett, 1998) are possible contenders, depending on the individual's social context.

Adolescent Transitions

Transitional periods are the times between one life phase and the next (Spencer & Adams, 1990), and are demarcated by behaviours and events that signal the movement through the life phases (Newcomb, 1996; Rodgers, 1996). Adolescence is characterized as the transitional period between childhood and adulthood, marked by "an extended process of preparation for the challenges and responsibilities of adult life" (Arnett, 1998, p.311). As such, adolescence involves a number of milestones that mark the emergence of adulthood and the acquisition of skills necessary for functioning in an adult role, referred to as developmental transitions. In this section, research related to transitions is examined, including a review of which transitions have been studied most frequently in the literature, how transitions have been selected based on models of development, and how they have been categorized. This section concludes with a working definition of adolescent transitions that was developed for the current research, with an emphasis on how transitions are distinguished from more general life events.

Which Adolescent Transitions Have Been Studied? One way of determining which transitions are important in adolescence is by examining those that have most frequently been studied in research. In his review of the literature, Newcomb (1996) indicated that puberty and first intercourse may be the most frequently studied adolescent transitions. Numerous studies have also investigated school transitions, including entry into *junior high* (e.g., Berndt, Hawkins, & Jiao, 1999; Berndt & Mekos, 1995; Causey & Dubow, 1993; Costin, 1994/1995; Eccles et al., 1993; Eccles, Lord, Roeser, Barber, & Jozefowicz, 1997; Nottleman, 1987; Proctor & Choi, 1994; Seidman & French, 1997; Simmons, 1987; Simmons & Blyth, 1987; Yamamoto & Ishii, 1995) or *middle school* (e.g., Bukowski, Sippola & Newcomb, 2000; Elias, Gara, & Ubriaco, 1985; Elias, Ubriaco, Reese, Gara, Rothbaum, & Haviland, 1992), entry into *senior high school* (e.g., Barone, Aguirre-Deandreis, & Trickett, 1991; Brablc, 1993/1994; Costin, 1994/1995; Isakson & Jarvis, 1999; Newman, Lohman, Newman, Myers, & Smith, 2000; Reyes, Gillock, Kobus, & Sanchez, 2000; Seidman, Aber, Allen, & French, 1996; Simmons & Blyth, 1987; Wallis & Barrett, 1998), graduation from high school (e.g., Aseltine & Gore, 1993; Borgen, Amundson, & Tench, 1996) and entry into *college* (e.g., Alfeld-Liro & Sigelman,1998; Compas, Slavin, Wagner, & Vannatta, 1986; Maggs, 1997).

While puberty, first sexual intercourse, and academic transitions have frequently been examined in the literature, few studies have specified how such transitions fit into models of development or identity formation. Developmental theorists generally appear to agree that adolescent transitions mark the subtle movement "out of the role of

dependent, subordinate child, and into the role of independent, self-sufficient member of society" (Arnett & Taber, 1994, p.532). However, rarely do researchers specify which events during this process are to be considered adolescent transitions. Instead, most tend to focus on the impact of one transition in isolation, or the effects of the co-occurrence of two transitions (Graber & Brooks-Gunn, 1996), without examining how these fit into a broader developmental perspective.

Transitions Considered within a Developmental Perspective. Studies by Arnett (1998) and Newcomb (1996) are exceptions to the research trend of examining transitions in isolation of other events in adolescence. Each author has developed a list of transitions thought to be important to the attainment of adult status in the context of his theory about development. Arnett (1998) developed his list of transitions by empirically examining the criteria applied in order to determine when a person has become an adult. To do so, he interviewed 140 young adults (aged 21 - 28 years) about their perceptions of behaviours or milestones that are necessary for a person to be considered an "adult." Possible items were drawn from varying empirical and theoretical perspectives. The resulting list consisted of 38 items, with the three highest-ranked criteria being: accepting responsibility for one's self, making independent decisions, and financial independence.

While Arnett's (1998) results are valuable in terms of empirically deriving a list of criteria and events considered important to reaching adulthood, his study does not clarify which transitions are important specifically during adolescence. His list included a number of events that would likely occur beyond the period of adolescence for the

majority of individuals, such as purchasing a house. In addition, he included some items that might not occur at all for some individuals, such as avoiding becoming drunk and having no more than one sexual partner. The emphasis in Arnett's study is clearly on the attainment of adult status, as opposed to the experience of developmental markers in adolescence. In fact, he proposes the term, "emerging adulthood" (p. 312), for the period between the end of adolescence and the attainment of full adult status, during which many of his transitional items may be more applicable. Nevertheless, this study is significant in that transition items are considered within the context of a developmental model rather than examining such events in isolation.

Newcomb (1996) examined the ages at which 30 adult activities were begun, such as starting to drive and having sex for the first time, as part of his theory about the impact of the timing of transitions. In his study, transition items were selected "based on the types of behaviours and activities that characterize the shift from adolescence into adulthood and reflected several domains including drug use, financial autonomy, separation from parents and independent living, establishment of intimate relationships, puberty, and deviant activities" (p. 481). Several of these items were examined in the current research. However, some items included in Newcomb's study were not included in the current research because it is not clear how they constitute adolescent transitions. First, some of Newcomb's items are not experienced by the majority of adolescents. For example, trying cocaine was included as a transition, although data indicates that the vast majority of American adolescents do not try this drug (Pergamit, Huang, & Lane, 2001).

Second, other items are questionable as transitions because it is not clear that they would constitute important developmental challenges, such as becoming fashion conscious. Therefore, while Newcomb's study makes the valuable contribution of examining the age of occurrence of various events during adolescence, it also highlights the need for a clear and detailed definition of what constitutes an adolescent transition.

Transitions According to a Taxonomic Approach. Another method used to decide which transitions are important has been to create taxonomies of transitions, in which adolescent events and milestones are selected and categorized according to the types of developmental task they represent. This approach is exemplified by Dekovic, Noom, and Meeus (1997), who created an assessment tool for adolescent transitions called the Developmental Timetables for Adolescence (DTA). In order to select the items to be included in their measure, the authors identified adolescent developmental tasks that were classified as personal, relational or socioinstitutional. Items were then further subcategorized; for example, under the relational category were the subcategories of "establishing a stable relationship with friends" and "establishing an intimate relationship"(p. 259). Other authors have classified transitions in terms of biological, developmental, and socially constructed tasks (e.g., Bynner, 2000), or affiliation, achievement, and identity transitions (Schulenberg et al., 1997).

This approach to selecting events that are expected to be important during adolescent development is subject to similar criticism as that of Newcomb's (1996), in that there is no clear definition of what constitutes a developmental task. Neither

Dekovic and colleagues (1997), nor Newcomb, describes the criteria for inclusion or exclusion of items, nor are transitions distinguished from general life events in most studies (Graber & Brooks-Gunn, 1996). The taxonomic approach to selecting transitions has the added pitfall that different taxonomies may yield different transition items. The result is that there is little consensus, beyond the often-studied transitions of puberty, sexual initiation, and school milestones, about which events are to be considered adolescent transitions.

A Working Definition of Adolescent Transitions. For the purposes of the current research, specific criteria were drawn from the literature and refined in order to delineate what is considered an adolescent transition and how transitions differ from life events. First, transitions are defined as normal and expectable events (Neugarten, 1979) that are experienced by most individuals (Graber & Brooks-Gunn, 1996) during adolescence. Second, transitions are developmental challenges that require reorganization of function or behaviour (Graber & Brooks-Gunn, 1996). These developmental challenges can be thought of as the many "firsts" (Siegel & Shaughnessy, 1995) or milestones that mark the emergence of adulthood in that they represent a discontinuity (Schulenberg, Maggs & Hurrelman, 1997) with a previous role or behaviour.

The third criterion for defining developmental transitions is that, unlike the occurrence of more general life events, there are expectations about the timing of transitions (Newcomb, 1996). Research indicates that individuals have expectations about when transitions should occur and what it means to be "on-" or "off-time" in the

occurrence of particular transitions (Arnett & Taber, 1994; Dekovic et al., 1997). Moreover, numerous studies have demonstrated that there are psychosocial consequences to experiencing transitions early or late compared to the social norm, as is reviewed in detail below.

The final way in which transitions can be distinguished from life events is that transitions represent a progression in development. In theory, each successive transition in adolescence adds to the qualities that make up the person (Arnett, 1998), and therefore such events are expected to follow a typical sequence. The extent to which sequences of transitions occur in adolescence, and are thereby normative, has not been tested. However, research has demonstrated that older adolescents have assumptions about the order in which certain transitional markers of adulthood should occur, and that they later tend to follow these normative sequences as young adults (Thiessen & Looker, 1999). The order of transitions is also thought to have a substantial impact on outcomes, including the expectation that disruptions to normative sequences may occur more frequently for "at-risk" youth (Krohn, Lizotte, & Perez, 1997). However, these assumptions have not been tested in adolescents.

In sum, for the purposes of the current research, adolescent transitions are defined and distinguished from general life events in that 1) their occurrence is normative and expected during adolescence, 2) they are the "firsts," or developmental challenges, to which adolescents must adapt as they progress toward adulthood, 3) there are expectations about the timing of transitions and psychosocial consequences to being "off-

time," and 4) transitions are expected to occur according to developmental sequences, and their order will affect outcome.

Adolescents' Experiences of Transitions

One major goal of the current research was to document how transitions are experienced by adolescents. Numerous studies have assessed the impact of transitions on functioning, but the data on how adolescents actually experience such events are scant. This may be because research in this area has generally focused on the problematic aspects of this life phase (Furstenberg, 2000), with little emphasis on adolescents' perspectives on developmental experiences.

One exception to this is in the investigation of academic milestones, where several studies have examined how school transitions are experienced by adolescents (e.g., Berndt & Mekos, 1995; Causey & Dubow, 1993; Newman, Lohman, Newman et al., 2000). For example, Berndt and Mekos examined early adolescents' perceptions of the transition to junior high school, and found that this event was generally perceived as more desirable than stressful. The importance of taking into account adolescents' impressions of transitions was highlighted in a study by Causey and Dubow, who found that school perceptions following the transition to junior high school were linked to self-concept, grades, absenteeism, and school anxiety. While these investigations offer insights into adolescents' perceptions of transitions, they tend to use idiosyncratic methodologies involving either qualitative approaches (e.g., Berndt & Mekos, 1995) or measures of experience that are specific to only one transition (e.g., Causey & Dubow,

1993). This does not make for easy comparisons across events in adolescence, even within the academic domain. For instance, it is not known how the experience of starting high school compares to starting university in terms of which event is more stressful, predictable, or important to identity.

Current beliefs about adolescents' perceptions of transitions are generally based on assumptions. While developmental theorists believe that adolescent transitions are important to adult identity formation, it is not known whether adolescents themselves perceive transitions to be important to their identities, nor how such events compare in terms of their perceived importance. In addition, while the affective impact of transitions other than academic milestones has never been examined, assumptions are made about how positive or negative a transition is, based on changes in functioning following the event. For the vast majority of these transitions, however, it is not known whether they are actually experienced as negative or positive by adolescents, nor how such events compare in terms of affective impact. In the current research, the ATQ was developed in order to facilitate measurement of adolescents' impressions of various transitions, and to allow for comparisons of such experiences across events on several dimensions.

The Impact of Transitions on Functioning

In contrast to the paucity of research on the adolescent *experiences*, numerous studies have examined functioning across adolescence. Overall, longitudinal investigations have dispelled perceptions of adolescence as a time of "storm and stress" (Hall, 1904), indicating that most individuals generally fare well over this developmental

period (e.g., Coleman, 1974; Petersen, 1984; Simmons & Blyth, 1987; Stattin & Magnusson, 1990). For instance, one large-scale longitudinal study of adolescents found that self-esteem rose from early to late adolescence (O'Malley & Bachman, 1993).

In spite of a generally positive outcome, however, a minority of individuals is clearly at heightened risk for maladjustment and longer-term difficulties during this time. Evidence for this idea derives from data indicating that a number of major psychiatric disorders have a modal age of onset during adolescence or early adulthood (Burke et al., 1990), and that rates of serious delinquent offences peak following the start of high school (Moffit, 1993). In addition, the prevalence of substance use, including cigarettes, alcohol, marijuana, and cocaine, increases significantly across adolescence (e.g., Achenbach, Howell, Quay & Conners, 1991; Newcomb & Bentler, 1988; Pergamit et al., 2001). The need to address the emergence of such psychosocial problems is all the more salient given that rates of suicide and substance use among youth have increased in the last 50 years (Rutter & Smith, 1995).

The impact of transitions is emerging as a key element in predicting these dramatically different courses of development during adolescence. This is because transitions are increasingly conceptualized as turning points along the life trajectory (Graber & Brooks-Gunn, 1996), in that they can be experienced as life stressors or opportunities for growth (Aseltine & Gore, 1993; Galambos & Leadbeater, 2000; Trickett & Buchanan, 1997). In this section, theories and related research about the impact of

transitions are reviewed in order to predict when these events may be associated with increased difficulties during adolescence.

The Stressful Change Hypothesis. The stressful change hypothesis (Caspi & Moffitt, 1991; Ge, Conger, & Elder, 1996; Simmons & Blyth, 1987), also called the perturbation model (Graber & Brooks-Gunn, 1996), states that transitions generally cause *short-term* difficulties, or perturbations in functioning. This hypothesis is based on the assumption that change, and the period of adjustment that follows, are inherently stressful. The theory predicts that a brief disruption in functioning will occur after a transition, following which individuals will adapt and soon resume their pre-transition levels of functioning. Distress is predicted to be highest during the period of greatest change. Feelings of competence are expected to decrease following the transition but soon return to their pre-transition level, as the skills needed to function in the new role are acquired (Stewart, 1982). The predicted pattern of decline and then resumption of self-evaluations following a transition has been demonstrated in a few transitions in adulthood, such as marriage, birth of a first child, and the transition from college to work (cf. Graber & Brooks-Gunn, 1996).

In adolescents, the stressful change hypothesis has been tested in accounting for the effects of puberty and school transitions on various domains of functioning. Findings from studies that have examined adolescents' response to puberty have generally failed to support the stressful change hypothesis, indicating that functioning is not adversely affected following pubertal changes (e.g., Caspi & Moffitt, 1991; Ge et al., 1996;

Simmons & Blyth, 1987) although support for this hypothesis was recently found for puberty in African American boys (Ge, Kim, Brody, et al., 2003). Some support for this hypothesis has also been documented in accounting for the effects of school transitions. Simmons and Blyth found that alienation, taken as a measure of stress, is higher immediately after school transitions and soon returns to pre-transition levels. However, the same study also found negative effects of starting junior high school on girls' self-esteem that persisted throughout the academic year, indicating that this transition may have a longer-term impact on some domains of functioning in some individuals.

The possibility that certain conditions may lead to an extension of the period of perturbation, resulting in longer-term deficits in functioning, has not been directly tested to my knowledge. The stressful change hypothesis does not predict which individuals will be at risk for difficulties over the longer term following a transition. For predictions about individual differences associated with different levels of risk, two theories related to the timing of transitions are considered in turn: the multiple transition and gradual consolidation hypotheses.

The Multiple Transition Hypothesis. The impact of transitions on functioning has traditionally been studied in isolation of other developmental events that take place during adolescence. However, the importance of considering the context in which transitions occur has increasingly been emphasized (e.g., Galambos & Leadbeater, 2000; Graber & Brooks-Gunn, 1996). The pacing of transitions, that is, whether they occur simultaneously, or in a more evenly spaced manner with time to adjust in between, is one

contextual factor that may predict difficulties in adapting to change (Coleman, 1974; Simmons, 1987). It is believed that the risk of experiencing more than one transition at a time has to do with a reduction in the number of areas in which adolescents are able to function comfortably, which in turn overwhelms the capacity to cope (Simmons, 1987; Simmons, Burgeson, Carelton-Ford, & Blyth, 1987). Based on this model, the multiple transition hypothesis predicts that adolescents who simultaneously experience more than one transition will have greater difficulty (Ge, Conger & Elder, 2001a).

Research models examining the impact of experiencing co-occurring life events generally consider "simultaneity" to include events that occur within a 6- to 12-month period of each other (Graber & Brooks-Gunn, 1996). Research supports the hypothesis that adolescents have more difficulty coping with multiple changes when these occur simultaneously (Compas, Ey, & Grant, 1993; Ge, Conger, & Elder, 2001b; Rutter, 1991; Simmons, 1987; Simmons & Blyth, 1987). Experiencing a confluence of novel or stressful events is related to increased rates of depressive symptoms in adolescence (e.g., Brooks-Gunn & Warren, 1989; Compas et al., 1986; Ge et al., 2001b; Petersen, Sarigiani, & Kennedy, 1991). Studies investigating the spacing of transitions per se have generally examined the occurrence of puberty with one or two other transition, including academic milestones and/or onset of dating. The co-occurrence of such transitions was found to be related to declines in functioning that included lowered self-esteem, poorer academic functioning, higher depressive affect and increases in unhealthy eating behaviours (Cauffman & Steinberg, 1996; Petersen et al., 1991; Simmons, Burgeson, Carlton-Ford,

& Blyth, 1987; Simmons, 1987; Simmons & Blyth, 1987; Smolack, Levine & Gralen, 1993).

Studies examining the impact of simultaneously occurring transitions have all included puberty as one of the transitions of interest. Because the onset of puberty generally occurs early in adolescence, the multiple transition hypothesis has been tested exclusively in young adolescent populations, with one exception. The exception to this was a study by Koenig and Gladstone (1998) that examined the co-occurrence of the later stages of pubertal development and the transition to high school or university. The authors of this study found that dysphoria was highest in girls for whom late-stage pubertal changes occurred concurrently with either academic milestone. This study may indicate that the multiple transition hypothesis holds true in middle and older adolescents, although experiencing the later stages of pubertal development does not clearly conform to the definition of an adolescent transitions being used in the current study.

Considered in combination with the stressful change hypothesis, the multiple transition hypothesis would predict that adolescents who experience transitions concurrently would show longer-term perturbation in functioning than those who experience such transitions consecutively. Simmons and Blyth (1987) observed this effect in young adolescent girls, who showed a drop in self-esteem after the transition to junior high school that persisted beyond the end of the academic year. The same drop was not evident in boys, nor in adolescents who were in a different school system and did not experience an academic transition until the year they switched into senior high school

in Grade 9. The authors reasoned that for many girls, but not boys, the transition to junior high school coincides with puberty, and that it is this co-occurrence of transitions that increases vulnerability and predicts longer-term impact on functioning. Therefore, adolescents who experience more than one transition at a time may be at risk for prolonged difficulties.

In sum, the simultaneous occurrence of pubertal changes with either onset of dating and/or academic milestones is associated with functional difficulties in adolescence and also moderates the impact of the transition to junior high school over time in girls. All existing studies of co-occurring transitions have included puberty as one of the transitions of interest. For this reason, it is not known whether the multiple transition hypothesis holds true for the co-occurrence of other transitions, or whether developmental milestones other than puberty will moderate the impact of transitions over time when these occur simultaneously. In addition, there has not been a clear test of this hypothesis in middle or older adolescents, and it is not known whether co-occurring transitions will have the same impact in these populations as has been observed in younger adolescents.

The Gradual Consolidation Hypothesis. The other theory that may predict which adolescents will experience greater difficulty following a transition is the gradual consolidation hypothesis. Alsaker and Olweus (1992) examined stability coefficients in the area of adolescent self-esteem and found these to be lower for younger adolescents than for older ones. Based on these findings, they proposed that an individual's self-

concept might consolidate with age, which they called the gradual consolidation hypothesis. One other study examined this effect and found that young adolescent girls' self-perceptions became more stable with age over the four years of the study, although the same effect was not observed in boys (Lintunen et al., 1995).

The observation of the gradual consolidation effect led Alsaker and Olweus (1992) to speculate that stressors may have a differential impact depending on the degree to which self-perceptions are consolidated. That is, they predicted that experiences that occur later in adolescence, when self-concept is more consolidated, would have less of an impact than those that occur earlier. Although they qualify this prediction by stating that particular domains may be more or less consolidated throughout adolescence, this hypothesis can be applied to predictions about effects of transitions, with the expectation of greater impact on younger individuals. Indirect support for this prediction may be found in an earlier study by Brooks-Gunn (1991), which demonstrated that certain life events, such as negative school events, predicted depression in younger (12.5 to 13.5 years) but not older (13.5 to 14.5 years) adolescent girls.

The mechanism behind the gradual consolidation may in fact be related to the multiple transition hypothesis. That is, it may be that higher numbers of concurrent changes in early versus later adolescence explains the lack of consolidation of self-concept in the younger group. A higher number of stressful life events has been shown to occur during early adolescence as compared with later adolescence or childhood (Graber & Brooks-Gunn, 1996), with the greatest number of events occurring at around age 14

(Brooks-Gunn, 1991; Ge, Lorenz, Conger, et al., 1994). Therefore, it may be that the instability in younger adolescents' self-perceptions is due to a higher number of co-occurring stressors as opposed to consolidation that results from some sort of maturational process. Although speculation about the gradual consolidation hypothesis is compelling, the mechanism behind this effect remains to be tested, along with the associated prediction that transitions will have a greater impact on younger versus older adolescents.

To summarize, three theories about the impact of transitions may contribute to predicting which adolescents are at greater risk for difficulties following a transition. From the *stressful change hypothesis* comes the prediction that transitions are experienced as temporarily stressful, leading to an increase in distress and declines in feelings of competence immediately after a transition. This hypothesis also predicts that most adolescents will return to their pre-transition levels of functioning following the brief period of perturbation. Adolescents may have more difficulty adjusting following a transition if they experience more than one transition simultaneously, according to the *multiple transition hypothesis*. That is, the co-occurrence of transitions is expected to result in an extension of the period of perturbation after a given transition. This effect may also account for the predictions based on the *gradual consolidation hypothesis*, which proposes that an individual's self-concept consolidates with age. Based on this theory, it is expected that transitions will have a greater impact on younger adolescents, whose self-concepts may be less consolidated, compared to older ones. Alternatively, it

may be that higher numbers of transitions occur earlier in adolescence, thereby explaining the expectation of increased impact in younger versus older individuals.

The Timing of Transitions

Timing has long been identified as a critical factor that determines whether normative transitions produce difficulties (e.g., Jessor & Jessor, 1975; Jones & Bayley, 1950; Neugarten, 1979; Peskin, 1967, 1973). A number of hypotheses now exist about the impact of timing of transitions, and models have been developed to test the effects of timing on adolescent adjustment as well as on later adult functioning. Two related theories make predictions about the timing of transitions with regards to the adolescent's social group: the off-time and early timing hypotheses. Underlying both these models is the assumption that being out-of-synch with ones' peers makes the experience of an adolescent transition more stressful. Research that has tested these timing effects is reviewed in this section, as well as evidence for and against the two timing hypotheses. This section concludes with some of the methodological issues that arise when examining the impact of timing on transitions, and how the current research has attempted to address these.

The Off-Time Hypothesis. Adolescence is a time when social comparison and wanting to fit in are heightened, leaving "outliers" in the timing of transitions potentially more vulnerable (Simmons & Blyth, 1987; Caspi & Moffitt, 1991). Adolescents who experience transitions at around the same time as their peers may find it easier to negotiate such changes because they have the support of others going through the same

experience. Graber and Brooks-Gunn (1996) refer to this timing effect as the social timing hypothesis, emphasizing the meaning of the transition in a social context. Others have referred to it as the deviance (e.g., Ge et al., 2001a) or off-time (e.g., Caspi & Moffitt, 1991) hypothesis, which similarly predict that transitions lead to increased difficulties when they occur out-of-synch with the majority. In the current research, the term "off-time hypothesis" is used to refer to this effect in order to emphasise that both the early and late occurrence of transitions are expected to produce increased difficulties.

The Early Timing Hypothesis. The early timing hypothesis predicts that only those transitions that are experienced *prior* to the social norm will have worse outcome. Peskin (1973) proposed that those adolescents who matured early would experience increased emotional and behavioural problems. Jessor and Jessor (1975) extended this hypothesis to other transitions in adolescence, such as initial sexual intercourse, which they believed are "are normatively age-graded" (p.474), with the prediction that engaging in behaviours earlier than expected goes against the norm. As with the off-time hypothesis, social comparison is a factor in the expectation of a negative outcome for those that experience transitions early. Early timing is thought to be more problematic than on time or late timing, however, because adolescents who are among the first in their group to experience a given transition lack the benefit of commonality of experience. According to this theory, going through a transition with one's peers, or even having seen most of one's peers experience the change, as in the case of those experiencing the transition late, would allow for more informed expectations about the transition and

thereby better adjustment. Being early in experiencing a change also places the individual in the role of a forerunner, the novelty of which would be expected to induce some level of anxiety (Silbereisen & Kracke, 1997). Finally, this theory adds the explanatory component that adolescents who experience transitions early may lack the maturity needed to negotiate these.

The early timing hypothesis has primarily been applied to the transition of puberty (e.g., Andersson & Magnusson, 1990; Angold, Costello, & Worthman, 1998; Caspi & Moffitt, 1991; Duncan, Ritter, Dornbusch, Gross, & Carlsmith, 1985; Ge et al., 1996, 2001a, 2001b; Graber, Lewinson, Seeley, & Brooks-Gunn, 1997; Graber, Petersen, & Brooks-Gunn, 1996; Jones & Bayley, 1950; Peskin, 1973; Silbereisen & Kracke, 1997; Stattin & Magnusson, 1990; Tobin-Richards, Boxer, & Petersen, 1983). Caspi and Moffitt have proposed a number of reasons why early timing might have a negative impact in relation to physical maturation. First, adolescents who mature earlier may be perceived as being more mature than they really are, and be treated accordingly before they are ready. In addition, they may be more susceptible to the influences of older peers as a result of the increasing distance from parents that comes after puberty. Moreover, Ge and colleagues (2001a) make the case that:

> Early-maturers have less time to absorb, integrate, and consolidate the cognitive and social adaptive skills necessary for successful transition into the next stage of adolescence. Faced too soon with demanding biological

and social transitions, these early-maturers are more vulnerable to their stress-promoting influence. (p.65).

Comparisons of the Two Timing Hypotheses. Most of the studies that have examined either the off-time or the early timing hypotheses, or both, have focused on the effects of pubertal timing. Results of studies comparing these models in accounting for the effects of puberty have favoured the early timing over the off-time hypothesis in girls (e.g., Caspi & Moffitt, 1991; Ge et al., 1996, 2001a; Silbereisen & Kracke, 1997). Caspi and Moffitt found that early, and not late, onset of menarche contributed to prediction of behavioural problems and adjustment difficulties in girls. Similarly, Ge and her colleagues (1996) found that early maturing girls showed higher levels of distress several years after puberty compared with their on-time or late-maturing female peers. Graber and her colleagues (1997) have shown that early pubertal timing is related to diagnosable disorders in girls. Findings from a number of other studies are summarized by Graber and Brooks-Gunn (1996), who conclude that early-maturing girls fare worse along several dimensions than other adolescents, including girls who experience puberty late and boys.

Timing of maturation in males has been examined less frequently, with studies supporting either the early timing or off-time hypotheses, both, or neither, depending on the outcome measure used (Graber et al., 1996; Silbereisen & Kracke, 1997). A commonly held belief is that boys benefit from maturing before their peers and that male late-maturers are at a disadvantage. Research offers mixed support for this view, which

to some extent is in keeping with the off-time hypothesis. Early studies indicated an advantage for males who had gone through puberty before their peers in social domains and/or self-concept (e.g., Jones & Bayley, 1950; Tobin-Richards et al., 1983; Simmons & Blythe, 1987). In addition, there is evidence that late-maturers are more likely to engage in excessive drinking (e.g., Andersson & Magnusson, 1990; Silbereisen & Kracke, 1997). Research that has examined the impact of pubertal timing on multiple domains of functioning found that early timing might also be problematic for boys, in that early-maturing boys showed more deviant behaviours (e.g., Duncan et al., 1985; Silbereisen & Kracke, 1997) and more adjustment problems three years after puberty (Ge et al., 2001a). Overall, "the results do not support a simple formula that would link the two models with different types of adjustment problems" (Silbereisen & Kracke, p.105), and evidence for either of the pubertal timing hypotheses in boys has been inconsistent (Graber et al., 1996).

The effects of timing of transitions other than puberty have been addressed far less frequently in the literature, with the exception of sexual initiation. Magnusson (2001) reviewed the research on the timing effects of first sexual intercourse. He found that early sexual initiation has been shown to correlate with a number of difficulties, including delinquency, drug and alcohol use, low school motivation, dropping out of school, truancy, disobeying parental rules, running away from home, pregnancy, and parental conflict (cf. Magnusson for original references). Early onset of sexual behaviour has also been linked to higher rates of depressive symptoms and lower functioning in

multiple psychosocial domains (Tubman, Windle, & Windle, 1996). However, a longitudinal study by Bingham and Crockett (1996) found that psychological adjustment was not related to timing of first intercourse, and that when pre-intercourse levels of psychosocial development were controlled for, there was no relation between early intercourse and negative outcome. Moreover, Bingham and Crockett also found that girls who experienced sexual intercourse later than the norm had poorer peer relations than those with earlier onset. Therefore, while research on the timing of first sexual intercourse appears to favour the early timing hypothesis, some problems associated with early the onset of sexual behaviour likely existed before the transition, and there is some evidence that late timing may also be associated with some difficulties.

One variation of the early timing hypothesis extends the prediction of negative outcome to a number of adolescent transitions. Pseudomaturity theory (Newcomb, 1996) predicts that the early occurrence of adolescent transitions, including prosocial or culturally valued transitions (e.g., starting to earn money and first having a bank account) is associated with problems in later adult functioning. Newcomb (1996) described the effects of pseudomaturity in this way:

> The younger age at which adult transition events are initiated during adolescence, the more difficulty will be experienced with adult roles both specific to the life area of transition and also may generalize to impair various types of adult role functioning. The central assumption of this theory is that premature engagement in adult activities and responsibilities

> during adolescence interferes with the acquisition of psychosocial skills necessary for success in these adult roles; skills that are typically learned during the critical period of adolescence. (p. 477).

Newcomb's (1996) research supports the predictions of pseudomaturity theory. In his study, he examined the ages of 30 transitions in a sample of young adults in their mid- to late twenties, and then obtained information about their adulthood functioning four years later, to be used in outcome analyses. Examination of underlying factor structures for the transitions indicated that, with the exception of one transition (puberty), the ages of the transitions loaded onto five factors reflecting age of: drug initiation, financial autonomy, independent living, intimacy involvement, and deviant activities. The early occurrence of transitions as reflected in these factors predicted a number of adverse consequences in adulthood. For example, earlier drug initiation predicted adult drug abuse. Negative consequences were also generally noted for those individuals who experienced transitions earlier overall.

Although Newcomb's (1996) results appear to favour the early timing hypothesis, the off-time hypothesis cannot be discounted on the basis of his study. His finding that the later occurrence of transitions in both sexes was associated with a number of benefits in adulthood, such as lower drug abuse and less anxiety, are questionable as a result of the methodology he used: for individuals who indicated that they had never experienced a given transition, their *current age at the time of testing* was used in the place of missing data. While this procedure allowed for a greater number of participants to be included in

the study, it also meant that individuals who had never experienced the particular transition, or who omitted to disclose the age of a particular transition, were included as "late" on that event. The percentage of individuals for whom this is the case was not reported in the study. This precludes conclusions about the impact of the late occurrence of any transition, given that an undisclosed proportion of participants in the late group for a particular transition had never experienced the event at all.

In summary, while evidence favours the early timing over the off-time hypothesis in puberty in girls, this effect has not been found consistently in boys, and the two hypotheses have not adequately been compared in other transitions in both sexes. With some exceptions, studies on the timing effects of transitions have not been designed to examine whether late timing of transitions is associated with difficulties, although some studies have found this to be the case for puberty and sexual intercourse. The current research was designed to test the two competing conceptualizations about the impact of timing of a number of transitions in adolescence, including puberty and sexual initiation.

Methodological Issues in Examining Timing of Transitions. Several methodological issues in assessing the impact of timing of transitions can affect the results of such investigations, and may explain why findings related to timing effects have not been consistent across studies. Two such methodological considerations that have been emphasized by Graber and her colleagues (Graber & Brooks-Gunn, 1996; Graber et al., 1996) include the choice of outcome measures and the methodology used for making timing classifications. While these issues have been raised and are reviewed

in the context of pubertal timing research, they also apply more broadly to the timing of other transitions, and were taken into consideration in the current research.

The importance of the choice of outcome measures in assessing the effects of timing is highlighted in one example by a study that failed to find timing effects in the link between puberty and clinical depression in girls (Angold et al., 1998). In this study, the authors were interested in explaining higher depression rates in girls that are known to emerge in adolescence. They found that the timing of puberty had no effect on depression rates, while pubertal status in terms of Tanner Stage *was* predictive of the increase in depression in girls. Given results of the studies reviewed earlier demonstrating pubertal timing effects, it may be that early-maturing girls showed deficits on other dimensions, even though these did not predict pathology in the study by Angold and his colleagues. Ge and her colleagues (2001a) present a similar discussion of disparate findings for timing effects in males depending on the outcome measure used.

The disparity in these and other research findings underscores the importance of choosing outcome measures to assess the impact of timing on a number of dimensions. One option in assessing the impact of transitions would be to examine whether timing affects how adolescents actually experience transitions. Comparing adolescents who are early, on-time or late on a given transition in terms of their impressions of the event could clarify whether being off-time is related to difficulties. Both this novel way of assessing impact, as well as traditional indicators of functioning, were used as outcome measures to assess the effects of timing in the current research.

Another major methodological issue is how timing classifications are made. That is, it is important to consider how adolescents are grouped into categories of early, on-time, or late on a given transition. Studies on the impact of timing in comparison to the adolescent's social referent have generally used a nomothetic approach to classification. With this method, also referred to as the objective approach, adolescents are often classified based on their relative position in the distribution of a sample, or based on an arbitrary cut-off point (Graber et al., 1996). An example of the first would be to categorize the top and bottom 20% of the sample distribution as "off-time" on age at puberty (e.g., Simmons & Blyth, 1987; Caspi & Moffitt, 1991; Ge et al., 2001a). Examples of the use of an arbitrary cut-off point would be to classify boys who had initiated sexual intercourse prior to grade 8 (Capaldi, Crosby, & Stoolmiller, 1996) or prior to age 16 (Brooks-Gunn & Paikoff, 1997) as "early" on this transitions. From these few examples, it is apparent that variations in the population studied or choice of cut-off points for making timing classifications could lead to widely varying results. There has been little consistency in the use of either procedure for categorizing timing on transitions (with the possible exception of puberty, see review by Graber et al., 1996), which in turn may account for inconsistencies in findings across studies.

The other fundamental problem with the use of an objective methodology in making timing classifications is that adolescents' own perceptions of their timing are not taken into account. Some adolescents may not be aware of their timing relative to peers on transitions (Duncan et al., 1985), particularly on events that do not involve outward

signs of physical or role changes. Moreover, some adolescents may associate with younger or older peers, resulting in a social referent that is different from what researchers would suppose. This could arise by the individual's choice to associate with different-aged peers, or by circumstance, such as having to repeat or skip a grade in school. With the nomothetic approach to timing classifications, adolescents' self-perceptions of timing are not taken into consideration.

An idiographic approach to studying the impact of timing, that is, using the adolescents' self-perception of timing of transitions relative to their peers, has been used in a few studies on puberty (e.g., Dubas, Graber, & Petersen, 1991; Petersen, Graber, & Sullivan, 1990, cited in Graber et al, 1996; Silbereisen & Kracke, 1997). Such studies indicate that self-classifications reflect real differences in pubertal timing, and that the use of idiographic and nomothetic approaches yield differing results. For example, Petersen and her colleagues found that when pubertal timing was perceived to be early, this was associated with a number of norm-breaking behaviors, while the use of an objective measure of timing was associated with fewer behaviors. For these reasons, the current research used an idiographic approach to classifying adolescents as early, on-time or late compared with their friends, in examining the impact of timing of a number of transitions.

Transitions Occur According to Developmental Sequences

Peskin (1967) originally proposed that developmental tasks in childhood are chronologically ordered and have to be completed successfully before the transition to

adolescence. Theories about adolescent development are often also founded on this supposition. For example, interpersonal relationships are thought to follow a developmental sequence from same sex-peers, to mixed boy-girl groups, followed by dating in groups and finally dyadic romantic relationships (Dunphy, 1963). Indirect evidence of the interrelatedness of transitions also exists, with studies documenting that the occurrence of some transitions will precipitate others (see the confluence hypothesis, below). Other research has demonstrated that adolescents and adults have expectations about when developmental transitions will occur (Collins, Laursen, Mortensen, Luebker, & Ferreira, 1997; Thiessen & Looker, 1999), and can specify what it means to be on- or off-time for a particular transition (Arnett & Taber, 1994). Inherent in this is the expectation that certain transitions will occur before others, and therefore that there is a typical sequence of transitions that most individuals will follow. While the prevalence of normative sequences have been examined with certain adult transitions (Rindfuss, Swicegood, & Rosenfeld, 1987; Thiessen & Looker, 1999), it is not known to what extent adolescent transitions follow expected developmental sequences. This section reviews evidence that suggests adolescent transitions occur in an interrelated manner and extends these findings to predictions about the impact of disruptions to typical sequences of transitions in adolescence.

The Confluence Hypothesis. One source of evidence that transitions occur in an interrelated manner comes from research on the confluence hypothesis, which states that the occurrence of certain transitional events is related to, or precipitates, the occurrence

of others. One early version of this hypothesis, referred to as problem behaviour theory, found patterns of covariation between initial sexual intercourse and alcohol use and delinquent behaviours (Jessor & Jessor, 1977). Other studies have found that adolescents who engage in one type of deviant behaviour are at increased risk of other socially nonconforming behaviours (e.g., Fergusson, Horwood, & Lynskey, 1994; Krohn et al., 1997; Stattin & Magnusson, 1990; Whitbeck, Conger, Simons, & Kao, 1993). Critics of this "deviance-proneness" model have disputed the implication that nonconforming behaviours have the same underlying cause (see Fergusson et al., 1994, for an overview of the problems with this assumption). Nonetheless, such studies provide evidence that the occurrence of certain transitions precipitate others, regardless of theories about their etiology (Tubman et al., 1996).

The early occurrence of certain transitions has also been found to precipitate others. For example, young adolescents who have had a romantic relationship report higher levels of drug use and delinquency compared with those without a romantic relationship (Brown, Dolcini & Leventhal, 1997). Newcomb (1996) found that transitions tended to cluster together and occur at similar or correlated times for a particular person. For example, the age of events related to intimacy involvement were correlated such that the earlier that dating began, the younger individuals were when they lost their virginity, and the earlier in life marriage occurred. Similarly, Stattin and Magnusson (1990) found that early maturation in girls was related to association with older males, which promoted early entry into sexual activity. These studies provide

further evidence that transitions occur in an interrelated manner and that certain transitions may precipitate others.

Prevalence of Sequences of Transitions. A normative sequence of six transitions in early adulthood has been detailed in a longitudinal study of Canadian youth (Thiessen & Looker, 1999), which examined 17-year-olds' expectations about the "appropriate" sequence of a list of transitions, and then documented the order in which these individuals actually experienced the transitions as young adults. Transitions were selected for the study on the basis of being markers of adulthood status, including marriage, having children, gaining full-time employment, leaving home and obtaining a university education. Results indicated that the majority of adolescents expected the transitions to occur according to the same sequence. Moreover, when participants were followed-up five years later, Thiessen and Looker found that the majority of participants had followed the expected sequence, or experienced those transitions within 12 months of each other. Their study also documented the percentages of youth who violated certain parts of the expected sequence. For example, 12% of their sample had children before marriage, violating the expected order for these two transitions. The impact of experiencing transitions out of the expected order was not addressed in this study.

Typical sequences of transitions during adolescence have not been detailed in the same manner, although general conclusions about the order of some transitions can be inferred from developmental research. The most commonly described sequence of transitions in adolescence is for changes in adolescent behaviour to follow biological

changes (e.g., Petersen & Taylor, 1980), such as first intercourse occurring after puberty. While this sequence of transitions in adolescence is intuitive, the extent to which other transitions follow particular sequences in adolescence has not previously been examined.

The current research documents the order of occurrence of transitions in adolescence to address a further question about the timing of transitions and adolescent vulnerability. If specific transitions are shown to follow a typical developmental succession for the majority of adolescents, the lack of a given transition within the sequence can be considered a disruption. Experiencing a transition out of order would be expected to predict increased difficulties, given the emphasis of developmental theorists on the successful completion of chronologically ordered tasks for healthy identity formation (e.g. Erikson, 1968). For example, Krohn and colleagues (1997) have proposed that disruptions to the normative order of transitions may occur more frequently for "at-risk" youth. The current research was designed to test the assumption that a disruption to the expected sequence of transitions in adolescents is associated with increased difficulties, compared to those who follow the expected developmental sequence.

The Two Studies

The current program of research investigated the experience and impact of developmental transitions, and how factors related to their timing affected adolescent outcomes. While previous studies on the timing of transitions have asked adults retrospectively about their experiences of various transitions, the current studies were

designed to examine this in participants who are still adolescents. Study 1 explored the impact of 10 adolescent transitions, and the effects of the timing and sequencing of these transitions in a cross-section of adolescents. Study 2 prospectively examined the experience and impact of two academic transitions in adolescence, along with the effects of simultaneously occurring transitions.

In Study 1, 10 transitions were examined in a cross-section of adolescents with the goal of identifying which transitions might be more problematic and therefore pose greater risk during adolescence. Items from the domains of intimate relationships, individuation, psychosexual transitions, substance use, and rejection/alienation were selected according to a working definition of adolescent transitions. The prevalence, ages of occurrence, and any gender differences in ages of occurrence of each of these transitions were documented. The impact of each transition was then examined in terms of the effect of occurrence versus non-occurrence of each transition on current functioning, as well as the adolescents' impressions of the transitions relative to one another.

A number of timing effects were also examined in Study 1. First, two competing timing conceptualisations, the early timing and off-time hypotheses, were tested with the aim of determining which hypothesis best accounted for the impact and experience of each of six transitions. In order to address some of the inconsistencies in the methodology and results of previous research, these hypotheses were tested using variations on the traditional methodology for examining timing effects. These variations

included the use of an idiographic approach to making timing classifications, and assessment of the impact of timing on adolescents' experiences of the transitions. In addition, the extent to which a subset of transitions occurs according to a particular sequence, and the impact of violating that sequence, if a typical sequence is shown to exist, were also investigated.

In Study 2, adolescents were followed for 10 months through an academic transition, either from junior high school to senior high school, or from senior high school to post-secondary education. As in other studies of school milestones, academic transitions were chosen because they are predictable events (Elias et al., 1985). This allowed for pre- and post-assessment of functioning and detailed exploration of the experience shortly after it occurred. The choice to follow adolescents through an academic milestone was also made because the effects of an additional element of timing of transitions, the co-occurrence of transitions in other domains, could be assessed. Multiple outcome measures were used at three time periods to determine changes from baseline after one month, and again after six months post-transition. A moderational model was used to test whether the number of co-occurring transitions interacted with change in functioning over time.

In summary, the two studies examined how a number of important adolescent transitions are experienced, and their impact on functioning. The goal of this research was to clarify how adolescents experience such events, and to investigate factors related to the timing of transitions, which may predict difficulties in functioning. To this end, the

impact of self-perceived timing relative to peers, sequencing and co-occurrence of transitions were examined in adolescents.

Chapter 2

Study 1: The Experience and Impact of Transitions in a Cross-Section of Adolescents

This study represents an investigation into the impact, timing and sequencing of transitions across adolescence. As previously noted, transitions have most often been studied individually, in isolation of other events taking place in adolescence. In the current study, 10 events were selected from the existing literature according to a working definition of what constitutes a transition in adolescence. Specifically, an attempt was made to select items that met the criteria of being normative and expected during adolescence and that represented the "firsts" to which individuals must adapt. Items that were selected included developmental challenges in the domains of intimate relationships, individuation, psychosexual transitions, substance use, and rejection/alienation.

The current study was conducted in three parts. Section 1 explored the prevalence of the 10 transitions and the ages at which these transitions occurred, as well as gender differences in the prevalence and average age of occurrence of transitions. This section also examined the impact of the occurrence of these transitions. Section 2 of this study focused on the effects of timing of six transitions. One goal for this section was to compare the early timing and off-time hypotheses for each transition, with the purpose of identifying which theory best predicted difficulties and differences in how the transitions were experienced. A second goal for this section was to address some of the methodological problems that have been identified in the timing-effects literature, which

may have led to past inconsistencies in research findings. In Section 3 of this study, the order of occurrence of three transitions was examined, and whether these events followed a typical sequence for the majority of participants. Adolescents were categorized according to whether they had followed the order of the majority or not. These groups were then compared to investigate whether experiencing a disrupted sequence predicted increased difficulties.

Section 1: The Occurrence and Impact of Transitions

The transition items selected for the current study included some that have previously been examined (e.g., puberty and sexual initiation), and others have been explored less frequently in the transition literature (e.g., first romantic relationship and feeling respected by peers). For this reason, the first objective in the current study was to document the prevalence of these transitions across adolescence, and gender differences in the ages of the occurrence of each of these transitions. Given that these events were selected on the basis of being normative during adolescence, it was hypothesised that the prevalence of each transition would increase with the age of participants (Hypothesis 1). It was further expected that each of the 10 transitions would have occurred in the majority of older participants (Hypothesis 2). With regards to gender differences, it was expected that puberty would occur earlier in girls than boys (Hypothesis 3), but no hypotheses were specified concerning gender differences in age of occurrence of the other nine transitions.

Although some of the transitions included in this study have previously been examined in depth, adolescents' impressions of these events have rarely been considered. The few studies that have examined how such events are experienced have tended to use idiosyncratic measures to do so, making it difficult to compare adolescents' impressions of different transitions. In the current study, the experience of transitions was conceptualized and measured along two dimensions. The first dimension was affective impact, which was a rating of how negative or positive the experience of the transition was. The second dimension of impact was a rating of importance to identity formation, for which adolescents were asked how important a given transition was "to who you are now." Adolescents who had experienced each of the 10 transitions rated their experiences along these two dimensions. This allowed for comparisons of importance and affective impact across the transitions, and between the sexes.

Because the experience of these transitions had not previously been examined, my hypotheses regarding the relative importance and affective impact of each transition were somewhat speculative. However, given the importance of intimate relationships and individuation to identity formation (e.g., Dyk & Adams, 1987, 1990; Paul & White, 1990; Waterman, 1983), it was expected that transitions in these two domains would be rated as both most positive and most important to identity development (Hypothesis 4). No specific hypotheses were made about how boys and girls would differ in their experiences of transitions.

In order to allow for comparisons between the well being of adolescents who had experienced a given transition versus those who had not, the third objective of this study was to examine how the occurrence of each transition was related to adolescents' current levels of distress. In order to do so, those adolescents who had experienced each transition were compared to those who had not. It was expected that adolescents who had experienced transitions that are not socially valued, including substance use and sexual initiation, as well as those who had experienced transitions in the domain of rejection/alienation, would show higher levels of current distress than those who had not (Hypothesis 5). In addition, it was predicted that adolescents who had *not* experienced transitions in the area of intimate relationships and individuation would show higher levels of current distress than those who had (Hypothesis 6). Finally, in keeping with the literature showing an association between the occurrence of puberty and depression (e.g., Angold, Costello, & Worthman, 1998) it was predicted that individuals who had experienced puberty would have higher levels of current distress than those who had not (Hypothesis 7).

Section 2: Effects of Timing

The second section of this study was designed to examine the impact of timing of a number of transitions, and in so doing, to address some of the methodological problems with the existing research in this area (Graber, Petersen, & Brooks-Gunn, 1996). Findings from studies that have examined the effects of timing of transitions compared to adolescents' social reference groups indicate that experiencing transitions earlier or later

than the norm can constitute a risk factor. However, the direction of timing effects documented in the literature has likely been influenced by the methodology employed in a given the study, resulting in inconsistencies in findings. The goal of this section was to compare the early timing and the off-time hypotheses for a number of adolescent transitions using two variations of the traditional methodology.

While research on timing effects has not yielded consistent results, support for both the early timing and the off-time hypotheses is found in the literature. The most common timing effect has been with the early occurrence of puberty in girls, which has been linked to a number of difficulties, including increases in distress (e.g., Ge, Conger, & Elder, 1996), behavioural problems (e.g., Caspi & Moffitt, 1991) and diagnosable disorders (Graber, Lewinsohn, Seeley, & Brooks-Gunn, 1997). Such findings have been taken as evidence for the early timing hypothesis, although this hypothesis has not always been supported, even in studies of puberty in girls (e.g., Angold, et al., 1998). A competing prediction is offered by the off-time hypothesis, which states that being out-of-synch with the majority in either direction, that is, being either early or late, will be problematic. Support for the off-time hypothesis has been found in studies indicating that experiencing transitions either early or late can be problematic, including off-time puberty in boys (e.g., Andersson & Magnusson, 1990) and girls' initiation of sexual intercourse out-of-synch with their peers (e.g., Bingham & Crockett, 1996). However, as with the early timing hypothesis, off-time effects have not been found consistently in the literature.

In addition to inconsistencies in support for either of these timing effects, the two competing hypotheses have not adequately been compared in transitions other than puberty. One study indicated support for the early timing hypothesis with the finding that the early occurrence of adolescent transitions, including prosocial transitions, predicted later difficulties in adult functioning (Newcomb, 1996). However, this study was not designed to test effects of late occurrence of the same transitions, precluding a true test of the off-time hypothesis. For this reason, the timing effects of six adolescent transitions were examined in the current study, with the goal of determining which hypothesis best predicted difficulties in adolescents for each of the transitions.

One way of understanding inconsistencies in findings for either of these timing hypotheses across transition studies was to examine the methodology used in such research. In particular, the current study addressed the manner in which timing classifications are made and the kind of outcome measures used. First, the decision was made not to use the traditional "objective" methodology to make timing categorizations. This approach involves assigning individuals to a timing group based on their position in the sample distribution or according to an arbitrary cut-off point. For theoretical reasons outlined in the previous chapter, the validity of this methodology for making timing categorizations was called into question. Moreover, the studies that have compared self-perceptions of timing to objective classifications (e.g., Petersen, Graber, & Sullivan, 1990, cited in Graber, Petersen, & Brooks-Gunn, 1996; Silbereisen & Kracke, 1997) have demonstrated that results differ based on which methodology is employed. Results of

these studies, which have been restricted to examining the timing effects of puberty, provide evidence that adolescents' own perceptions of their pubertal timing are associated with more difficulties (Petersen et al., 1990, cited in Graber et al., 1996) or at least with different outcomes (Silbereisen & Kracke, 1997) than timing classifications made according to the traditional objective approach.

The validity of self-perceptions of timing for classifying adolescents as early, on-time or late on transitions other than puberty has not previously been explored, and was a goal of the current study. Specifically, it was predicted that perceived timing on each of the six transitions examined in the current study would reflect real differences in the reported ages of occurrence of those transitions (Hypothesis 8). Another test of the validity of self-categorizations would be if more adolescents categorised themselves as "on-time" than as either "early" or "late," which was the prediction (Hypothesis 9). Finally, in keeping with the argument that an idiographic approach to timing is more valid because some adolescents might not know where they fell relative to their peers on particular transitions, it was predicted that a significant proportion of adolescents would indicate that they were not certain about their timing relative to their peers on each of these transitions (Hypothesis 10).

Another methodological variation of the current study was to examine the impact of timing on adolescents' experiences of transitions. To assess the experience of transitions addresses a fundamental issue in the timing research, which is that transitions are assumed to be more or less stressful, difficult, or disruptive, based on functional

changes that come about after the event. However, without knowing *how* adolescents experience transitions, assumptions about the actual impact of transitions remain assumptions. Research on timing effects of early puberty in girls illustrates this issue: based on the documentation of negative outcomes in girls who experience early puberty, it is assumed that early timing is experienced as more stressful (e.g., Caspi & Moffitt, 1991). However, whether adolescents actually experience puberty or any transition differently based on timing has not been examined.

The current study examined the timing effects of six transitions on adolescents' impressions of these events, with the goal of identifying whether early or late timing predicted a differential impact for each transition examined. Timing of first love, first time getting drunk, first time trying drugs, and first romantic relationship, in addition to puberty and first intercourse, were each examined. Both hypotheses were compared in each transition, with the prediction that the early timing and off-timing hypotheses would differentially account for timing effects, depending on the transition (Hypothesis 11). Because timing effects had not been examined in four of the six transitions included in this study, and the existing research has not shown consistent timing effects in those transitions that *have* been examined, no specific predictions were made about which transitions would show timing effects, nor about which timing hypothesis would best account for those that did.

Section Three: Sequencing of Transitions

The final section of the current study was designed to examine the extent to which transitions occur according to a specific sequence and the impact of experiencing a disruption to the typical sequence. Research has shown that adolescents and adults have expectations about the normative order of adult transitions (Arnett & Taber, 1994; Dekovic, Noom & Meeus, 1997; Thiessen & Looker, 1999). Thiessen and Looker found that the majority of older-adolescent participants surveyed expected a number of adult transitions to occur in a particular order, and that these same participants later tended to follow the expected sequence themselves as young adults. However, the extent to which specific transitions in adolescence follow a particular sequence has never been examined, nor whether there are negative implications to experiencing transitions out of the typical sequence, should one be shown to exist. The third section of the current study addressed both these issues in order to investigate whether adolescents who violated the typical order of transitions experienced increased difficulties.

The sequencing of three transitions was examined to determine whether they were experienced in a given order by the majority of adolescents and could therefore be considered a "typical" sequence. The three transitions that were examined were selected because they fit an a priori expectation about their order of occurrence (although this order remained to be confirmed in the current study), and included: first romantic relationship, first love, and first sexual intercourse. It was expected that the majority of

participants would experience a romantic relationship, followed by first love, and then followed by first intercourse (Hypothesis 12).

Adolescents who had experienced first intercourse or at least two of the three transitions were categorized according to whether they had followed the sequence (typical sequence group) or had experienced transitions out of sequence (disrupted sequence group). The two groups were then compared to examine whether experiencing disruptions in the typical sequence had a detrimental impact on adolescents' experience of the transitions in question, or predicted differences in current distress. It was expected that individuals who experienced transitions out of sequence would report higher levels of distress and a more negative experience of first intercourse, than those who experienced the transitions in the typical order (Hypothesis 13).

Summary of Objectives and Hypotheses for Study 1

A number of predictions were specified throughout this section. When there was no supporting literature on which to base these predictions, some hypotheses were based on expectations while others based on explicit theory. All are referred to as hypotheses for the purpose of simplicity and are summarised here.

Objective 1: Document prevalence and gender differences in age of occurrence of each of 10 adolescent transitions. Hypothesis 1: Prevalence of transitions will increase with age of participants. Hypothesis 2: Each of the 10 transitions will have occurred in the majority of older adolescents. Hypothesis 3: A gender difference will be apparent in age of puberty, with girls reporting a significantly younger age at puberty than boys.

Objective 2: Document adolescents' experiences of the occurrence of the 10 adolescent transitions, and gender differences in these. Hypothesis 4: Transitions in the domains of intimate relationships and individuation will be rated as most important and most positive.

Objective 3: Examine whether the occurrence of each transition is related to adolescents' current levels of distress. Hypothesis 5: Adolescents who have experienced transitions that are not socially valued, including substance use and sexual initiation, as well as those who have experienced transitions in the domain of rejection/alienation, will show higher levels of current distress than those that have not experienced those transitions. Hypothesis 6: Adolescents who have *not* experienced socially valued transitions in the domains of intimate relationships and individuation will show higher levels of current distress than those who have. Hypothesis 7: Adolescents who have experienced puberty will have higher levels of current distress than those who have not.

Objective 4: Assess validity of using an idiographic approach to making timing classifications. Hypothesis 8: Perceived timing (idiographic approach) on each of six transitions will reflect real differences in age of occurrence of the transitions. Hypothesis 9: A greater percentage of adolescents will categorize themselves as "on-time" than "early" or "late" on each transition. Hypothesis 10: A significant proportion of participants will be uncertain about their timing relative to their peers on each transition.

Objective 5: Compare early timing and off-time hypotheses in six transitions using an idiographic approach to making timing classifications. Hypothesis 11: The early

timing and off-time hypotheses will differentially account for timing effects in those transitions for which timing effects exist.

Objective 6: Determine whether three adolescent transitions (romantic relationship, love, and sexual intercourse) follow a typical sequence. Hypothesis 12: The majority of adolescents will experience a first romantic relationship, followed by first love, followed by first sexual intercourse.

Objective 7: Examine the impact of experiencing a transition out of sequence with the majority. Hypothesis 13: Compared with those who follow the typical sequence, individuals who experience first sexual intercourse out of sequence will show higher levels of distress, and this transition will have a greater negative impact for the disrupted group than for the typical group.

Method

Participants

Participants were students attending three junior high schools (Grades 7-9) and one senior high school (Grades 10-12) in 1998 in the Greater Halifax area in Nova Scotia, Canada. Schools were selected based on their participation in an ongoing longitudinal mental health study.

Adolescents were invited to participate in a mental health survey by means of a letter sent to parents of all students attending the schools. The letter described the nature of the study and explained how parents could contact the school and request that their

child or children not participate. Of the 2100 students that attended the schools, five parents requested that their child not participate in the study.

In order to be included in the current study, students had to have participated in the mental health survey, as well as have completed the Adolescent Transition Questionnaire (ATQ; Greaven & Santor, 1999, 2000; see Appendix A), which was included in the package of paper-and-pencil measures for the mental health survey. Six hundred and five students out of a possible 2095 participated in the mental health survey. Students who participated in the mental health survey were primarily Caucasian (24.3% did not answer the question about race; 5.6% indicated that they were not Caucasian; and the remainder, 70.0%, indicated that they were Caucasian). Of the 605 participants in the overall mental health study, 576 completed the ATQ. A further 23 participants who had completed the ATQ had to be excluded from the analyses[1], resulting in a sample of 553 participants. This represented 91.4% of the total number of participants in the mental health survey, but only 26.3% of the entire student population of the four schools.

Participants included in the current study ($N = 553$) ranged in age from 11 to 19 years, ($M = 14.37$ years, $SD = 2.04$ years) with 5 participants that did not report their ages. There was a higher proportion of female participants (322 females, 220 males, 11 did not indicate their sex). Males and females who participated did not differ in age, t

[1] Of the 23 participants who were excluded (4.0% of eligible sample), 20 did not follow directions correctly on the ATQ, such as repeatedly indicating that a transition had not occurred but still rating its impact. The remaining three participants were dropped due to inconsistencies in their responses. Specifically, one participant indicated that a transition had not occurred and then later indicated that the same transition was an important life decision and two other participants rated the age at which one transition occurred as being older than their current age. The group that was excluded did not differ significantly in age from the group that was retained, $t\ (567) = 1.42$, ns.

(536) = 1.46, ns. Participants predominantly attended junior high school (n = 373) as opposed to senior high school (n = 180).

Procedure

On the day of testing at each school, students were gathered in their respective school cafeteria, and the study was explained by research staff. Students were told that they would receive a coupon for a free MacDonald's Happy Meal in return for their participation. They were then given an opportunity to ask questions and raise concerns. Those who expressed interest in participating were then asked to read and sign consent forms, while those who chose not to participate returned to their classrooms.

Participants were allotted a 60-minute period to complete the paper-and-pencil measures for the survey. They were instructed not to communicate with each other during the completion of the measures. Participants were also assured of the confidentiality of their data, and were asked not write their names anywhere on the contents of the questionnaire package. Research staff was present to supervise completion of questionnaires and respond to questions.

Measures

Adolescent Transitions Questionnaire (ATQ). The ATQ (Greaven & Santor, 1999, 2000; Appendix A) was designed for the purpose of this study, in order to assess the occurrence of transitions, and for those transitions that had occurred, the age and

experience of their occurrence[2]. As noted earlier, the selection of items was based on the working definition of adolescent transitions. Based on the criteria of this definition, items were drawn from a review of the literature and were pilot tested with young adults in order to ensure that items were easily responded to, that the format could be understood, and to refine the wording of the items. Resulting items represented "firsts" in five domains, including substance use (drug use, getting drunk), intimate relationships (having a "real" boy/girlfriend, falling in love), individuation (feeling respected by peers, making a major life decision independently), rejection/alienation (getting dumped or having your heart broken, feeling no one could understand you) and psychosexual transitions (puberty and sexual intercourse). The ATQ included the following questions:

1) Demographic Information. Participants were asked to indicate their sex and current age (in years).

2) Occurrence and Age of Transitions. Participants were asked their age at the time when each of 10 transitions occurred. If a given event had not occurred, they were asked to checkmark a box to signal that they had not experienced the event, and move on

[2] In a small percentage of cases, participants indicated that a transition had not happened, but still rated the impact of the transition as though it *had* occurred. Participants who made this error in rating more than one transition were excluded from the study on the basis that they did not appear to understand or follow instructions on the ATQ (see previous footnote). In cases when a participant rated only one transition in this inconsistent manner, with the remainder of the transition items completed according to directions, the single inconsistency was taken to indicate a careless error rather than a failure to understand instructions. These participants were retained, but the age and ratings for the transition in question were coded as missing data. The total number of items re-coded in this manner was 10 transitions (each for different participants), representing approximately 0.2% of the total responses to transitions on the ATQ in the current study.

to the next item. The 10 transitions that were assessed with the ATQ[3] included the following: "I fell in love for the first time," "The first time I felt like people my age respected who I am," "I got dumped or my heart was broken for the first time," "I got drunk for the first time," "I lost my virginity," "I first realized I had 'hit puberty,'" "I had my first 'real' boyfriend/girlfriend," "I first tried marijuana or another street drug," "The first time I felt that no one could understand me," and "I made a major life decision on my own."[4]

3) Experience of Transitions: The experience of each transition was assessed along two dimensions, affective impact and importance, as previously described. Affective impact was assessed with the question: "What kind of an experience was this for you?" to which participants were asked to respond by circling one number on a Likert-type scale, from "0 = Negative" to "6 = Positive." The second rating assessed the importance of the transition to identity formation, with the question: "How important was this experience to who you are now?" Ratings were made on a similar Likert-type scale which ranged from "0 = Not Important" to "6 = Very Important."

4) Timing of Transitions: For six of the transitions that were assessed on the ATQ, participants were asked to indicate whether the event happened "before most of

[3] Two additional items on the ATQ asked whether the following events had happened: "There was a tragedy in my life which has changed who I am" and "My high school is a lot bigger than my junior high (or elementary if you didn't have junior high)," but these were not included in the current study. The first was excluded for theoretical reasons, that is, it did not fit the definition of an adolescent transition. The second was excluded due to problems with the wording of the item that led to a significant proportion of responses on the item indicating confusion and/or inconsistencies.

[4] A qualitative element was added to one of the transitions: those adolescents who indicated that they had made a major life decision on their own were asked on the ATQ to "briefly describe this decision" before they rated its impact. Results on this descriptive item are not reported here.

your friends," "around the same time as most of your friends," "after most of your friends," or "not sure," by placing a checkmark next to the appropriate statement. This question was asked only for the following transitions: first love, getting drunk for the first time, losing virginity, puberty, first relationship and first trying drugs.

The Beck Depression Inventory – II (BDI-II). The BDI-II is a measure of symptoms of depression consisting of 21 items designed to assess the intensity of depression in clinical and normal populations (Beck, Brown, & Steer, 1996). Participants are asked which statement out of a list of four, arranged in increasing severity, best describes the way they have been feeling during the previous two weeks. Items are in keeping with the depression criteria of the Diagnostic and Statistical Manual of Mental Health Disorders – Fourth Edition (DSM-IV), including sadness, hopelessness, and changes in weight and sleep. The BDI-II is normed for use with individuals aged 13 through 80 years, with excellent reliability (Cronbach α = .92). In the current study, the BDI-II was used as a measure of emotional distress rather than as a basis for inferring clinical depression.

Results and Discussion

Results are presented and discussed in three sections. First, the prevalence and gender differences in age of occurrence of the 10 transitions, as well as adolescents' experiences of their occurrence, are reported and discussed. The second section deals with timing effects of the transitions, and the validity and utility of an idiographic methodology for making timing classifications. In this section, the predictions about

timing offered by the early timing versus the off-time hypotheses are tested and compared. In the final section, the typical sequence of three transitions and the impact of experiencing a disruption to the expected sequence, are presented and discussed. A concluding section that summarises the theoretical implications for the entire study follows the three sections of results and discussion.

Section 1: The Occurrence and Impact of Transitions

Results

Prevalence of Transitions. Table 1 presents the numbers and percentages of the total sample (N = 553) that indicated that each transition had or had not occurred. Percentages of the sample that had experienced each transition ranged from 23.5% for Losing Virginity, to 86.4% for Puberty. A small minority of participants (5% or fewer for each transition) did not indicate whether or not a given transition had occurred, and this data was considered missing. The numbers and percentages of the total sample that did not respond to whether or not each transition had occurred are also presented in Table 1.

The prevalence of each transition was examined according to the age of participants. Participants were divided into three groups based on their current ages: Young (ages 11 and 12 years; n = 114), Mid- (ages 13-16 years; n = 332), and Older (ages 17-19 years; n = 102) Adolescents. Figure 1 shows the percentages of each group indicating that each transition had occurred. As predicted in Hypothesis 1, the prevalence of each transition increased with age of participants. For example, Getting Drunk for the

Table 1. Numbers and Percentages of Total Sample Indicating that Each of 10 Transitions Had Not Occurred, Had Occurred, or Not Indicating Whether or Not a Transition Had Occurred (Missing), in Study 1.

	Has Not Occurred		Has Occurred		Missing	
Transition	n	Percentage	n	Percentage	n	Percentage
First Love	191	34.5	357	64.6	5	0.9
Respect by Peers	65	11.8	458	82.8	30	5.4
Getting Dumped	246	44.5	297	53.7	10	1.8
Getting Drunk	338	61.1	212	38.3	3	0.5
Losing Virginity	416	75.2	130	23.5	7	1.3
Puberty	50	9.0	478	86.4	25	4.5
First Relationship	164	29.7	379	68.5	10	1.8
Trying Drugs	402	72.7	137	24.8	14	2.5
Not Feeling Understood	298	53.9	231	41.8	24	4.3
Life Decision	374	67.6	157	28.4	22	4.0

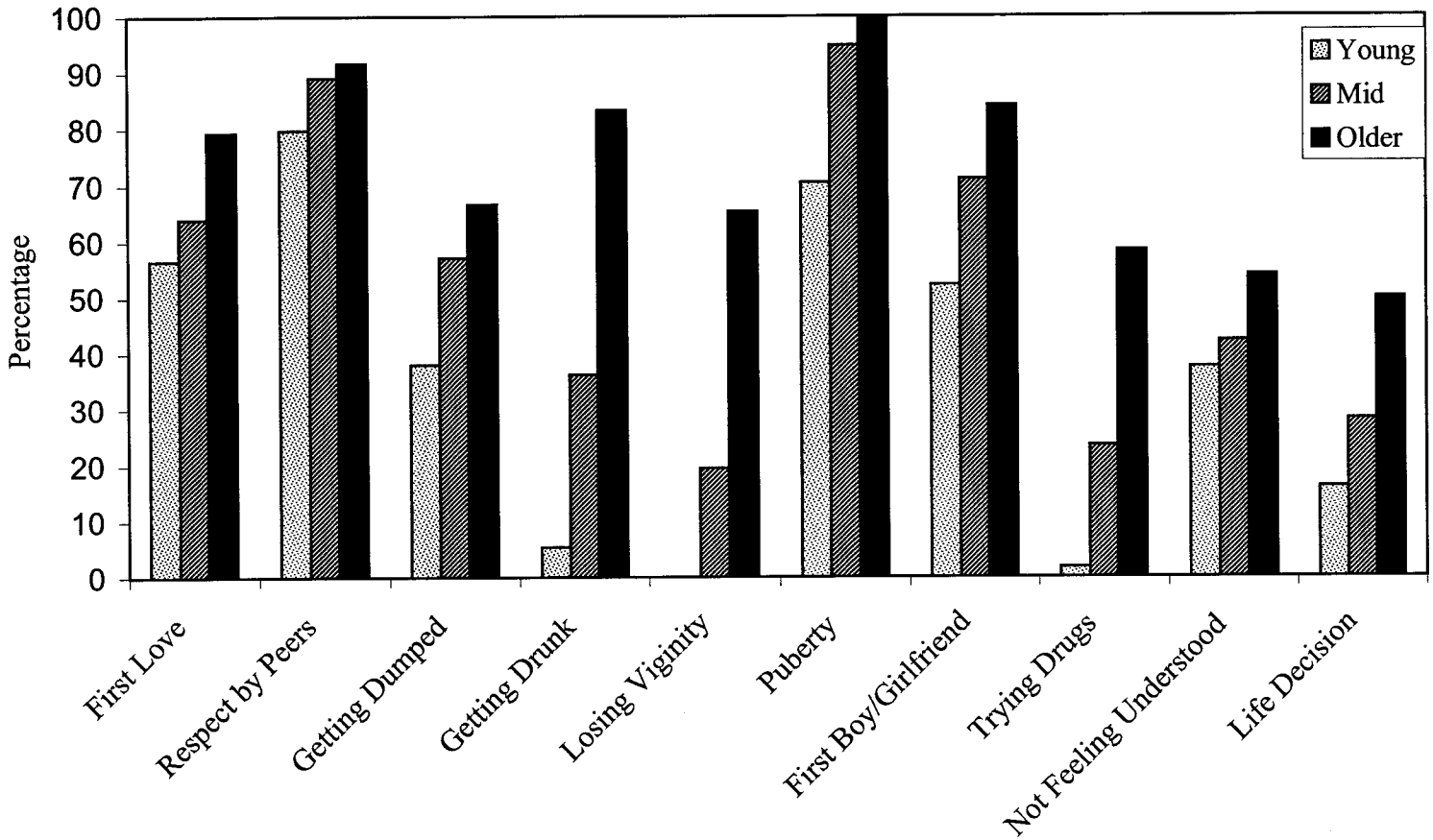

Figure1. Percentages of Young (Ages 11 and 12 Years; n = 114), Mid- (13-16 Years; n = 332), and Older (17-19 Years; n = 102) Participants Indicating That Each Transition Had Occurred, in Study 1.

first time was endorsed by 5.4% of the Young, 36.3% of the Mid-, and 83.3% of the Older Adolescent groups; similarly, Losing Virginity was endorsed by 0% of the Young, 19.5% of the Mid- and 65.3% of the Older Adolescent participants. Data presented in Figure 1 also demonstrate that, in keeping with the predictions of Hypothesis 2, each of the 10 transitions had been experienced by at least 50% of the Older Adolescent group. Proportions of the Older Adolescent group that had experienced each transition ranged from 50% for Life Decision to 100% for Puberty.

Age at Occurrence of Each Transition. The means, standard deviations, ranges, medians and modes for the age at which each transition occurred, for adolescents who indicated that they had experienced each transition, are presented in Table 2. Average ages of occurrence of each transition ranged from 10.88 years for Respected by Peers to 14.49 years for Losing Virginity. Median and modal ages for all transitions fell between 11 years (median age for Respect by Peers) to 15 years (modal age for Life Decision).

As can be seen in the ranges in ages in Table 2, the earliest occurring transition was Respect by Peers, while the latest was Losing Virginity. Examination of the standard deviations for age of occurrence of each transition reveals that some transitions were experienced at widely varying ages for adolescents, with the most extreme of these being Respect by Peers and Not Feeling Understood.

Table 2 also revealed that most of the transitions had unexpectedly young minimum ages (e.g. 2 years of age for First Love, 1 year of age for First Relationship),

Table 2. Descriptive Statistics (In Years) for Age at Occurrence of Each Transition, For Adolescents Who Indicated that They Had Experienced Each of 10 Transitions, in Study 1.

Transition	M	SD	Range	Mdn	Mode
First Love	12.49	2.93	2-18	13	12
Respect by Peers	10.88	3.71	1-18	11	12
Getting Dumped	12.73	2.41	2-18	13	13
Getting Drunk	13.61	2.00	4-18	14	13
Losing Virginity	14.49	1.66	9-18	14	14
Puberty	11.64	1.21	5-16	12	12
First Relationship	12.63	2.24	1-18	13	12
Trying Drugs	13.85	1.61	6-18	14	13
Not Feeling Understood	11.87	3.06	1-18	12	13
Life Decision	13.82	2.93	4-18	14	15

indicating that a few participants in the sample believed that they had experienced the given transition far before adolescence. While there may be several explanations for this, participants who reported such low ages of occurrence did not appear to be responding to the normative experience of adolescent transitions. For this reason, it was decided to exclude transitions that occurred more than two standard deviations below the mean of each transition.

Table 3 presents the descriptive statistics for the ages of occurrence of each transition excluding those cases that were two standard deviations or more below the mean age for the given transition. Median, modal and maximum ages for each transition are not included in Table 3, as these remained the same as those presented in Table 2 for all transitions.

As can be seen in Table 3, some of the minimum ages for each transition presented in Table 3 remain unexpectedly low (e.g., 6 years old for First Love). However, these appear to be within the normal range of experiences for adolescents, as they fall within 2 standard deviations of the mean. The data summarized in Table 3 were used for all subsequent analyses on the effects of age or timing of transition in the current study.

Gender Differences in Prevalence and Age of Transitions. The numbers and percentages of each sex reporting that they had experienced each transition are presented in Table 4. Percentages of males and females that had experienced each transition were generally very similar and within 5% of each other; the exceptions to this were Puberty, in which a slightly higher proportion of females than males reported having experienced

Table 3. Re-calculated Descriptive Statistics (In Years) for Age at Occurrence of Each Transition, for Adolescents Who Indicated that They Had Experienced Each of 10 Transitions, Excluding Transitions for Which Age at Occurrence Was 2 or More Standard Deviations Below the Mean, in Study 1.

Transition	n	(n Excluded)	M	SD	Minimum Age
First Love	349	(8)	12.68	2.66	6
Respect by Peers	446	(12)	11.14	3.39	3
Getting Dumped	292	(5)	12.87	2.20	7
Getting Drunk	208	(4)	13.74	1.76	9
Losing Virginity	129	(1)	14.53	1.60	11
Puberty	473	(5)	11.68	1.12	9
First Relationship	370	(9)	12.80	1.97	8
Trying Drugs	135	(2)	13.95	1.41	11
Not Feeling Understood	226	(5)	12.09	2.69	5
Life Decision	152	(5)	14.12	2.46	7

Table 4. Numbers and Percentage of Each Sex Indicating that They Had Experienced Each of 10 Transitions, in Study 1.

	Males		Females	
Transition	n	Percentage	n	Percentage
First Love	137	62.3	205	63.7
Respect by Peers	178	80.9	259	80.4
Getting Dumped	112	50.9	175	54.3
Getting Drunk	88	40.0	117	36.3
Losing Virginity	52	23.6	75	23.3
Puberty	177	80.5	287	89.1
First Relationship	142	64.5	218	67.7
Trying Drugs	63	28.6	71	22.0
Not Feeling Understood	79	39.9	140	43.5
Life Decision	61	27.7	89	27.6

the transition; Trying Drugs, where the proportion of females was lower than males; and Not Feeling Understood, which was endorsed by a slightly higher proportion of females than males. Chi-square tests indicated that the proportions of missing data did not differ between the sexes on any of the transitions.

Hypothesis 3 predicted that girls would report a younger age at puberty than boys. In order to test this hypothesis, the gender difference in the mean age of puberty was examined in an independent samples t-test. Results indicated that this hypothesis was not supported, given that the difference between boys and girls on age at Puberty was not significant. In fact, none of the transitions showed gender differences on age of occurrence, with one exception. Respect by Peers was the only transition to show a significant difference on age of occurrence between boys and girls, $\underline{t}$ (350.5) = 3.08, $\underline{p} <$ 0.01, with boys reporting first feeling respected at a younger age ($\underline{M}$ = 10.52, $\underline{SD}$ = 3.61) than girls ($\underline{M}$ = 11.56, $\underline{SD}$ = 3.21).

Adolescent Experiences of the Transitions. In order to assess the relative impact of each transition, participants were asked to rate their experience of each event that had occurred along two dimensions: Importance (not important to very important) and Affective Impact (negative to positive). The means, standard deviations, medians, and modal ratings for Importance of each transition are presented in Table 5, and for Affective Impact in Table 6.

Hypothesis 4 predicted that transitions in the domains of intimate relationships and individuation would be rated as most important. Results for ratings of Importance,

Table 5. Descriptive Statistics for Ratings of Importance for Each of 10 Transitions that Had Occurred, in Study 1.

Transition	M	SD	Mdn	Mode
First Love	4.07	1.89	4.5	6
Respect by Peers	4.82	1.40	5	6
Getting Dumped	3.18	2.11	3	6
Getting Drunk	3.07	2.15	3	3
Losing Virginity	4.05	1.96	4	6
Puberty	3.63	1.78	4	3
First Relationship	4.17	1.81	5	6
Trying Drugs	2.95	2.16	3	0
Not Feeling Understood	3.39	2.44	3	3
Life Decision	5.06	1.41	6	6

Table 6. Descriptive Statistics for Ratings of Affective Impact for Each of 10 Transitions that Had Occurred, in Study 1.

Transition	M	SD	Mdn	Mode
First Love	4.63	1.45	5	6
Respect by Peers	5.09	1.11	5	6
Getting Dumped	1.82	1.67	1	0
Getting Drunk	4.00	1.77	4	6
Losing Virginity	4.07	2.03	5	6
Puberty	3.49	1.50	3	3
First Relationship	4.73	1.34	5	6
Trying Drugs	3.86	1.88	4	6
Not Feeling Understood	1.67	1.60	1	0
Life Decision	4.41	1.87	5	6

presented in Table 5, supported this prediction. The four highest-rated transitions, all of which had modal ratings of 6, were in the domains of individuation, including Life Decision and Respect by Peers, and in intimate relationships, including First Relationship and First Love. Although specific predictions were not made about the relative importance of the remaining transitions, two other transitions that had modal ratings of 6 also involved interpersonal transitions, including Losing Virginity and Getting Dumped. Other transitions were rated as moderately important, with modal ratings of 3, including Puberty, Not Feeling Understood, and Getting Drunk. The transition with the lowest rating of importance, including a mode of 0, was Trying Drugs.

In addition to the prediction that those transitions would be the most important, Hypothesis 4 predicted that transitions in the domains of intimate relationships and individuation would also be rated as the most positive. Results presented in Table 6 confirm this hypothesis, with the four highest affective ratings for transitions in these two domains. These transitions, all of which had modal ratings of 6 and median ratings of 5, included: Respect by Peers, First Relationship, First Love, and Life Decision.

Three other transitions that were rated as quite positive, both with modal ratings of 6, were Losing Virginity, Getting Drunk and Trying Drugs. Puberty was rated as a neutral experience, with a mode of 3, while transitions in the rejection/alienation domain were the most negative, including Getting Dumped and Not Feeling Understood, both of which had median ratings of 1 and modes of 0.

Gender Differences in the Impact of Transitions. In order to examine gender differences in the impact of transitions, independent samples t-tests were conducted to determine whether the Importance or Affective Impact of each transition differed with participants' sex. Results indicated that the two psychosexual transitions were rated more positively by boys than girls: Puberty, t (458) = 3.34, $p < .01$, and Losing Virginity t (125) = 2.81, $p < .01$. Puberty was also rated as more important by boys, t (459) = 2.45, $p < .05$, while importance ratings for Losing Virginity did not differ between the sexes. In addition, boys rated Getting Drunk as more important, t (202) = 4.60, $p < .001$, and more positive, t (201) = 3.11, $p < .01$, than girls. Results indicated that no sex differences existed on either Importance or Affective Impact for First Love, Respect by Peers, Getting Dumped, First Relationship, Trying Drugs, Not Feeling Understood, and Life Decision.

Relation between Occurrence of Transitions and Current Functioning. In order to verify whether the occurrence of each of the transitions was related to Current Distress, a series of independent samples t-tests was done using Occurrence versus Non-Occurrence of each transition as the grouping variable, and Current Distress (measured on the BDI-II) as the dependent variable. Table 7 presents the mean scores and standard deviations on Current Distress for participants who had versus those who had not experienced each transition.

Table 7 indicates transitions on which the two groups (Occurrence vs. Non-Occurrence) were significantly different and at what probability. Results are in keeping

Table 7. Descriptive Statistics for Current Distress for Participants Who Had Versus Those Who Had Not Experienced Each of 10 Transitions, in Study 1.

	Has Occurred		Has Not Occurred	
Transition	M	SD	M	SD
First Love [a]	9.12	8.71	7.16	8.00
Respect by Peers	8.33	8.31	10.39	10.90
Getting Dumped [b]	10.03	9.18	6.53	7.12
Getting Drunk [b]	11.37	9.88	6.73	7.08
Losing Virginity [b]	11.38	9.18	7.54	8.09
Puberty [b]	8.87	8.75	4.82	5.43
First Relationship	8.90	8.25	7.47	9.17
Trying Drugs [b]	11.37	9.34	7.42	7.92
Not Feeling Understood [b]	11.61	9.93	6.05	6.38
Life Decision [a]	10.02	9.43	7.75	8.11

[a] Means significantly different at $p < .01$

[b] Means significantly different at $p < .001$

with Hypothesis 5, which predicted that adolescents who had experienced transitions in the domains of substance use, sexual initiation, and rejection/alienation, would show higher levels of current distress than those that have not experienced those transitions. As shown in Table 7, participants who had experienced transitions that are not socially valued or transitions in the domains of rejection/alienation showed significantly higher Current Distress than those who had not, including: Getting Drunk [t (324.9) = 5.81, p < .001], Trying Drugs [t (192.1) = 4.32, p < .001], Losing Virginity [t (529) = 2.64, p < .001], Getting Dumped [t (523.2) = 4.91, p < .001], and Not Feeling Understood, [t (514) = 2.77, p < .01].

In Hypothesis 6, it was predicted that adolescents who had *not* experienced socially valued transitions in the domains of intimate relationships and individuation would show higher levels of Current Distress than those who had. This hypothesis was not supported. As demonstrated in Table 7, the occurrence of some of these transitions did predict Current Distress, but in the opposite direction than was expected, including First Love [t (529) = 2.64, p < .01] and Life Decision [t (514) = 2.77, p < .01]. That is, adolescents who had experienced either love or making a major life decision independently showed significantly higher rates of current distress than those who had not. The occurrence of the other two transitions in these domains, Respect by Peers and First Relationship, did not significantly predict Current Distress. In other words, adolescents who had felt respected by their peers or had had a significant romantic relationship did not differ in their current distress from those who had not.

Finally, Hypothesis 7 predicted that individuals who had experienced Puberty would have higher levels of Current Distress. Data in Table 7 indicate that this hypothesis was supported, t (77.4) = 4.63, $p < .001$, with adolescents who had experienced puberty reporting higher levels of current distress than those who had not.

Discussion

Prevalence and Age at Occurrence of Transitions. The first general objective of the current study was to document the prevalence and gender differences in the average ages of occurrence of each transition. First, it was confirmed that events selected for this study were in fact normative. Results supported the expectation that the prevalence of each of the 10 transitions would increase with age of participants. For example, getting drunk for the first time was endorsed by 5% of participants aged 11 and 12 years, 36% of 13 to16-year-olds, and 83% of the group aged 17 to19 years. This pattern was true for all of the transitions, with each successive age group having a higher proportion of adolescents who had experienced the given event. The second way of confirming that the transitions included in the current study were normative during adolescence was to determine whether the majority of older adolescent participants in the study had experienced each of the transitions. Results indicated that a minimum of half of the participants aged 17-19 years had experienced each of the 10 transitions, providing further evidence that the events selected for this study are normative during adolescence.

In examining the descriptive statistics for age at occurrence of each transition, it was noted that a small number of participants reported unexpectedly low minimum ages

of occurrence. For example, individuals reported ages as young as 5 years for puberty or 2 years for falling in love for the first time. While there may have been a number of reasons for this surprising finding (explored in detail below), such young ages of occurrence did not appear to reflect the normative experience of adolescent transitions. This led to the decision to exclude transitions that had occurred more than two standard deviations below the mean age of occurrence for that transition, and thereby eliminate extreme outliers. In some cases, the minimum ages for each transition remained unusually low, such as experiencing first love at age 6, but these cases were retained with the reasoning that they appeared to be within the normal range of experiences for adolescents.

Examination of the descriptive statistics of the ages of occurrence of each transition, excluding the transitions that occurred extremely early as described above, allowed for documentation of the order in which transitions occurred on average for this sample of adolescents. The earliest transition was feeling respected by one's peers, which occurred on average soon after participants' 11th birthdays. This was followed by puberty, with an average occurrence of about age 11 ½ years. Transitions related to intimate relationships and rejection/alienation had an average age of occurrence between 12 and 13 years of age, including first love, first romantic relationship, first feeling like no one could understand you, and first getting dumped or having your heart broken. Substance use transitions, including getting drunk and trying drugs, tended to occur between 13 ½ and 14 years. Making a major life decision independently occurred on

average soon after participants' 14th birthdays. The transition with the oldest age of occurrence was initiating sexual intercourse, which took place at 14 ½ years of age on average.

It is important to note that these were average ages of occurrence only for those transitions that had already occurred in the sample, and that the proportion of adolescents that had experienced each event varied. Clearly, the averages would be higher if all the individuals in the sample had experienced each of the transitions. This is particularly true for those transitions that had only occurred in about one quarter of the entire sample, including first intercourse, trying drugs, and making a major life decision independently. To wait until these transitions had been experienced by all or most participants would have meant surveying participants in adulthood. Several of the transitions included in the current study have been assessed in this manner already (Newcomb, 1996), an approach that raises concerns regarding retrospective bias. While taking into consideration that these average ages are an underestimation for the population, results provide a general indication of when transitions tend to occur in adolescence, and in what order.

Gender Differences in Prevalence and Age of Transitions. In considering gender differences in the prevalence and average ages of occurrence of transitions, results indicated relatively few differences between the sexes. Proportions of males and females in the sample that had experienced each transition were generally very similar. The exceptions to this were trying drugs, which was endorsed by 17% more males, as well as

puberty and feeling like no one understood, which were endorsed by approximately 8% more females than males.

Only one transition showed a significant gender difference in age of occurrence: feeling respected by one's peers occurred on average a full year earlier in boys than in girls. This finding makes for interesting speculation, although it had not been predicted. Possible explanations include that the manner in which respect is earned is different for each sex, or that boys become aware of their status among their peers earlier than girls. The finding that boys experienced respect earlier than girls is particularly striking because it was the only significant gender difference in age of occurrence of any of the transitions examined, and because of the implications for development. Given that this finding was not predicted, however, one must consider that it may have arisen by chance, and it warrants further investigation before firm conclusions can be drawn.

The only gender difference that had been predicted was that girls would report experiencing puberty at a younger age than boys would. This hypothesis was not supported, with results indicating that the age of occurrence of puberty was not significantly different between boys and girls. The discrepancy between this finding and the expectation that puberty would occur earlier in girls, based on the vast existing literature, indicates that the current results on this transition may be questionable.

The lack of gender difference in onset of puberty may best be explained by a methodological difference in how puberty was assessed in the current study. There is little consistency in the literature about how to assess the occurrence of puberty in boys

using a one-item self-report question that would be equivalent to menarche in girls. In past self-report studies of puberty in boys, variations of markers used to assess this transition have led to extreme variability in reports of age at puberty (cf. Graber et al., 1996). In one study, for example, use of age at which boys first needed to shave regularly as a marker for onset of puberty yielded an average age of almost 18 years for puberty in males (Newcomb, 1996). Pilot testing during the development of the ATQ had indicated little agreement about how males became aware that they had "hit puberty," with responses including noticing body hair, voice change, and increased sexual awareness as the markers of this event. For these reasons, it was decided simply to ask both boys and girls about when they had "hit puberty," without specifying a marker upon which they should base their responses. This certainly led to the use of different markers by individuals to determine their age at puberty. However, it should be noted that almost all participants were still able to answer the question, and the proportion of males and females who did not respond on this item, taken as a rough measure of whether they knew they had either experienced puberty or not, did not differ significantly. Nonetheless, this methodological departure from previous studies may explain the failure to support the well-established gender difference in age at onset of puberty.

Adolescent Experiences of the Transitions. The second objective in the current study was to document adolescents' experiences of the 10 transitions. A novel way of assessing impressions of transitions was used in asking adolescents to rate those transitions that they had experienced in terms of the event's importance to their own

identity and the affective impact of the event. It was predicted that transitions in the domains of intimate relationships and individuation would be rated as the most important and the most positive. These predictions were supported in that the four highest rated transitions on both of these dimensions were: making a major life decision independently, feeling respected by one's peers, having a romantic relationship and falling in love. This is consistent with adolescent theorists who believe that identity formation, involving individuation and the formation of intimate relationships, is the critical task during this life phase (e.g., Dyk & Adams, 1987, 1990; Paul & White, 1990; Waterman, 1983)

The ranking of the remaining transitions on each dimension was indicative of their relative importance and the type of affective experience they represented in this sample. Losing virginity was ranked fifth on both dimensions, with average ratings indicating that this event was generally viewed as somewhat positive and moderately important. From this point forward, the rankings differed for the two measures of impact. Puberty, not feeling understood, and being dumped were all ranked as moderately important to adolescents' sense of who they are now, in that order. The least important transitions were being drunk for the first time, and then trying drugs, which had the lowest average ratings on this dimension. In terms of affective impact, being drunk and trying drugs were ranked as affectively neutral, along with puberty. Transitions related to rejection and alienation were the most negative, with being dumped, and then not feeling understood, ranking the lowest on the affective dimension.

Gender Differences in the Impact of Transitions. Gender differences in the experience of transitions were also examined. With regard to psychosexual transitions, boys rated the experiences of puberty and losing their virginity as more positive than did girls. Puberty was also rated as more important to identity formation by boys than girls, but ratings of the importance of losing virginity did not differ between the sexes. In terms of substance use transitions, boys rated their first time getting drunk as more important and more positive than did girls. However, ratings of trying drugs did not differ between the sexes on either dimension of experience, and no gender differences were found on either dimension for the other transitions.

Relation between Occurrence of Transitions and Current Functioning. In order to assess the impact of transitions, those adolescents who had experienced each transition were compared to those who had not in terms of their current functioning. Three hypotheses were tested in this regard, with current distress used as the measure of functioning. In keeping with the first prediction, findings indicated that participants who had experienced transitions that are not socially-valued in adolescence, including substance use, sexual intercourse, and transitions in the domain of rejection/alienation, showed higher levels of current distress than those who had not. Therefore, it appears that the occurrence of such transitions is related to functional difficulties.

Due to the correlational nature of this study, it is not possible to infer that such transitions cause higher distress. It may be that adolescents who are more distressed to begin with are more likely to engage in such activities. If such transitions do create

higher distress, it is unclear if this effect is the result of a lasting vulnerability that occurs with these transitions, or if there is a larger effect shortly after the transition occurs which dissipates over time. In addition, one must consider the possibility that a third factor may account for this correlation. For example, adolescents may engage in some of these activities because they feel more alienated, accounting for both the behaviour and the higher levels of distress.

The second hypothesis with regard to the impact of transitions on functioning was that adolescents who had *not* experienced certain socially valued transitions, namely those in the domains of intimate relationships and individuation, would show higher levels of current distress than those who had. This hypothesis was not supported, with some results indicating that the opposite was actually true. Individuals who had never fallen in love and those who had never made a life decision independently were actually shown to be better off than those who had in the current study, in terms of having lower levels of current distress. For the other socially valued transitions, including feeling respected by peers and having a first significant romantic relationship, there were no differences in current functioning based on whether or not the transition had occurred.

Although these findings are generally counterintuitive, they are not entirely without precedent. Brown, Dolcini, and Leventhal (1997) found that adolescents who were in a romantic relationship or had experienced one in the recent past year reported significantly higher levels of drug use and delinquency than those without such a relationship. Such findings challenge the assumption that the occurrence of socially

valued transitions, considered critical to adolescent development and identity formation, will confer benefits on adolescents, at least in terms of their psychosocial well being. These results are particularly striking given that the four transitions in question were rated as the most positive experiences in the current study. The discrepancy between adolescents' impressions of such events and how functioning is related to the occurrence of transitions underscore the importance of assessing such experiences from the perspective of adolescents in addition to considering functional outcomes.

The third hypothesis about the impact of transitions on functioning was that the occurrence of puberty would be related to higher levels of distress. This prediction was supported by the findings of the current study. That is, in keeping with existing research literature (e.g., Angold et al., 1998), the occurrence of puberty is associated with higher levels of current distress in adolescence.

Section 2: Effects of Timing

Results

In this section, timing effects of six transitions assessed on the ATQ are examined, and two related hypotheses about timing are tested and compared. In doing so, an idiographic approach to making timing classifications was used. That is, adolescents were asked for their self-perceptions of their timing on each transition by having them rate whether the event happened "before," "around the same time," or "after" most of their friends, or "not sure" if they were uncertain about their timing.

These self-perceptions led to categorisation in the Early, On-Time, Late, or Not Sure groups, respectively (refer to Table 8 for the numbers and percentages in each category).

Validity of Idiographic Approach to Timing Categorization. Hypothesis 8 predicted that perceived timing on each of the transitions would reflect real differences in the ages of occurrence of transitions. In order to test this, adolescents' self-perceptions of timing for each transition were compared to the reported ages at which the given transition occurred. A series of Analyses of Variance (ANOVAs) was conducted with adolescents' self-reported timing (Early, On-Time, or Late) for each transition entered as the predictor variable, and their age at the time of the transition entered as the dependent variable. Post hoc Tukey's HSD tests were then used to conduct pairwise comparisons between the timing categories. Table 9 presents the mean reported ages at which each of the transitions occurred.

As can be seen in Table 9, mean ages increased with each successive timing self-categorization of Early, On-Time, and Late for each transition. Table 9 also illustrates that results of the ANOVAs generally confirmed Hypothesis 8, in that participants' self-categorization of timing were, by and large, accurate perceptions of their relative distribution compared to their peers. ANOVAs for each of the six transitions were significant at the $p < .01$ level or less; in other words, self-reported timing category significantly predicted age of occurrence of First Love (F [2, 252]= 4.84, $p < .01$), Getting Drunk (F [2, 179] = 29.63, $p < .001$), Losing Virginity (F [2, 116] = 5.90, $p < .01$), Puberty (F [2, 362] = 9.42, $p < .001$), First Relationship (F [2, 302] = 10.03,

Table 8. Numbers of Participants Rating Themselves as Early, On-Time or Late, or Who Were "Not Sure" Regarding their Timing, and Percentages in Each Category (Out of Those Who Had Experienced the Transition) for Six Transitions, In Study 1.

	Early		On-Time		Late		Not Sure	
Transition	n	Percentage	n	Percentage	n	Percentage	n	Percentage
First Love	89	25.6	135	38.8	30	8.6	94	27.0
Getting Drunk	47	22.9	91	44.4	43	21.0	24	11.7
Losing Virginity	68	53.5	33	26.0	16	12.6	10	7.9
Puberty	102	21.6	228	48.3	40	8.5	102	21.6
First Relationship	86	23.7	179	49.3	38	10.5	60	16.5
Trying Drugs	32	24.6	65	50.0	19	14.6	14	10.8

Table 9. Mean Age (in Years) at Time of Transition for Participants Who Perceived Themselves as Early, On-Time, or Late, for Six Transitions, in Study 1.

Transition	Early	On-Time	Late
First Love [a]	12.37	12.49	14.07
Getting Drunk [a]	12.94	13.56	15.28
Losing Virginity	14.22	14.70	15.69
Puberty [a,b]	11.36	11.74	12.20
First Relationship [a]	12.47	12.72	14.05
Trying Drugs [a,b]	13.19	13.98	15.68

Note: For all transitions, the Early group had a significantly younger mean age than the Late group.

[a] Transitions for which mean age of the On Time group was significantly younger than the Late group.

[b] Transitions for which mean age of the Early group was significantly younger than the On Time group.

$p < .001$) and Trying Drugs (F [2, 115] = 27.01, $p < .001$).

Post hoc pairwise comparisons indicated that some or all of the timing categories were significantly different from each other in predicting the age of occurrence of each transition, as illustrated in Table 9. For all six transitions, the mean age for the Early group was younger than for the Late group. For Puberty and Trying Drugs, the differences between the mean ages for each timing group were significant, such that the Early groups were significantly younger than the On-Time groups, which were significantly younger than the Late groups. For First Love, Getting Drunk, and First Relationship, those in On-Time groups were significantly younger at the time of transition than those in the Late groups, but the difference in the mean ages of the Early and On-Time groups were not statistically significant. For Losing Virginity, there was no difference in mean age of occurrence between the Early or Late groups versus the On-Time group.

Hypothesis 9 predicted that a greater percentage of adolescents would perceive themselves as having experienced each transition On-Time, that is, at around the same time as most of their peers, than would classify themselves as Early or Late. Table 8 shows results of participants' timing self-categorizations as Early, On-Time, Late, or Not Sure, in terms of numbers and percentages of those who had experienced each transition.

As is shown in Table 8, Hypothesis 9 was confirmed for five of the six transitions. Results indicated that for First Love, Getting Drunk, Puberty, First Relationship, and Trying Drugs, the largest percentage of participants who had experienced the transition in

question rated themselves as On-Time. Losing Virginity was the only transition for which most adolescents who had the experience believed that they were early (53.5%).

Data in Table 8 also address the utility of using self-perceptions of timing to categorize adolescents, in that this methodology allowed for identification of adolescents who were uncertain about their timing, while traditional methodologies would have classified these adolescents into one of the timing groups. Hypothesis 10 predicted that a proportion of participants would be uncertain about their timing relative to their peers on the six transitions. On all but one of the transitions, at least 10% of participants indicated uncertainty about their timing relative to their peers. The transitions with the highest proportion of participants who were uncertain about their timing relative to their peers were First Love (27%), Puberty (21.6%), and First Relationship (16.5%). Uncertainty about timing of Getting Drunk (11.7%) and Trying Drugs (10.8%) was somewhat lower. Participants who had lost their virginity were most aware of their timing on this transition, with only 7.9% indicating that they were uncertain about their timing. The utility of the idiographic methodology was confirmed with this finding, indicating that a substantial minority of adolescents are unaware of their timing, particularly on First Love and Puberty.

Timing as a Predictor of Experience of Transitions and Current Distress. Because consistent timing effects have not been found in the literature, no specific predictions were made about which transitions would show timing effects, nor which timing hypothesis would best account for those that did. Instead, a general prediction

was made in Hypothesis 11 that the early timing and off-time hypotheses would differentially account for adolescent self-perceptions of timing in those transitions for which timing effects were found. In order to test this hypothesis, both the early timing and off-time hypotheses were investigated in each of the six transitions, by comparing timing groups along the dimensions of Importance and Affective Impact, and in terms of Current Distress. The basic analytic approach was to define the timing groups according to the theory being tested, and compare these groups on the measures of outcome. Cell sizes for these analyses varied with the particular transition can be determined by referring to Table 8. The effects of gender were controlled-for using Analyses of Covariance (ANCOVAs). That is, separate ANCOVAs were conducted to test whether the timing groups for each transition predicted differences on each outcome variable (Importance, Affective Impact and Current Distress), with gender entered as the covariate in each analysis.

To begin with, the early timing hypothesis was tested by comparing participants who were Early on each of the transitions to those who were not early. A "Not Early" group was created for this purpose by collapsing the On-Time, Late, or Not Sure groups, allowing for comparison of Early versus Not Early groups on the outcome measures.

Results indicated that Early versus Not Early timing was not related to significant differences on any of the outcome variables for the following transitions: Getting Drunk,

Losing Virginity, or Puberty[5].

Early versus Not Early timing effects were found for the remaining three transitions, namely: First Relationship, First Love, and Trying Drugs. Some of these timing effects were in keeping with the early timing hypothesis while others were not. On First Relationship, experiencing the transition early predicted Importance, $\underline{F}$ (1, 290) = 4.10, $\underline{p} < .05$, with the Early group rating this experience as more important than the Not Early group ($\underline{M}$ = 4.55 vs.4.10, respectively). Early timing on First Relationship also predicted the Affective Impact of this transition, $\underline{F}$ (1, 290) = 15.88, $\underline{p} < .001$. However, this was in the direction contrary to that which would be predicted by the early timing hypothesis, with the Early group indicating a more positive experience ($\underline{M}$ = 5.28) than the Not Early group ($\underline{M}$ = 4.66). A similar timing effect was found for First Love, the early occurrence of which predicted Affective Impact, $\underline{F}$ (1, 246) = 5.90, $\underline{p} < .05$. Again this finding was contrary to what would be predicted by the early timing hypothesis, with the Early group indicating a more positive experience ($\underline{M}$ = 4.91) than the Not Early group ($\underline{M}$ = 4.46). Early timing of First Love was not related to importance ratings on this transition, nor was the timing of either of these two transitions related to Current Distress. Finally, for Trying Drugs, neither Affective Importance nor Current Distress differed for the Early versus Not Early categorizations. However, participants in the

[5] In order to ensure that the impact of timing of transitions was not obscured by gender effects in these three transitions, a separate series of t-tests were conducted in boys and girls to determine whether being Early or Not Early was related to any of the outcome measures. As with the results on the ANCOVAs, Early versus Not Early groups did not differ on any of the outcome measures in either boys or girls.

Early group did rate this transitions as significantly more important (M = 3.59) than those in the Not Early group (M = 2.57), F (1, 112) = 5.93, $p < .05$.

In testing the off-time hypothesis, a second series of ANCOVAs were used to control for effects of gender, this time with three timing levels: Early, On-Time or Late. As for the test of the early timing hypothesis, separate analyses for each of the six transitions in predicting each of the outcome variables were conducted. In analyses that were significant, planned contrasts revealed which of the timing groups were significantly different from each other on the given transition and outcome measure.

In keeping with findings for the early timing hypothesis, there were no timing effects for Getting Drunk, Losing Virginity, or Puberty[6], while results showed mixed support for the off-time hypothesis in the occurrence of First Relationship, First Love, and Trying Drugs.

On First Relationship, results revealed significant differences between the timing groups on both impact measures, but not on current distress. Timing of First Relationship predicted Affective Impact, F (2, 289) = 12.03, $p < .001$, with significant differences between each of the timing groups, such that the Late group experienced this transition as significantly less positive (M = 4.16) than either the On-Time (M = 4.77) or the Early (M = 5.28) groups. The difference between the Early and On-Time groups, while also significant, was not in the direction predicted by the off-time hypothesis, given that the

[6] As previously described for the test of the early timing hypothesis, an additional series of ANOVAs was conducted in boys and girls separately to test whether the timing groups predicted any of the outcome measures for those transition that did not show timing effects in the overall sample. As with the previous analyses, the timing groups did not differ on any of the outcome measures in either boys or girls.

Early group rated the transition as more positive than did those who experienced the transition on time. Timing of First Relationship also predicted Importance of this transition, F (2, 289) = 3.67, $p < .05$, with significant differences between the Early (M = 4.55) and Late (M = 3.63) groups. In this instance, it was results for the Early group that were consistent with predictions that transitions that occur off-time would have a greater impact, which would favour the early timing hypothesis. However, the differences between either of the off-time groups and the On-Time group were not significant.

Mixed support for the off-time hypothesis was also found in timing effects for First Love. Timing of First Love predicted Current Distress, F (2, 235) = 3.66, $p < .05$. Planned contrasts revealed that the Early group showed a significantly higher level of distress than the On-Time group (M = 10.52 and 8.00, respectively), and that the Late group also showed significantly more distress (M = 11.64) than the On-Time group. The difference between the Early and Late groups was not significant. Timing of First Love also predicted Affective Impact of the transition, F (2, 245) = 3.05, $p < .05$. However, planned contrasts revealed that this was not in the direction predicted by the off-time hypothesis, with participants in the Early group reporting a more positive experience (M = 4.91) than those in the On-Time group (M = 4.43), and no other significant differences between the groups. Also contrary to expectations was the finding that timing of First Love did not predict Importance of this transition.

In the case of Trying Drugs, timing category predicted both Importance, F (2, 111) = 3.17, $p < .05$ and Affective Impact, F (2, 111) = 6.08, $p < .01$. For Importance,

planned contrasts showed that the Early group's ratings were significantly higher (M = 3.59) than either the On-Time (M = 2.66) or the Late (M = 2.26) groups' ratings, while the On-time and Late groups did not differ significantly. This finding is consistent with both the off-time and the early timing hypothesis. However, the latter appears to better account for the overall timing effects of this transition in that the Late group did not differ from the other two groups on this dimension of impact, as was predicted by the off-time hypothesis. For Affective Impact, planned contrasts indicated that the Late group rated the transition as more negative (M = 2.47) than the On-Time group (M = 4.09), which provides limited support for the off-time hypothesis. The Late group also rated Trying Drugs as significantly more negative than the Early group (M = 3.94). The Early group did not differ significantly from the On-Time group on Affective Impact. No timing effects were found for Current Distress on this transition.

Discussion

Validity and Utility of an Idiographic Approach to Timing Categorization. The second section of the current study focused on the timing effects of six transitions on adolescent functioning and on the experience of each transition. An idiographic approach to making timing categorizations was used by classifying adolescents into timing groups according to their self-perceptions. To this end, adolescents were asked whether each of the transitions they had experienced had occurred before, at the same time, or after most of their friends, or whether they were not sure about their timing on the given event. This allowed for categorization of adolescents as early, on-time, late, or uncertain in terms of

their self-perceptions of their timing on each transition, rather than relying on "objective" or arbitrary criteria for making timing classifications.

Prior to examining timing effects, the validity of the idiographic approach was verified. The first test of the validity of timing self-perceptions was to determine whether the majority of adolescents had classified themselves as having experienced each of the transitions at around the same time as most of their friends. Results offered initial support for the validity of this methodology in that the majority of adolescents categorized themselves as having been on-time on all but one of the transitions. The exception to this was for first sexual intercourse, on which the majority indicated that they were early. In fact, the perception that many adolescents who had had sexual intercourse did so before most of their friends may have been accurate, given that only one quarter of the participants in the current study had experienced this transition.

The second way of verifying the validity of the idiographic approach was to determine whether adolescents' timing self-perceptions corresponded to the ages at which they experienced the transitions. For example, did those adolescents who indicated that they got drunk before most of their peers actually report a younger age for their first time getting drunk than those who categorized themselves as on-time or late? Findings indicated that adolescents' self-perceived timing on each of the six transitions was generally an accurate assessment of where their ages fell on the distribution relative to others who had also experienced the event. For a few transitions, average age of occurrence was not significantly different between the on-time and the early or late

groups. However, for each transition, the average age of occurrence was progressively greater with each successive timing category (early, on-time, and late). In addition, the early group was significantly younger than the late group for all six transitions, and the on-time group was significantly younger than the late group on five of the six transitions. This finding lends further validation to the use of self-perceptions for categorizing adolescents' timing on transitions.

The utility of an idiographic approach to making timing classifications was established in the finding that a significant proportion of participants were uncertain about their timing relative to their peers on the six transitions. On five of the six transitions, at least 10% of participants indicated uncertainty about their timing relative to their friends. The exception was for first sexual intercourse, on which only about 8% were unaware of their timing. Transitions with the highest proportion of individuals who were uncertain about their timing were first love and puberty, on which approximately one quarter of participants were not sure whether they had had the experience before, at the same time or after most of their friends. Therefore, it appears that a significant minority of adolescents are unaware of their timing on transitions compared to their friends, particularly in the case of puberty and falling in love for the first time. In studies that use a nomothetic approach for making timing classifications, adolescents who are uncertain about their timing are still categorized as being early, on-time, or late. The validity of such classifications, and of making assumptions that being out-of-synch with

the majority is more stressful, is questionable if those adolescents who are not aware of their timing are included in timing categories based on arbitrary criteria.

Timing as a Predictor of Impact of Transitions and Current Distress. Two theories about the effects of timing, the early timing and off-time hypotheses, were tested in the six transitions. Results were then compared in order to determine which of the two theories best accounted for the impact of timing for each of the transitions that showed timing effects. Three of the six transitions showed timing effects on the measures of impact of the transitions, and one of these showed timing effects on current functioning as well. The experience of first love, first romantic relationship, and trying drugs differed in importance and/or affective impact of the transition depending on the timing of each event, and the timing of first love was also related to current distress. The remaining three transitions, puberty, first intercourse and getting drunk for the first time, did not show any timing effects at all. In this section, findings related to timing effects are discussed in the context of the two timing hypotheses.

First love was the only transition on which there was clear support for either timing hypothesis, and this was true for only one of the measures of outcome. The finding that adolescents who perceive that they experienced first love either before or after most of their friends have higher levels of current distress than those who believe they are on time was in keeping with the off-time hypothesis. Moreover, this result was evident only when the three timing groups were compared (in the test of the off-time hypothesis), and not when the early group was compared to those who were not early on

this transition (in the test of the early timing hypothesis). The latter unequivocally favours the off-time hypothesis over the early timing hypothesis in explaining the effects of timing of first love on current functioning.

In contrast, findings for the relation between the timing of first love and ratings of importance and affective impact did not support either of the timing hypotheses. The only timing effect that was found on the experience of this transition was that those who were early on first love reported that this was a more positive experience, compared with both those who were not early (in the test of the early timing hypothesis) or with those who were on-time (in the test of the off-time hypothesis). This finding was not in keeping with either of the timing hypotheses, which would predict that adolescents who are early on a transition will have a more negative experience. Moreover, timing was found to be unrelated to importance ratings in both tests of the timing hypotheses. Therefore, while being out-of-synch with one's peers on first love appears to be related to current functioning in the manner predicted by the off-time hypothesis, neither the early timing nor the off-time hypotheses accounted for the actual experience of this transition.

For the other two transitions which showed timing effects, first romantic relationship and trying drugs, neither of the two timing hypotheses fully accounted for the effects of timing. As noted above, the timing of these two transitions was not related to adolescents' current levels of distress in testing either of the timing hypotheses. In terms of the experience of a first relationship and trying drugs, partial support was found for the early timing hypothesis, in that those adolescents who were early on these transitions

rated them as more important to their identity than those who were not early. This was only considered partial support for the early timing hypothesis, however, because the early occurrence of these transitions did not also predict a more negative experience. For the affective experience of first romantic relationship, findings were actually opposite to the predictions of the early timing hypothesis, in that adolescents who experienced this transition before most of their friends rated it as more positive than those in the other timing groups. For trying drugs, early timing was not related to the affective impact of the transition.

Partial support for the off-time hypothesis was also found in the timing effects of these two transitions, although some of the findings from the tests of the off-time hypothesis actually supported the early timing hypothesis or were not in keeping with either hypothesis. In terms of affective ratings, for both first relationship and trying drugs, the late groups rated these experiences as less positive than either the on-time or the early groups. On first relationship, the early group rated the experience as more positive than the on-time group, while there were no differences between the early and on-time groups on trying drugs. As noted above, the finding that the early occurrence of these transitions is experienced as more positive is not in keeping with either of the timing hypotheses. However, the finding that the late groups experienced these transitions as less positive offers partial support for the off-time hypothesis.

Findings on ratings of importance indicated that adolescents who had a first relationship and tried drugs before most of their friends rated this experience as more

important to their identity than those who were late on these transitions. For trying drugs, those who were early also rated this transition as more important than did those who were on time, but this was not the case for importance of first relationship, on which the early and on-time groups did not differ. The late groups did not rate the importance of either of these transitions any differently than the on-time group. Therefore, the early timing hypothesis seems to better account for the timing effects on the importance of these transitions than the off-time hypothesis.

In sum, results for the three transitions which showed timing effects could not be fully accounted-for by either of the timing hypotheses. The exception to this was the finding that adolescents who were out-of-synch with their peers on the experience of first love showed higher levels of current distress, in keeping with the off-time hypothesis. Experiencing a relationship and trying drugs before most of one's peers was related to viewing these events as more important to identity than when they were not experienced early, but the early occurrence of these events was not related to having a more negative experience, as the timing hypotheses would predict. In the case of first love and having a first relationship, the opposite was true, in that those who were early on these events actually rated them as more positive. In the case of trying drugs, experiencing the transition early was not related to how positive or negative the experience was. Being late in having a first romantic relationship or trying drugs was also related to experiencing each transition as less positive, in keeping with the off-time hypothesis, but

those who were late did not rate these events as any less important than those who were on time.

Findings for the remaining three transitions, puberty, first intercourse and getting drunk for the first time, did not show any timing effects at all. That is, adolescent experiences of these transitions in terms of importance and affect did not differ based on whether they were early, on time, or late on the given event. Nor did the timing of any of these transitions predict current distress in adolescents.

In the case of getting drunk for the first time, the timing of this transition has not previously been examined, except for studies indicating that the early occurrence of drinking is related to later substance use (e.g., Newcomb, 1996). Therefore, while the two timing hypotheses tested herein would predict that experiencing drinking early or out-of-synch with one's peers would be problematic, there was no research precedent on which to base the expectation that getting drunk for the first time would show timing effects on any of the outcome measures included in this study.

In contrast, timing effects *had* previously been found in the other two transitions that did not show timing effects in the current study: puberty and first intercourse. While earlier studies had not examined the impact of the timing of these events on how they are experienced, several studies have found a relation between negative psychosocial outcomes and experiencing puberty early (e.g., Caspi & Moffit, 1991; Duncan, Ritter, Dornbusch, Gross, & Carlsmith, 1985; Ge, Conger, & Elder, 1996, 2001a; Graber et al., 1997; Silbereisen & Kracke, 1997) or late (e.g., Andersson & Magnusson, 1990;

Silbereisen & Kracke, 1997). Similarly, a number of studies have established correlations between early or late initiation of sexual intercourse and a number of psychosocial deficits (e.g., Bingham & Crockett, 1996; Tubman, Windle, & Windle, 1996). Therefore, while timing effects have not been found consistently in the literature, the current findings that the timing of puberty and first intercourse were unrelated to the measure of functioning were unexpected.

Reasons for the discrepancy between the findings of the current study and the existing literature may be related to aspects of the methodology. The method of making timing classifications in this study may have resulted in less sensitivity to timing effects than methods employed in other studies. The finding that the age of onset of sexual intercourse was not significantly different between the "on-time" and either the "early" or "late" groups suggests that may have been the case for first intercourse, although the early group was significantly younger than the late group. In addition, the fact that this was the only transition for which the majority of adolescents reported that they were early, rather than on time, meant that self-perceptions of timing on this transition led to a different distribution within the timing categories than if traditional methods for timing classifications had been used. Timing effects might have been evident on this transition if a greater proportion of the sample had experienced intercourse, but to test this would have required a young adult sample, which was beyond the scope of the current study.

The above explanation would not account for the lack of effects of pubertal timing, since the vast majority of adolescents in the current study had experienced this

transition. Moreover, timing effects *have* been found using adolescent self-perceptions of timing as a means of categorization (e.g., Silbereisen & Kracke, 1997), which suggests that other factors may be responsible for the discrepancy of the current findings for puberty compared with the existing literature. One possibility, as discussed earlier, is the difference in how puberty was assessed in the current study. Validation of the ATQ in an adolescent population would address this issue, and this is one suggestion for future research. Another possibility is that timing differences might have been apparent using different measures of outcome. In the study that follows, functioning following a transition is assessed using multiple indices in order to account for this possibility.

The results indicating that puberty and first sexual intercourse did not show timing effects in the current study are nonetheless significant. First, the lack of timing effects for these two transitions supports some previous studies that have failed to find timing effects for puberty (e.g., Angold et al., 1998) and first sexual intercourse (Bingham & Crockett, 1996) on measures of psychological adjustment. Secondly, results of the current study are significant because they address the supposition that experiencing puberty or sexual intercourse early or off-time makes these events more stressful compared to when they are experienced at the same time as ones' peers. This study was designed to test this assumption and found it not to be the case, given that puberty and first intercourse were not experienced any differently when these events were perceived to occur early or late.

Section Three: Sequencing of Transitions

Results

The Typical Sequence of Three Transitions. The order of occurrence of three transitions, First Relationship, First Love, and Losing Virginity, were examined to determine whether there was a typical sequence to these events in the current sample of adolescents. Hypothesis 12 predicted that the majority of adolescents would experience a romantic relationship and then fall in love, following which onset of sexual intercourse would occur. In order to determine whether this was in fact the typical sequence for the three transitions, the first step was to examine the extent to which three pairwise sequences occurred. The expected pairwise sequences included: First Relationship then First Love; First Relationship then Losing Virginity; and First Love then Losing Virginity. The numbers and percentages of participants that experienced each of these pairs of transitions in the expected order, at the same time (i.e., within 12 months of each other), and out of the expected sequence, are presented in Table 10.

As shown in Table 10, pairwise comparisons clarified that transitions did not occur according to the expected sequences in two out of three instances, specifically with respect to the occurrence of First Love. In considering the order of First Relationship and First Love, the most common pattern was for these transitions to occur at the same time, that is, within 12 months of each other. When considering the order of First Love and Losing Virginity, participants were almost equally likely to experience these transitions in either order or simultaneously, indicating that there may not be a "typical" sequence

Table 10. Numbers and Percentages Following Pairwise Sequences of Three Transitions, in Study 1.

	In Sequence		Same Time		Out of Sequence	
Transition Sequence	n	Percentage	n	Percentage	n	Percentage
First Relationship, Then First Love	86	31.2	122	44.2	68	24.6
First Relationship, Then Losing Virginity	65	52.4	37	29.8	22	17.7
First Love, Then Losing Virginity	39	33.9	41	35.7	35	30.4

where these two transitions are concerned. First Relationship and Losing Virginity did occur in the expected order for the majority of participants (52%), although almost one third of participants experienced these two transitions within 12 months of each other. The conclusion from these pairwise comparisons was that the typical sequence for this sample was First Relationship, followed by Losing Virginity, with no specific expectation about when First Love would occur.

The Impact of Disruptions to the Typical Sequence. Having confirmed the typical sequence for two of the three transitions, the impact of experiencing a transition out of order in that sequence was examined. It was predicted that individuals who experienced a transition out of order would report higher levels of current distress and a more negative impact for the transition that occurred out of order compared with those who followed the typical sequence (Hypothesis 13). To test this hypothesis, participants who had experienced first intercourse before a significant romantic relationship ($n = 22$) or in the absence of a significant relationship ($n = 2$) were categorized as the "Disrupted" group (total $n = 24$). Participants who had first intercourse after they had experienced a romantic relationship ($n = 65$) were assigned to the "Typical" group. Independent samples t-tests were then conducted to compare the two groups on the measures of the experience of Losing Virginity and on Current Distress.

Results partially supported the hypothesis, in that the measures of the experience, but not current distress, differed between the Disrupted and Typical groups. The Affective Impact of Losing Virginity differed between the two groups, t (33.8) = 4.83, p

< .001, with the Disrupted group reporting a more negative experience of the transition ($\underline{M}$ = 2.33) than the Typical group ($\underline{M}$ = 4.71). Importance also differed between the groups, $\underline{t}$ (87) = 3.00, $\underline{p}$ < .01. However, this was not in the predicted direction, with the Disrupted group rating Losing Virginity as less important ($\underline{M}$ = 3.17) than the Typical group ($\underline{M}$ = 4.51). Distress did not differ between the two sequencing groups. Therefore, adolescents for whom onset of intercourse preceded experiencing a romantic relationship rated losing their virginity as more negative and less important than those for whom these transitions followed the typical sequence.

Discussion

The Typical Sequence of Three Transitions. In the third part of the current study, the sequencing of three adolescent transitions was examined, as well as the impact of experiencing transitions out of the typical sequence. To do so, it was first necessary to establish whether the three transitions of interest, all of which related to interpersonal intimacy, were experienced in a particular order in the majority of adolescents in the current sample. It was predicted that most adolescents would follow the sequence of having a first romantic relationship, then falling in love, and then having sexual intercourse for the first time. To test this prediction, the order in which adolescents tended to experience each pair of these transitions was examined. For example, the frequencies with which adolescents experienced a first romantic relationship before, at the same time, or after falling in love for the first time were documented. Extrapolating from the expected sequence, it was predicted that for most adolescents a first relationship

would occur before first love, first love would occur before first intercourse, and a first relationship would occur before first intercourse.

Based on the percentages of adolescents who had experienced these pairs of transitions, the above predictions were not supported in two out of the three pairs of transitions. Specifically, first love did not occur in the predicted order with respect to either of the other two transitions. First relationship and first love occurred within 12 months of each other for most adolescents (44%), rather than relationship occurring at a younger age than love (31%), as had been hypothesised. Similarly, with respect to first love and first intercourse, adolescents were about as likely to experience first love and first intercourse within 12 months of each other (36%) as in either order of precedence. That is, while it was predicted that the majority would experience first love before first intercourse, only 34% of adolescents in the current study did so, and an almost equal percentage (30%) experienced first intercourse before first love. Only on the remaining pair of transitions, relationship and intercourse, did the majority of adolescents follow the expected sequence, with 52% indicating that the age at which they experienced a first relationship was younger than the age at which they lost their virginity.

Based on these comparisons, it was concluded that while most adolescents in this sample tended to experience a romantic relationship before first intercourse, there is no typical sequence when it comes to the experience of first love in relation to the other two transitions. One possible explanation for the finding that love does not show a typical sequence compared to these transitions is that individual definitions of first love may

vary. This possibility is supported by the observation that, of the three transitions, first love was the one with the highest variability in age, as illustrated by the standard deviation for the age occurrence of this transition. The standard deviation for age of first love approached 3 years, even when extreme outliers were excluded, as compared to losing virginity and first relationship, both of which had standard deviations in age of occurrence of less than two years.

These findings suggest the possibility that an individual's definition of first love may change with time or experience. For some, first love may be independent of a reciprocal romantic relationship, while for others a relationship may be the necessary context for the experience of love, and similarly for the interrelation between love and first sexual intercourse. Whatever the case, love is clearly a highly subjective phenomenon, the occurrence of which may not conform to normative expectations about sequencing with other intimate interpersonal relationships.

Impact of Disruptions to the Typical Sequence. Once the typical sequence for first relationship and first intercourse was established, it was possible to examine whether the impact and experience of these transitions were related to the order in which they occurred. The prediction that individuals who experienced a transition out of sequence would experience that transition as more negative than those who followed the typical sequence of events was supported. Individuals who experienced intercourse prior to, or in the absence of, a romantic relationship reported that losing their virginity was a significantly more negative experience than those who followed the typical sequence,

who on average rated it as a positive experience. However, contrary to expectations, the sequencing of these two transitions did not predict adolescents' current levels of distress. Therefore, while individuals who experienced the transitions out of sequence reported that losing their virginity was a more negative experience, this did not appear to affect their current levels of functioning.

Those who lost their virginity without having had a romantic relationship also rated first intercourse as a less important event to their identity than those who followed the typical sequence. That is, adolescents who had a first romantic relationship before losing their virginity rated first intercourse as far more positive and more important to their identity than did those who did not follow the typical sequence.

There are several possible explanations for the findings on these three measures of outcome. One possibility is that the impact of perceiving first intercourse as a negative experience when it occurs out of sequence is mitigated by minimizing the importance of this event. This would account of the finding that distress was not associated with the sequencing of these transitions. That is, perhaps current functioning was not affected by the disrupted order because those individuals who do not follow the typical sequence downplay the importance of losing their virginity. Conversely, it may be that believing that the onset of sexual intercourse is not important to one's identity makes adolescents less selective about the context in which they lose their virginity. Such individuals might thereby be less likely to seek a romantic partner with whom to share this experience, possibly accounting for the finding that the event leaves a less positive impression.

One important consideration regarding the sequencing of such events is whether a subset of adolescents who were included in the disrupted group were the victims of sexual assault. This would account for the finding that the affective ratings for first intercourse for this group were lower than typical sequence group. However, one might predict that such individuals would also rate first intercourse as more important to their identities, and perhaps also report higher levels of current distress, neither of which were the case. Nonetheless, this possibility cannot be discounted and warrants further investigation.

Whatever the mechanism behind these findings, the current study is the first to test the prediction that experiencing a transition out of the typical sequence is associated with some degree of difficulty in adolescence. This hypothesis was supported, in that adolescents who have not experienced a romantic relationship before having sexual intercourse generally perceived losing their virginity as a negative experience, while those who follow the typical order had a positive experience. In addition, the finding that experiencing a disruption to the typical order of these transitions was related to believing that losing virginity is less important to adolescents' identities may have important implications for prevention efforts with adolescents who are at risk.

Theoretical Implications

The current study clarified when and how a number of transitions are experienced by adolescents, which aspects of the occurrence of transitions may be more problematic, and how to identify which adolescents might be at risk on the basis of these findings. In

doing so, several unique contributions have been made to the literature on adolescent development, which are summarized in this section.

First, 10 adolescent milestones were identified, and details related to their occurrence were examined. Items were selected based on a working definition of transitions, and results confirmed that these events are normative during adolescence. Feeling respected by one's peers was the earliest occurring transition of those that were examined in the current sample of adolescents, and having sexual intercourse was the latest. Only one transition showed a gender difference in age of occurrence, feeling respected by one's peers, which tended to occur on average a full year earlier for boys than for girls. More boys than girls had tried drugs in the current study, and slightly more girls than boys had experienced feeling that no one understood them.

Second, the current study is the only one that has examined how adolescents actually experience a number of developmental milestones. The experience of transitions was examined along two dimensions: affective and importance to identity formation. In keeping with predictions based on developmental theory, transitions in the domains of intimate relationships and individuation were rated as the most positive and the most important to adolescents' identities. Results also showed that substance use transitions were the least important to identity, while transitions related to rejection and alienation were the most negative experiences. Boys rated the experiences of puberty, losing virginity and getting drunk more positively than did girls, and boys also rated puberty and getting drunk as more important to their identity than girls did.

The third major contribution of the current study was to assess the effects of timing of six transitions using an idiographic methodology. The vast majority of studies investigating timing effects have relied on a nomothetic approach for making timing classifications, in that adolescents' ages at the time of transition relative to the sample distribution or an arbitrary cut-off point are used to classify them as early, on-time, or late on that event. In the current study, the validity and utility of using adolescents' self-perceptions of timing, or the idiographic approach, for categorizing adolescents into timing groups was demonstrated. The validity of this methodology was demonstrated in results indicating that adolescents' self-perceptions of timing generally corresponded to where they fell on the distribution relative to others who had experienced the event, and that the majority of adolescents classified themselves as on-time on all but one of the transitions.

The utility of this methodology was demonstrated in the finding that, on each of the transitions, as many as one quarter of adolescents were uncertain about their timing compared to their friends. This finding casts doubts on conclusions from studies that have used the traditional methodology for making timing classifications, which involves categorizing adolescents according to criteria that are often arbitrary. With the possible exception of difficulties associated with early timing of puberty in girls, such studies have generally not found consistent timing effects on any transition. One reason for this inconsistency may be that participants' own perceptions of their timing are not taken into

consideration, and participants who themselves are not aware of their timing on a given transition are nonetheless categorized as early, on-time or late.

Three out of the six transitions examined, first love, first romantic relationship and trying drugs, showed timing effects, but results did not fit well with expectations set forth by either of the existing hypotheses about timing. Specifically, it was found that early timing was associated with a more positive experience of first love and first romantic relationship, but was not related to the affective impact of trying drugs. To a limited extent, some results fit with the early timing hypothesis, in that the early experience of either a romantic relationship or trying drugs was associated with perceiving these transitions as more important to one's identity. However, the early timing hypothesis is based on the assumption that the early occurrence of transitions is more stressful or somehow negative, and clearly this is not the case, because the early-occurrence of these transitions was not rated as more negative.

Other results could be partially accounted for by the off-time hypothesis, including the finding that the late occurrence of a first relationship and trying drugs were rated as less positive than when these transitions occurred on time or early. However, adolescents who experienced these transitions late did not rate them as any more or less important than those who experienced them on time, which does not fit with the hypothesis that being out-of-synch with one's peers is more stressful.

In sum, neither the early timing nor the off-time hypotheses account for timing effects of the experience of adolescent transitions in any of the six transitions examined.

Instead, the subjective experience of transitions may be better explained by the gradual consolidation hypothesis (Alsaker & Olweus, 1992), which proposes that individuals' self-concepts consolidate with age. From this theory comes the prediction that experiences that occur earlier in adolescence will have a greater impact than those that occur later, without the assumption that early-occurring transitions are more stressful. While the implications of this theory have not been directly tested to my knowledge, this hypothesis would account for the finding that having a first romantic relationship and trying drugs were experienced as more important and more positive when they occurred early versus late. It also accounts for the finding that first love was experienced as more positive by those who experienced this event early. The second study in the current research was specifically designed to test the prediction, based on the gradual consolidation hypothesis, that events that occur earlier in adolescence will have a greater impact.

A fourth contribution of the current study was to examine the typical sequence of three transitions related to interpersonal intimacy, and the effects of experiencing one of these out of sequence. Results indicated that experiencing a romantic relationship prior to losing virginity was the typical sequence for adolescents in this study. Experiencing these transitions in the reverse order, or losing virginity in the absence of ever having had a romantic relationship, were thereby considered violations of the typical sequence. Adolescents who violated the typical sequence rated onset of sexual intercourse as a negative event, while those who followed the typical sequence rated this transition fairly

positively. In addition, adolescents who lost their virginity without having had a romantic relationship rated first intercourse as less important to their identity than did those who followed the typical sequence. Therefore, results demonstrated that certain adolescent transitions tend to occur according to expected sequences, and that adolescents' experiences of transitions differ depending on whether they follow this sequence or not.

The final major contribution of the current study was to predict risk for functional difficulties based on the impact of transitions. The occurrence of all but two transitions included in the current study was related to higher levels of distress in adolescents. Having ever been in love, dumped, drunk, having had sexual intercourse, hit puberty, tried drugs, not felt understood, and made a major life decision independently were each related to increased distress, and therefore constituted risk factors for functional difficulties in adolescents. Only the occurrence of being respected by one's peers and having a first romantic relationship did not predict current distress. It was also found that experiencing first love either before or after most of one's friends was related to increased distress in adolescents. The latter was in keeping with the off-time hypothesis, which predicts that individuals who experience a transition out-of-synch with their peers will have greater functional difficulties. The sequencing of transitions in the domain of interpersonal intimacy was unrelated to current distress.

Several aspects of this study limit the generality of findings. First, because of the relatively low participation rate, adolescents who were included in this study might have

differed from those who were not on a number of variables about which one can only speculate. Second, as with any study that is not prospective, results must be interpreted with caution because of the concern about retrospective bias. That is, it is unclear to what extent adolescents remembered the age or impact of such events with accuracy. An effort was made to reduce this threat by restricting the current study to adolescents' reports on experiences that occurred during adolescence. However, the only way to truly avoid retrospective bias would be to study the impact of transitions prospectively, and Study 2 was designed as a prospective study of transitions for this reason.

Other limitations of this study relate to the use of a new measure, the Adolescent Transition Questionnaire (ATQ), for assessing the occurrence and impact of transitions. Because the ATQ was developed for use in the current study, its psychometric properties have not been examined. Therefore, questions about the reliability of this measure and the validity of responses obtained have not yet been addressed. Of particular concern with respect to its reliability is whether responses show consistency over time, and how maturational processes change individuals' perspectives on their experiences of such events.

Regarding the validity of the ATQ, the finding that the range in age of occurrence for most of the transitions had unexpectedly young minimums requires further investigation. One reason for this may be that a few participants interpreted the transition items differently than was intended. For example, the item "the first time I fell in love" was intended to assess romantic love. However, it might have been interpreted by some

to include love such as one would feel for a family member, explaining why a few participants reported very young ages for this transition. While I attempted to account for this unexpected finding after the fact by eliminating outlying cases, validation of the ATQ in an adolescent population is necessary to clarify the reasons for these results, and resolve this issue in future studies.

In spite of these limitations, the purpose of this study was, first and foremost, exploratory. The development of the ATQ allowed for assessment of important developmental transitions and provided a means of measuring adolescent experiences of these events along two meaningful and distinct dimensions. The experience of most of these adolescent transitions had not previously been documented. To do so has challenged the assumptions that transitions are stressful, and that transitions are experienced more negatively when they occur early. In addition, this study established that the use of self-perceptions of timing on transitions is a valid means for categorizing adolescents as early, on-time or late. Such categorizations are related to meaningful differences in how transitions are experienced and, in the case of first love, to current functioning in adolescence. Finally, this study tested the assumption that transitions occur according to developmental sequences, and found not only that this is true, but also that experiencing a transition out of sequence is related to a more negative experience. Therefore, results from the current study offer a starting point for understanding the differences between the experiences and impact of adolescent transitions, and how factors related to timing and sequencing affect their outcome.

Chapter 3

Study 2: A Prospective Study of Two Academic Milestones

This study was designed to prospectively examine the experience and impact of two academic milestones in middle and late adolescence: the transition to high school and the transition to post-secondary education[7]. Like all transitions, academic milestones have been conceptualised as challenges, which offer an opportunity for growth but can also be disruptive if they are not negotiated well (e.g., Schulenberg, Maggs & Hurrleman, 1997; Seidman, Aber, Allen & French, 1996).

The choice to examine the effects of academic transitions was made for three important theoretical reasons. First, the timing of such events can be precisely predicted (Elias, Gara, & Ubriaco, 1985), allowing for assessment before, immediately following, and several months after the occurrence of each transition. This timeframe was necessary in order to test the *stressful change hypothesis*, which predicts that functioning and self-evaluations will decline soon after a transition, and then return to pre-transition levels after a period of adjustment.

The second reason for choosing to study academic milestones was that they allow for prospective examination of the co-occurrence of other transitions and ensure that any additional transitions will occur in different (i.e., non-academic) domains. The *multiple transition hypothesis* predicts that the outcome of transitions is affected by the

[7] While the experience of students entering post-secondary education was of interest in general, the majority of participants in the current study who finished high school went on to university as opposed to other post-secondary institutions. This experience is therefore referred to as the transition to university throughout this study.

simultaneous occurrence of other transitions. Because the occurrence of academic milestones is externally controlled, any additional transitions occurring at the same time as the school change would be in a different domain. This is significant because the risk associated with multiple stressors is greater when simultaneous changes occur in different domains (Simmons, 1987; Simmons, Burgeson, Carelton-Ford, & Blyth, 1987), allowing for further precision in predicting difficulties in the current study.

The final reason for selecting academic milestones as the model for understanding the impact and experience of transitions was that such events take place at different points during adolescence, allowing for cross-sectional comparisons of their impact. The current study was designed to test the *gradual consolidation hypothesis*, which predicts that transitions will have a greater impact on younger versus older adolescents. One cannot assume that the two academic transitions investigated here, starting high school and university, have equivalent effects. However, it was predicted that as transitions, they would be experienced similarly, and this prediction was then tested. Knowing to what degree the two transitions are experienced as similar allowed for comparisons between younger and older adolescents on the impact and experience of these events.

The Experience of Academic Transitions

While an extensive literature exists on the impact of academic milestones, very few studies have directly investigated adolescents' impressions of these events, and how their perceptions relate to functioning following the transitions. Berndt and Mekos (1995) examined what students liked and disliked about starting junior high school over

the transition, from the spring in the pre-transition school to the spring following the transition. They found that adolescents tended to make more positive than negative comments across the academic change, leading the authors to conclude that adolescents generally experienced this transition as more desirable than stressful. They also found that the kinds of concerns that adolescents expressed changed over the transition, with a shift from a focus on peer relations prior to the transition, to academic concerns following the transition. In addition, pre-transition functioning was found to moderate perceptions of starting junior high school in this study. This effect was such that adolescents who engaged in greater levels of misconduct prior to changing schools had fewer negative expectations about the transition. Following the transition, however, they perceived the new school less positively compared to other students. In contrast, students who were high achievers prior to starting junior high expressed more worries about the transition before they changed schools, but then viewed the new school more positively after the transition.

A study by Seidman and colleagues (1996) is one of the few to include adolescents' impressions of the transition from *junior to senior* high school in examining outcomes following an academic milestone. This study found that higher perceptions of academic demands or hassles were related to lower expectations of academic efficacy and grades. This study is also noteworthy in its inclusion of adolescent perceptions of a transition and how these were related to multiple indices of functioning over the course of an academic milestone.

Using the study by Seidman et al. (1996) as a model and starting point, the current study sought to further investigate adolescents' impressions of the transition to high school, and how these related to functioning. One unique contribution of the current study was to simultaneously examine adolescents' impressions of another important academic milestone, starting university. This allowed for comparisons of the experiences of two transitions in the academic domain in middle and older adolescents, and an investigation of whether such experiences were related to different aspects of functioning in the two age groups.

While the focus of the current study was on academic transitions, these were used as a model for testing and understanding the experience of transitions overall. The first step in the current study was to investigate whether adolescents actually experienced the school change as a transition. Although starting high school and university are traditionally thought of as developmental transitions, no study has documented whether adolescents who were going through these experiences themselves considered them to be transitions. In the current study, it was expected that the majority would (Hypothesis 1).

Adolescents' impressions of the academic milestones were then investigated on a number of dimensions. In Study 1, the experience of transitions was conceptualized and measured along two dimensions: affective impact and importance to identity. In the current study, these measures of experience were expanded upon by adding three other dimensions. The first additional dimension was designed to tap into how prepared adolescents were for the academic change, and accordingly, the degree to which each

transition matched with adolescents' expectations was assessed. Second, given that transitions are thought to be developmental milestones that mark the emergence of adulthood (e.g., Arnett, 1998), the extent to which academic milestones actually made adolescents feel more like adults was examined. Finally, while many studies of the impact of transitions on functioning assume that they are stressful, the degree to which adolescents actually experience either of these events as stressful had not been assessed. Therefore, the third additional measure of the experience of starting high school or university was a rating of how stressful the transition was overall.

It was predicted that the experience of the two transitions, as measured on each of the dimensions described above, would not differ significantly. That is, adolescents experiencing the start of high school and those starting university were not expected to differ in their ratings of the affective impact, importance, match with expectations and degree to which the transition made them feel like an adult (Hypothesis 2). The only dimension on which differences were predicted between the two groups was stress related to the transitions, with the expectation that the transition to university would be more stressful than the transition to high school (Hypothesis 3). This prediction was based on the expectation that leaving home for the first time, a transition which co-occurs with the start of university for many adolescents, would be related to higher stress than remaining at home at the time of starting university (Hypothesis 4).

The Impact of Academic Transitions over Time

Although academic milestones have been amongst the most frequently investigated developmental transitions, research efforts have largely focused on the transition to junior high school. Studies on the transition to senior high school and university have recently become more common. However, there is little mention of the regional and international differences in school systems, which makes it difficult to conclude that findings for one school system will be applicable to another. For example, many of the recent articles reporting on the effects of the transition to high school studied school systems in which students made the transition directly from elementary school to a high school, sometimes to the same school as all their classmates in the pre-transition setting (e.g., Isakson & Jarvis, 1999; Reyes, Gillock, Kobus & Sanchez, 2000; Wallis & Barrett, 1998). Results from these studies are often mixed with evidence from studies that examine the transition to high school in other school systems, in which the transition to senior high school has been preceded by a transition to a large and often anonymous junior high school (Seidman et al., 1996).

While it is difficult to make general conclusions about the impact of academic transitions as a result of these differences, some trends are evident. First, there are more negative psychosocial outcomes associated with the start of junior high school than with later academic transitions (cf. Seidman et al., 1996). While a number of difficulties have been attributed to starting senior high school, including decreased self-esteem and increased feelings of anonymity (e.g., Simmons & Blyth, 1987), the only decline in

functioning that has consistently been found to occur with later school transitions is a drop in academic functioning (e.g., Brablc, 1993/1994; Costin, 1994/1995; Reyes et al., 2000; Simmons & Blyth, 1987; Seidman et al., 1996). In spite of the fact that declines have not consistently been found following later academic transitions, there is a persistent belief that starting high school and university are experienced as stressful events. These transitions are generally thought to cause short-term functional difficulties, which may lead to longer lasting deficits in vulnerable individuals.

In the current study, multiple indices of functioning were assessed over time in order to investigate how aspects of adolescent functioning compared from pre-transition to one month after the transition, and from both these times to six months post-transition. The use of several outcome measures allowed for investigation of whether certain aspects of the adolescent self were more or less vulnerable to the transition than others (Alfeld-Liro & Sigelman, 1998; Simmons & Blyth, 1987). The choice of this time frame was made based on the reasoning that adolescents would not have had time to adjust to their new school environment at one month after the transition, and on research indicating that starting college requires a 6-month period of adjustment for the transition to be completed successfully (Compas, Slavin, Wagner, & Vannatta, 1986).

Outcome measures were selected for this study such that they would represent the adolescent self-system in the domains of affective, cognitive, and behavioural functioning (Seidman et al., 1996). For the affective dimension, a measure of current distress was used, while a measure of general self-concept compared to others was selected to assess

impact in the cognitive domain. As the measure of behavioural impact, academic performance was examined. Ideally, students' average grades would have been used as the measure of academic performance, if the design of the study had not precluded this. That is, because testing of the stressful change hypothesis required that functioning be assessed soon after the transition, when students would not yet have received their grades, this was therefore not an option for measuring functioning immediately after the transition. Instead, adolescents' estimation of their current performance compared to the previous year was assessed both immediately after the transition and again after the first term in the new school. Because students did not have a great deal of objective information on which to base their report of their academic performance in the month following the transition, this rating was considered a measure of domain-specific (i.e., academic) self-competence.

Because existing research has not yielded consistent results in terms of how academic transitions affect functioning, predictions were made based on the theory that change is temporarily stressful and will lead to short term perturbations in functioning. In keeping with the stressful change hypothesis, it was expected that most individuals would experience declines in functioning soon after the transition, and then return to pre-transition levels after they had been in the new school setting for one full term. That is, it was predicted that both academic transitions would lead to a decline in self-concept and perceived competence in school, and an increase in distress, after one month post-transition (Hypothesis 5). It was further expected that these indices of functioning would

increase in the period after the transition, to return to their pre-transition levels once adolescents had adjusted to their new environments 6 months later (Hypothesis 6). While the expectation was that the analysis over time would reveal which aspects of adolescent functioning were more or less vulnerable during the academic change, specific predictions were not made about which aspects of functioning would be more affected by the transition.

Based on the evidence that grades decline following academic milestones, this was the only index of functioning that was expected to show longer-term effects after both academic transitions. As such, it was predicted that grades would drop from pre-transition to six months post-transition (Hypothesis 7).

The Co-Occurrence of Other Transitions as Moderators of Impact over Time

One criticism of the existing literature on transitions is that the occurrence or impact of a transition is frequently studied in isolation of other events taking place during adolescence. Graber and Brooks-Gunn (1996) stress "models have had the best predictive ability when they have included a major transition in combination with other events or have considered stressors that have particular salience to adolescence"(p.771). Studies documenting declines in functioning when stressful events occur at the same time as a transition indicate that adolescents have more difficulty coping when there are simultaneous changes in different domains (Compas et al., 1986; Simmons, 1987; Simmons, Burgeson, Carelton-Ford, & Blyth, 1987). Such findings have lead to the

prediction of increased risk with co-occurring transitions, referred to as the multiple transition hypothesis (Ge, Conger & Elder, 2001a).

The few studies investigating the effects of co-occurring transitions have only examined the impact of puberty simultaneously occurring with one other transition, such as an academic milestone (e.g., Simmons, 1987; Simmons & Blyth, 1987). This research has concluded that adolescents who experience co-occurring transitions show functional difficulties in a number of areas, including lower self-esteem, poorer academic functioning, higher depressive affect, and unhealthy eating behaviours (Cauffman & Steinberg, 1996; Petersen, Sarigiani & Kennedy, 1991; Simmons, Burgeson, Carlton-Ford and Blyth, 1987; Simmons, 1987; Simmons and Blythe, 1987). The fact that puberty has always been one of the transitions used to examine this effect has meant that the impact of simultaneously occurring transitions has only been studied in early adolescence. One possible exception to this, reviewed earlier, was the study by Koenig & Gladstone (1998), which examined the co-occurrence of the later stages of puberty with the transition to high school or university. Results from this study also supported the multiple transition hypothesis in that dysphoria was shown to be higher when girls experienced pubertal changes simultaneously with either academic change. However, the experience of the later stages of puberty does not clearly conform to the criteria of an adolescent transition as defined in the current research.

Because all existing studies of the multiple transition hypothesis have included puberty as one of the transitions of focus, it is unclear whether this effect is due to the

occurrence of multiple transitions per se or specific to pubertal changes. In the current study, it was hypothesized that experiencing co-occurring transitions simultaneously with an academic change would predict longer-term difficulties compared to when other transitions did not co-occur. That is, it was expected that co-occurring transitions would moderate the change in distress, self-concept, and perceptions of academic competence, from one month to six months post-transition (Hypothesis 8).

Another theory about the impact of transitions may also be related to the co-occurrence of these events. Because a greater number of transitions have been shown to occur during early compared to later adolescence (cf. Graber & Brooks-Gunn, 1996) it may be that this confluence of events is responsible for the observation that individuals' self-concepts consolidate over adolescence, referred to as the gradual consolidation hypothesis (Alsaker & Olweus, 1992). That is, the greater instability in younger adolescents' self-perceptions may be the result of all the numerous changes, which occur during this phase of development. Alternatively, it may be that younger adolescents are inherently more vulnerable to the impact of stressors than older ones.

The current study tested the implication of the gradual consolidation hypothesis that younger adolescents will be more vulnerable than older ones to the effects of stressors. In addition, this study is unique in that it was designed to test whether the co-occurrence of transitions had a greater impact in middle versus older adolescents, and therefore whether this effect could account for a greater vulnerability in the younger group. It was expected that middle adolescents, who would have had less experience

with academic milestones than the older group, might be more vulnerable in domain-specific (i.e. academic) self-competence. That is, it was hypothesised that the presence of co-occurring transitions at the time of making an academic transition would predict a greater decline in academic competence in the younger versus the older group (Hypothesis 9).

Summary of Objectives and Hypotheses for Study 2

Objective 1: Examine the experience of two academic transitions. Hypothesis 1: The majority of adolescents who make the transition to high school or university will consider the event a transition. Hypothesis 2: Adolescents starting high school will not differ from those starting university in their experience of the academic transition on the following dimensions: affective impact, importance, match with expectations and degree to which the transition made them feel like an adult. Hypothesis 3: The transition to university will be experienced as more stressful than the transition to high school. Hypothesis 4: Adolescents who leave home for the first time at the same time as starting university will report higher stress levels than those who do not.

Objective 2: Document the impact of the transition to high school and university over time. Hypothesis 5: Adolescents will experience a decline in self-concept and perceived competence in school, and an increase in distress, one month after the transition to the new school setting. Hypothesis 6: Self-concept, perceived competence in school, and distress will return to pre-transition levels following completion of the first

term in the new school. Hypothesis 7: A drop in academic grades will be evident six months after the transition to high school or university.

Objective 3: Investigate whether the co-occurrence of transitions predicts prolonged difficulties following a transition. Hypothesis 8: The co-occurrence of transitions will moderate changes in functioning from one month to six months after the academic transition, such that adolescents who experience transitions concurrently with an academic milestone will demonstrate increased distress, and decreased self-concept and academic competence, compared to those who do not experience concurrent transitions.

Objective 4: Test the gradual consolidation hypothesis, and whether the co-occurrence of transitions may have a greater impact in middle versus older adolescents. Hypothesis 9: Co-occurring transitions will have a greater impact on academic self-concept in younger versus older adolescents, in the period following an academic milestone.

Method

Participants

Participants were students enrolled in either Grade 9 or Grade 12 in schools that were located in the Greater Halifax area in Nova Scotia, Canada. Schools were selected on the basis of being willing to allow brief classroom presentations about the study by the primary investigator. Students were recruited from three public junior high schools (Grades 7-9), one public senior high school (Grades 10-12), from a Grade 12 class of a

private school (Grades 1-12), as well as through word of mouth. Five-minute presentations were made for the purpose of participant recruitment, outlining the study's purpose and what participation would entail. Students who expressed an interest in participating were given packages with further information on the study, detailed consent forms for themselves and their parents to read and sign, and a stamped envelope in which to return the consent forms. An initial meeting was held at the university once consent forms were received.

Due to recruitment procedures, it is unfortunately impossible to calculate the participation rate based on the number of students who were informed about the study. School administrators often arranged for classroom presentations in elective classes resulting in some eligible participants hearing about the study more than once, and some not at all. It should be noted that results of this study are therefore not necessarily generalizable to students making the transition to senior high school or university in general.

A total of 89 participants were included in the study, of which 48 were in their last month of junior high school and 41 were in their last month of senior high school at the onset of the study. Because these two groups were about to make school transitions, they are referred to henceforth as the "High School" and "University" samples, respectively. The average age of participants was 16.12 years (SD = 1.58 years), ranging from 14 to 19 years, at the onset of the study. Approximately 10 months later, in the last phase of the study, the average age of the group was 16.70 years (SD = 1.61 years), and

ranged from 15 to 20 years. In the High School sample, the average age was 14.77 years (SD = .56 years), with a range from 14 to 16 years at the onset of the study; by the end of the study, the High School sample's average age was 15.33 years (SD = .60 years), ranging from 15 to 17 years. In the University sample, the average age was 17.71 years (SD = .60 years), with a range from 17 to 19 years; the University sample averaged 18.29 years of age (SD = .64 years) with a range of 17 to 20 years by the end of the study. There were slightly more female (n = 46) than male (n=43) participants in the study.

In terms of demographics, the large majority of participants identified themselves as Caucasian (86.5 %). Participants tended to speak English as their first language (85.4 %) and speak English at home (89.9 %). At the onset of the study, all but four participants lived with at least one parent (95.5 %). The four participants who did not live with at least one parent at the start of the study were in the University sample; of these, one lived with extended family and three lived independently with roommates.

After the academic transitions, an additional 13 participants had moved out of their families' homes, for a total of 19 participants (21.3 % of the entire sample) not living with at least one parent. Of these, two participants in the High School sample began attending boarding school, resulting in 4.2 % of the High School sample not living with either parent. In the University sample, 12 participants attended schools outside the city and a further 5 participants remained in the city but lived independently with roommates (n = 3) or in a university residence (n = 2), for a total of 17 participants, or 41.5 % of the University sample, not living with at least one parent after the transition.

Fourteen participants making the transition to university (34.1 % of the University sample) moved out at the time of starting university.

Procedure

The study involved three phases. The first phase, referred to as Time 1 or "pre-transition," took place over a period of one month, from the end of May to the third week of June 2000. Time 2, or "one month post-transition," took place after participants had experienced at least one month in their new schools, in the 5 weeks from the beginning of October to the first week of November 2000. The final phase of the study, Time 3, or "six months post-transition," took place after participants had experienced their first term in their new school environment, in the four weeks from the second week of February to the second week of March 2001.

At Time 1, participants were required to attend one face-to-face meeting in a research lab of Dalhousie University. These sessions generally took 45 minutes and involved answering verbally posed questions as well as completing questionnaires. The two subsequent phases, Time 2 and Time 3, involved completing questionnaires and returning these by mail, followed by a telephone interview. Questionnaire packages were mailed to participants' homes and returned in enclosed self-addressed stamped envelopes. Once the questionnaires were completed, participants were contacted by phone and participated in a 10-minute phone interview. Participants were paid $10 for each phase of the study in which they participated, for a total of $30 for participants who completed all components of the study; participants were mailed their payment for Time 2 and Time

3 once their completed questionnaires were received and they had taken part in the phone interview. All interviews and phone contacts were conducted by the primary investigator.

Attrition

Ninety-eight participants were originally recruited, including 51 High School and 47 University students. Of these, one of the High School students withdrew from the study after participation in the first phase, and his data are not included in the current study. A further 3 participants could not be reached after Time 1 (2 High School and 1 University). This resulted in a total of 94 participants (48 High School and 45 University) completing the study, representing a minimal overall attrition rate of 4%. However, 5 participants in University sample did not complete a term of university or college; of these, 3 participants did not start at a post-secondary institution in September as they had intended, and 2 others dropped out before the end of their first term. Although these participants remained in the study, their results are not included due to the fact that they did not complete the academic transition.

Measures

Descriptors of the Transition. Participants were asked to rate their experience of the school transition on four dimensions on the questionnaire mail-out one month after the transition (Time 2). An additional rating of degree of stress related to the transition was obtained verbally, during the phone interview 6 months after the transition (Time 3).

The resulting variables, along with the questions asked and response options, are as follows:

1) *Transition Y/N*: Participants were asked "Has starting high school [university] been a transition for you?" with response options of checking "no" or "yes."

2) *Match with Expectations*: "Was starting high school [university] what you expected?" Response options ranged from "0 = not at all what I expected" to "6 = very much what I expected."

3) *Feel Like Adult*: "How much did starting high school [university] make you feel like an adult?" Response options ranged from "0 = not at all" to "6 = very much."

3) *Affective Impact*: "What kind of an experience was starting high school [university] for you?" Options ranged from "0 = negative (bad)" to "6 = positive."

4) *Importance*: "How important was starting high school [university] to who you are now?" with options ranging from "0 = not important" to "6 = very important."

5) *Stress of Transition*: During the Time 3 phone interview, participants were asked: "How stressful was starting high school [university] for you?" with options ranging from "0 = not at all stressful" to "6 = very stressful."

Dependent Variables. Four dependent variables were used to assess the impact of the academic transitions over time.

1) *Distress*: The Beck Depression Inventory-II (BDI-II) is a measure of symptoms of depression consisting of 21 items designed to assess the intensity of depression in clinical and normal populations (Beck, Brown, & Steer, 1996; see

description under Method, Study One). The BDI-II was used as a measure of current distress rather than as a basis for inferring clinical depression. This paper-and-pencil measure was administered at each of the three assessment times.

2) *Self-Concept*: The Student Self and Others Questionnaire (SSOQ; Appendix B) was developed for the current study based on The Self and Others Scale by Dagnan, Trower, and Gilbert (2002). The original format of The Self-Others Scale was used, while some items were added or altered in an attempt to make the scale more relevant to students in particular. Participants were administered the questionnaire that asked them to rate themselves in comparison to others on 14 bipolar descriptors. Ratings were done on a 10-point scale that ranged from -5 to 5, with the extreme ratings representing the poles of the descriptors, such as: "unlikeable – likeable," and "less talented – more talented." Scores on the SSOQ were converted in order to eliminate negative values, with the new scale ranging from 0 to 9 for each item, and the total reflecting a sum of the recoded values. This measure was administered at each of the three assessment times.

Because this measure was altered for the purpose of the current study, its psychometric properties are reported here. Internal reliability for the SSOQ was very good at each time period (Cronbach $\underline{\alpha} = 0.89$ at Time 1, 0.92 at Time 2, and 0.91 at Time 3), and excellent reliability and stability have consistently been reported for semantic differential measures of this kind (Wiggins, 1973). Construct validity of the SSOQ was shown by examining the correlation between the total scores on SSOQ and the Self-Perception Profile for Adolescents, a well-validated measure of students' perceptions of

themselves (Harter, 1988). While the Self-Perception Profile for Adolescents could not be used as an outcome measure for the current study because it is only valid for use with adolescents up to the age of 18, it was administered it at Time 1 for the purpose of validation of the SSOQ. A moderate correlation was found between the Self-Perception Profile for Adolescents and the SSOQ at Time 1 ($r = 0.57$, $p < .001$).

3) Academic *Competence*. Participants were asked to rate how their post-transition grades compared with their pre-grades at Time 2 and Time 3 with the question: "How do you think you are doing academically this year compared to last year?" Response options ranged from "1 = Much Worse" to "7 = Much Better."

4) *Academic Average*. Participants were asked to report their overall averages for their grades in academic subjects at Time 1, and again after their first term following the school transition, at Time 3.

Moderator Variable. *Co-Occurring Transitions*. Participants were verbally asked about which of a list of 19 adolescent transitions had occurred to them on the Adolescent Transition Survey (ATS). Similar to the Adolescent Transition Questionnaire (ATQ; described in Study One), the expanded ATS assessed adolescent transitions that were selected based on the working definition of transitions described in Study 1. The items included in the ATS are listed in Appendix C, and included the 10 transitions assessed in the ATQ, as well as an additional nine items based on a review of the literature.

In examining the effects of co-occurring transitions, simultaneous occurrence was defined as transitions that occurred any time between the pre-transition assessment phase

(Time 1) and 6 months post-transition (Time 3). In order to calculate the number of transitions that occurred during this period with as much accuracy as possible, number of transitions that had occurred was measured at each assessment time. For each participant, only those transitions that occurred after Time 1, and had not previously been endorsed, were counted in the total for Co-Occurring Transitions. That is, transitions which occurred for the first time after Time 1 (at Time 2), or after Time 2 (at Time 3) were coded as "1," while transitions that were endorsed at Time 1 or had not occurred at any point in the study were coded as "0"[8]. The scores were then tallied for a total score on co-occurring transitions.

A summary of the measures, including the types of variable, variable names, and time(s) when they were assessed, is presented in Table 11.

Results

Results are presented in three sections. First, the descriptive statistics and intercorrelations for the study variables are presented. Second, effects of the school transitions on the dependent measures over time are examined. Finally, effects of Co-Occurring Transitions are examined as moderators of change across the two transitions, in each dependent variable.

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[8] Due to child abuse reporting laws, which require reporting of sexual intercourse in minors 15 years of age or younger, and my wish to protect participants' confidentiality, participants who were under 16 years of age were not asked about whether they had lost their virginity in this study. In such cases, this item was coded as missing data (n = 33 at Time 3). This likely led to a deflated number of Co-Occurring Transitions in the High School sample.

Table 11. Summary of Study Variables at Each Assessment Time, in Study 2.

		Time(s) Assessed		
Variable Type	Variable Name	Pre-T./Time 1	1mo. Post-T./Time 2	6 mos. Post-T/Time 3
Descriptors of the Transition	Transition Y/N		X	
	Match with Expectation		X	
	Feel Like Adult		X	
	Affective Impact		X	
	Importance		X	
	Stress of Transition			X
Dependent Variables	Distress	X	X	X
	Self-Concept	X	X	X
	Academic Competence		X	X
	Academic Average	X		X
Moderator Variable	Co-Occurring Transitions	X----------	X----------	X

Descriptive Statistics for Dependent Variables.

Univariate statistics for the dependent variables, at each time of assessment, are presented for the High School sample in Table 12, and for the University sample in Table 13. Independent samples t-tests indicated that there were no significant differences between the High School and University samples on Distress, Self-Concept or Academic Competence. For Academic Average, scores differed significantly between the High School and University samples at both Time 1, t (87) = 2.03, $p < .05$, and Time 3, t (84) = 5.69, $p < .001$, with the High School sample reporting higher mean averages than the University sample at each assessment time.

Examination of correlations among the dependent variables, presented in Table 12 for the High School sample and Table 13 for the University sample, showed that, as would be expected, dependent measures that were repeated across assessment times were significantly positively correlated. This was true for Distress, Self-Concept, Academic Competence, and Academic Average, all of which showed bivariate correlations over time in each sample. In addition, an interesting effect was observed in both samples between the two measures of academic functioning. Academic Average at Time 1 was negatively correlated with Academic Competence at Time 2, such that worse academic performance prior to the transition was related to perceived academic improvement immediately following the transition. However, at Time 3, the correlation between Academic Average and Academic Competence was in the positive direction (although this did not quite reach significance in the High School sample, $r = .29$, $p = .05$), such that

Table 12. Means and Standard Deviations for Dependent Variables, and Correlations Between These, in the High School Sample (n = 48), in Study 2.

Variable	1.	2.	3.	4.	5.	6.	7.	8.	9.		M	SD
Distress												
1. Time 1											8.29	5.33
2. Time 2	.69***										6.97	6.08
3. Time 3	.61***	.80***									7.87	7.66
Self-Concept												
4. Time 1	-.43**	-.34*	-.22								90.03	16.15
5. Time 2	-.34*	-.59***	-.40**	.53***							90.75	16.43
6. Time 3	-.35*	-.53**	-.44**	.65***	.76***						91.16	17.32
Academic Competence												
7. Time 2	-.18	-.50**	-.36*	.01	.47**	.33*					4.36	1.43
8. Time 3	-.24	-.30*	-.34*	.08	.23	.24	.40**				3.98	1.48
Academic Average												
9. Time 1	-.19	.14	.18	.19	-.01	-.09	-.31*	-.07			85.08	8.51
10.Time 3	-.31*	-.16	-.12	.07	.24	.16	.11	.29	.60***		82.50	8.51

* $p < .05$ ** $p < .01$ *** $p < .001$

Table 13. Means and Standard Deviations for Dependent Variables, and Correlations Between These, in the University Sample (n = 41), in Study 2.

Variable	1.	2.	3.	4.	5.	6.	7.	8.	9.	M	SD
Distress											
1. Time 1										7.79	6.51
2. Time 2	.56***									7.22	6.20
3. Time 3	.70***	.63***								8.67	8.12
Self-Concept											
4. Time 1	-.16	-.03	-.14							90.05	16.19
5. Time 2	-.14	-.13	-.13	.58***						88.60	14.38
6. Time 3	-.12	-.09	-.21	.73***	.63***					93.18	13.69
Academic Competence											
7. Time 2	-.08	-.11	.03	.16	.15	.03				3.93	1.86
8. Time 3	-.12	-.07	-.03	.09	.12	.03	.72***			3.56	1.91
Academic Average											
9. Time 1	-.29	-.13	-.25	-.03	-.26	-.13	-.40**	-.07		81.80	6.37
10. Time 3	-.25	-.29	-.20	.04	-.02	-.13	.18	.40**	.54***	69.68	12.26

** $p < .01$ *** $p < .001$

those who performed better academically following the end of the first term also perceived themselves as having improved academically since the previous year. In both samples, Academic Competence Time 3 was unrelated to Academic Average Time 1, and Academic Competence Time 2 was unrelated to Academic Average Time 3. A number of other intercorrelations between the four dependent variables were also present in the High School sample, while this was not the case for the University sample, which showed no other significant correlation between the dependent measures.

In the High School sample, there were significant negative correlations between Distress and Self-Concept across several assessment times, such that higher Distress was related to lower Self-Concept (see Table 12). Distress in the High School Sample was also negatively correlated with Academic Competence over Times 2 and 3, such that greater Distress was related to perceived decreases in academic performance. Distress Time 1 was not significantly related to Academic Competence at either time, but was positively correlated with Academic Average Time 3, such that higher Distress prior to the transition was related to lower average grades at Time 3. Finally, Academic Competence Time 2 was positively correlated with Self-Concept Time 3, such that participants who believed that their academic performance had declined immediately after starting high school had lower self-concepts 6 months after the transition.

Descriptive Statistics for Experience of the School Transition

A number of questions were included in the current study to assess the experience of the academic transition. Hypothesis 1 predicted that the majority of adolescents would

consider the academic milestones to be a transition. Results supported this hypothesis in that one month after starting at the new school 79.5% of the entire sample respond that the academic change had been a transition for them. A higher proportion of the University sample (95.1%) believed that they had experienced a transition compared with the High School Sample (66.0%), but the majority in both groups believed that the academic change was a transition.

At Time 2, participants were asked to rate the academic change along a number of dimensions, including the degree to which the transitions matched participants' expectations, how much it made individuals feel like an adult, the affective impact of the event and how important it was to individuals' identities. It was predicted that adolescents who started high school would not differ from those starting university in their experience of the academic transitions (Hypothesis 2). Independent samples t-tests on each of these variables supported this prediction, indicating that there were no significant differences between the mean ratings for the High School and University groups on any of these measures. The means and standard deviations of responses on the five variables assessing this experience are presented in Table 14 for the High School sample and Table 15 for the University sample.

As shown in both Tables 14 and 15, results on Match with Expectations, the degree to which the transition matched participants' expectations, indicated that both transitions were slightly closer to what was expected than not. The average for Feel Like Adult revealed that each transition generally made participants feel somewhat more like

Table 14. Means, Standard Deviations, and Intercorrelations for Descriptors of the High School Transition, in Study 2.

Variable	1.	2.	3.	4.	M	SD
1. Match with Expectations					3.64	1.67
2. Feel Like Adult	.13				3.34	1.54
3. Affective Impact	.21	.40**			4.98	1.07
4. Importance	-.19	.39**	.28		3.47	1.64
5. Stress of Transition	-.44**	-.04	-.36*	-.15	2.29	1.57

*p < .05 ** p < .01

Table 15. Means, Standard Deviations, and Intercorrelations for Descriptors of the University Transition, in Study 2.

Variable	1.	2.	3.	4.	M	SD
1. Match with Expectations					4.02	1.57
2. Feel Like Adult	.17				3.95	1.40
3. Affective Impact	.51**	.35*			4.85	1.15
4. Importance	.02	.36*	.29		3.59	1.55
5. Stress of Transition	-.09	-.09	-.16	-.34*	3.05	1.55

*p < .05 ** p < .01

an adult. On Affective Impact, results indicated that participants tended to perceive the two transitions as quite positive experiences. Results on Importance showed that the academic transition was perceived as somewhat important to participants' identities. At 6 months post-transition, participants were asked to rate how stressful the school transition was for them. Hypothesis 3 predicted that the transition to university would be more stressful than the transition to high school. This hypothesis was confirmed with an independent samples t-test, which indicated that there was a significant difference between the samples on this measure, t (87) = -2.28, $p < .05$, with the High School sample reporting lower stress associated with the school transition than the University sample. Therefore, the transition to university was experienced as slightly more stressful than the transition to high school.

It was expected that moving out would account for the higher stress levels in University participants. That is, Hypothesis 4 predicted that adolescents who left home for the first time at the same time as starting university would report higher stress levels than those who did not. Approximately one third of the University sample ($n = 14$) moved out for the first time simultaneously with starting university. However, an independent samples t-test failed to confirm Hypothesis 4, in that participants who moved out of their homes at the same time as starting university did not differ significantly in level of stress from those who did not.

Examination of the intercorrelations of the Descriptors of the Transition, shown in Table 14 for the High School sample and Table 15 for the University sample, revealed

the patterns of association between these variables in the two samples. For students making the transition to High School, Match with Expectations was negatively correlated with Stress of Transition, such that the less that starting high school matched with participants' expectations, the more stressful it was overall. Match with Expectations was not significantly related to the degree to which the transition made participants feel like an adult, nor to Affective Impact or Importance. Feel Like Adult was positively correlated with both Affective Impact and Importance, such that the more the transition made participants feel like an adult, the more it was both a positive experience and important to their identity. Affective Impact was negatively related to Stress of Transition, with participants who rated the transition as more positive immediately after starting high school also later rating the transition as less stressful overall. Stress of Transition was not significantly related to the degree to which changing schools made participants feel like an adult or to the importance of the transition.

Participants making the transition to university showed a positive correlation between Match with Expectations and Affective Impact, such that the more the transition matched with participants' expectations, the more positive the experience was. Match with Expectations was not significantly related to the degree to which the transition made participants feel like an adult, Importance, or Stress of Transition. The degree to which starting university made participants feel like an adult was positively correlated with both Affective Impact and Importance, such that the more the transition made participants feel like an adult, the more it was both a positive experience and important to their identity.

Importance was also negatively correlated with Stress of Transition, such that participants who believed that starting university was more important to their identity tended to rate it as less stressful overall. Stress of Transition was not related to any other descriptor variables in the University sample.

Correlations between Dependent Variables and Descriptors of the Transition

Correlations between descriptors of the transition and the dependent variables are presented in Table 16 for the High School sample and Table 17 for the University sample. Results are summarized here for each sample in order to present how dependent variables are related to each dimension of the experience of the school transition measured at Time 2, and Stress of the Transition, measured at Time 3.

Correlations in the High School Sample. As shown in Table 16, Match with Expectations was negatively correlated with Distress Time 2. That is, increased distress at one month after starting high school was related to participants' belief that the transition matched less well with what they expected. Match with Expectations was not related to any of the other dependent variables in the High School sample. Feel Like Adult, the degree to which the transition made participants feel like an adult, was not significantly related to any of the dependent variables.

Affective Impact, measured at Time 2, was significantly negatively correlated with Distress at Time 2 and Time 3, but not at Time 1. Therefore, participants who perceived the transition as more positive at one month post-transition also reported less distress at both post-transition assessment times, but pre-transition distress was not

Table 16. Correlations between Dependent Variables and Descriptors of the High School Transition, in Study 2.

Variable	Match with Expectations	Feel Like Adult	Affective Impact	Importance	Stress of Transition
Distress					
Time 1	-.23	-.04	-.15	-.06	.24
Time 2	-.34*	-.17	-.43**	-.24	.38***
Time 3	-.11	-.21	-.38**	-.09	.27
Self-Concept					
Time 1	.05	-.11	.22	.07	-.23
Time 2	.18	.17	.54***	.27	-.31*
Time 3	.13	.17	.43**	.45**	-.18
Academic Competence					
Time 2	.08	.15	.45**	.39*	-.19
Time 3	-.10	-.19	.24	.31*	-.04
Academic Average					
Time 1	.07	-.13	-.17	-.12	-.21
Time 3	-.13	-.06	.06	.07	-.13

* $p < .05$ ** $p < .01$ *** $p < .001$

Table 17. Correlations between Dependent Variables and Descriptors of the University Transition, in Study 2.

Variable	Match with Expectations	Feel Like Adult	Affective Impact	Importance	Stress of Transition
Distress					
Time 1	-.22	-.16	-.21	-.12	.33*
Time 2	-.36*	-.16	-.46**	-.27	.37*
Time 3	-.20	-.18	-.25	-.30	.36*
Self-Concept					
Time 1	.11	.16	.05	.08	-.20
Time 2	.29	.09	.31*	.09	-.21
Time 3	.10	.04	-.05	.19	-.19
Academic Competence					
Time 2	.00	-.22	.14	-.08	-.32*
Time 3	-.15	-.31*	-.03	-.15	-.21
Academic Average					
Time 1	.02	-.30	-.02	-.07	.24
Time 3	-.10	.15	.26	-.18	-.12

* $p < .05$ ** $p < .01$ *** $p < .001$

related to how positive or negative the academic transition was perceived to be. Affective Impact was also positively correlated with Self-Concept Time 2 and Time 3 and Academic Competence Time 2. This indicated that participants who rated the transition as more positive had better self-perceptions at both post-transition assessment times, and tended to believe that their grades had improved compared to the previous academic year, at one month post-transition. Affective Impact was not related to Self-Concept prior to the transition, nor to Academic Competence 6 months post-transition. Affective Impact was not significantly related to Academic Average at either Time 1 or Time 3.

Importance of starting high school to participants' identities was only related to two dependent variables at any assessment time. First, Importance was positively correlated with Self-Concept Time 3. That is, the more participants believed that starting high school was important to their identities immediately following the transition, the better their self-perceptions were 6 months after the transition. Importance was also positively correlated with Academic Competence at both assessment times, such that participants who indicated that starting high school was important to their identities tended to believe that their academic performance had improved, compared to their pre-transition performance, at both one month and six months post-transition. However, Importance was not related to High School participants' Academic Average either before or after the transition.

Stress of Transition, measured at Time 3, was positively correlated with Distress at Time 2, such that higher distress immediately following the transition was related to perceiving the academic transition as more stressful overall. Stress of Transition was also negatively correlated with Self-Concept at Time 2, indicating that individuals who had better self-perceptions one month after the school change rated the transition as less stressful overall. Stress of Transition was not significantly related to Distress or Self-Concept at either Time 1 or Time 3, nor was it related to Academic Competence or Academic Average at any assessment time.

Correlations in the University Sample. In the University sample, Match with Expectations was negatively correlated with Distress Time 2. As with the High School sample, increased distress at one month post-transition was related to feeling that the academic transition did not match what participants had expected. Match with Expectations was not significantly related to any of the other dependent variables.

The degree to which the transition made participants feel like an adult was negatively correlated with Academic Competence Time 3. That is, participants for whom starting University made them feel more like adults immediately after the transition perceived their academic performance to have deteriorated compared to the previous year at 6 months post-transition. Feel Like Adult was not significantly related to any of the other dependent variables.

Affective Impact, measured at Time 2, was significantly negatively correlated with Distress Time 2. Therefore, participants for whom starting university was a less

positive experience were more distressed after one month post-transition. Affective Impact was also positively correlated with Self-Concept Time 2, indicating that participants for whom the transition was a more positive experience had better self-perceptions soon after the transition.

Importance of starting university was not related to any of the measures of functioning in the University sample.

Stress of Transition, measured at Time 3, was positively correlated with Distress at each assessment time, such that higher Distress levels at pre- and both post-transition assessment times were related to perceiving the transition as more stressful overall. Stress of Transition was also negatively correlated with Academic Competence Time 2, indicating that individuals who believed that they were doing worse academically compared to their pre-transition performance had higher levels of stress associated with starting university.

Descriptive Statistics for Moderator Variable

Co-occurring Transitions was the number of transitions assessed on the Adolescent Transition Survey (ATS) that occurred at around the same time as the academic transition, that is, between Time 1 and Time 3. There were no differences between the High School and University samples on the number of transitions experienced. Participants generally experienced one co-occurring transition (For entire sample: $M = .90$, $Mdn = 1$, $SD = 1.00$) as they made either academic transition.

Correlations between Co-Occurring Transitions and Other Study Variables. Correlations between the co-occurrence of transitions and the descriptor variables were examined in each sample. Co-Occurring Transitions was not significantly related to any of the descriptor variables in the High School sample. In the University sample, Co-Occurring Transitions was related to Stress of Transition, $r = .42$, $p < .01$, indicating that the greater the number of transitions that occurred at around the same time as starting university, the more stressful the transition was perceived to be.

Co-Occurring Transitions was also found to correlate with a different dependent measure in each group. In the High School sample, Co-Occurring transitions was negatively related to Academic Average Time 1, $r = -.41$, $p < .01$. That is, participants with lower academic performance prior to starting high school tended to experience a greater number of adolescent transitions at around the time of the starting the new school. In the University group, Co-Occurring Transitions was positively correlated with Distress Time 2, $r = .39$, $p < .05$, such that participants who experienced one or more transitions at the same time as starting University had higher levels of Distress one month after the transition.

The Effects of the School Transition over Time

Two related predictions were made based on the Stressful Change Hypothesis. Hypothesis 5 predicted that adolescents would experience a decline in self-concept and perceived competence in school, and an increase in distress, one month after the transition to the new school setting. Hypothesis 6 predicted that each of these three

outcome measures would return to their pre-transition (Time 1) levels following completion of the first term in the new school, at Time 3. In order to test these hypotheses, change over time was assessed in each of the dependent measures, using a series of repeated measures analyses of variance (ANOVAs). Each of these analyses tested for the changes in each of the dependent measures in turn, in the High School and University samples separately. In analyses where significant change was found, planned contrasts were used to examine which assessment times were significantly different for the given outcome measure. Before conducting the analyses, the distributions of each of the dependent variables at each assessment time were examined in order to ensure that the assumptions for ANOVA were met. Results are presented separately for each of the outcome measures.

Examination of the distribution of Distress at each assessment period revealed positive skewness (ranging from 1.23 to 1.74) and kurtosis (ranging from 2.12 to 3.13) partly owing to one or two univariate outliers. Because the outliers were different at each assessment time, the decision was made not to delete these cases from the analyses, and instead the variable was square root transformed at each time. This transformation yielded improved skewness (ranging from 0 to .33) and kurtosis (ranging from .14 to .48) and the transformed variable was used in all subsequent analyses.

Repeated measures ANOVAs revealed that Distress did not change significantly across the school transition in either the High School or the University group.

Self-Concept showed minimal skewness (ranged from -.21 to -.62) and kurtosis (from -.18 to .69) at each assessment time. A repeated measures ANOVA in the High School sample did not show significant change in Self-Concept over time. However, the same analysis in the University sample was significant over time, $\underline{F}$ (2, 38) = 3.39, $\underline{p}$ < .05. Planned contrasts revealed a significant difference in the University sample between Time 2 and Time 3, $\underline{F}$ (1, 39) = 5.53, $\underline{p}$ < .05, indicating that Self-Concept was significantly lower at Time 2 than at Time 3 (refer to Table 13 for group means on this variable). Thus, participants making the transition to university, but not those starting high school, showed an increase in self-concept from one month to 6 months post-transition.

Academic Competence, participants' self-ratings of their change in academic performance compared to the previous year, assessed at Times 2 and 3, showed minimal skewness and kurtosis at both time periods (all values < .50). Repeated measures ANOVAs in both the High School and University samples failed to show significant change in Academic Competence from Time 2 to Time 3.

In sum, Hypothesis 5, which predicated a decline in functioning following each transition, was not supported. Hypothesis 6, which predicted improvements in functioning in the post-transition period, was also not supported, with one exception: participants making the transition to university showed a significant increase in their self-concept from one month to 6 months post-transition.

Hypothesis 7 predicted a drop in academic grades from pre-transition to 6 months post transition. In order to test this, additional repeated measures ANOVA were done, requiring that the distribution of this variable first be examined. Academic Average showed slightly negative skewness of -.42 at Time 1 and -.81 at Times 3, and kurtosis of -.81 and 1.22 at Times 1 and 3, respectively. One case in the University sample was identified as a univariate outlier due to an extremely low z score on this variable at Time 3. When this outlier was not included in the analyses, both skewness and kurtosis were relatively unchanged at Time 1 (-.45 and .24, respectively) but were reduced at Time 3 (-.34 and -.67, respectively). The decision was therefore made to delete the outlier from further analyses involving this dependent variable. Results of the repeated measures ANOVAs confirmed Hypothesis 7, in that Academic Average declined significantly over time in both the High School sample, $\underline{F}$ (1, 45) = 4.26, $\underline{p} < .05$, and the University sample, $\underline{F}$ (1, 39) = 55.41, $\underline{p} < .001$ (refer to Tables 12 and 13 for group means and standard deviations on these measures).

Co-Occurrence of Transitions as a Moderator of the Effects of the School Transition

Two hypotheses were made about the impact of Co-Occurring Transitions. Based on the multiple transition hypothesis, Hypothesis 8 predicted that the co-occurrence of transitions would moderate changes in functioning from one month to six months post-transition, such that adolescents who experienced transitions concurrently with an academic milestone would demonstrate increased distress and decreased self-concept and academic competence. Hypothesis 9, extrapolated from the gradual consolidation

hypothesis, predicted that Co-Occurring Transitions would have a greater impact on academic self-concept in younger versus older adolescents. Even though several of the outcome measures in the current study did not show the predicted changes over time, moderation effects of Co-Occurring Transitions were tested in each the repeated dependent variables, in the event of a hidden interaction (cf. Baron & Kenny, 1986).

In order to assess the moderation effects of simultaneously occurring transitions, this variable was first dichotomized by creating a median splits. Participants who experienced no transitions at the time of the academic change were categorized as "Low" ($\underline{n}$ = 27 or 56.3% of the High School sample and $\underline{n}$ = 14 or 34.1% of the University sample) while those who experienced one or more transitions were grouped into the "High" Co-Occurring Transitions category ($\underline{n}$ = 21 or 43.8 % of the High School sample and $\underline{n}$ = 27 or 65.9% of the University sample). Separate repeated measures ANOVAS were then performed for the change from Time 2 to Time 3 in the three dependent variables. In these analyses, each dichotomous moderator was entered as a between-subjects variable, in order to determine whether the moderator showed a significant interaction with change in the given dependent variable. Analyses were conducted separately in the High School and University samples.

In assessing moderation of the change in Distress from Time 2 to Time 3, Co-Occurring Transitions did not interact with change over time in either sample. Distress in the months following the transition was not moderated by the co-occurrence of other transitions in either the High School or the University group.

The test of moderation effects of Co-Occurring Transitions on the change in Self-Concept from Time 2 to Time 3 revealed no interaction in the High School sample. However, there was a significant interaction between Co-Occurring Transitions and change in Self-Concept in the University sample, F (1, 38) = 5.00, $p < .05$. Examination of group means revealed that participants who did not experience a transition at the same time as starting University showed a greater increase in Self-Concept from one month to 6 months post-transition than did those who experienced one or more transitions. This finding indicates that the co-occurrence of transitions moderates the increase in participants' self-concept in the months following the start of university.

Co-Occurring Transitions also moderated the change in Academic Competence in the High School group, in that there was a significant interaction between Co-Occurring Transitions and change in Academic Competence from Time 2 to Time 3, F (1, 42) = 6.62, $p < .05$. Examination of group means revealed that those High School participants who experienced one or more co-occurring transition reported a decline in their post-transition versus pre-transition academic competence from Time 2 to Time 3, while those who did not experience any co-occurring transitions did not change their perceptions of their academic competence. The same was not true for University students, where the co-occurrence of transitions did not influence self-perceptions of academic performance over time.

To summarise, Hypothesis 8 was partially supported in the finding that the co-occurrence of transitions moderated the change in self-concept following the transition to

university, and the change in Academic Competence following the transition to high school. The latter also supported Hypothesis 9, which predicted that Co-Occurring Transitions would have a greater impact on academic competence in younger versus older adolescents. However, Hypothesis 8 was not supported in the finding that Co-Occurring transitions did not moderate Distress in either sample, Self-Concept in the High School sample, or Academic Competence in the University sample.

Discussion

The current study is the first to examine the experience and impact of two academic transitions: starting high school and university. Results revealed both similarities and differences in how these academic milestones were experienced by adolescents, as well as the impact of starting high school or university on adolescent functioning over time. The effects of transitions that simultaneously occurred with each academic milestone were also examined, with an emphasis on the differential impact of co-occurring transitions in older versus middle adolescents.

The Experience of Academic Transitions

The first major goal of the current study was to examine how adolescents experienced the academic milestones. To begin with, the assumption that school milestones are experienced as transitions was tested by asking adolescents who had just started high school or university whether changing schools had been a transition for them. The majority in both groups indicated that it was. The percentage of those indicating that the event was a transition for them was somewhat lower for the group entering high

school than for the group entering university. Therefore, while most adolescents viewed such academic changes as transitions, the consensus about this was less strong in the younger group.

The experience of academic milestones was then assessed along a number of dimensions that are theoretically relevant to developmental transitions. These dimensions included: how well the transition matched with adolescents' expectations, how much it made the individual feel like an adult, the affective impact of the transition and the importance of the event to the individual's identity. In keeping with predictions, ratings of the experience of starting high school versus starting university did not differ one month after the academic change. That is, these transitions were not experienced differently in terms of their affective impact, importance to identity formation, degree to which they matched with adolescents' expectations, or the degree to which they made individuals feel like an adult.

In general, findings did not support the commonly held belief that academic transitions are in any way negative. Both starting high school and university were highly positive experiences, with *mean* ratings of almost 5 out of 6 on the measure of the affective impact of these transitions. On the remaining measures of the experience, average ratings fell closer to the midpoint. That is, the two academic transitions matched moderately well with what adolescents expected, made adolescents feel somewhat more adult-like, and were somewhat important to adolescents' identities.

An additional dimension of the experience was the level of stress associated with the transition overall, assessed after adolescents had completed their first terms in the new school. Results showed that the average ratings of stress associated with each transition fell close to the midpoint on the scale, indicating that both starting high school and university were moderately stressful events. As predicted, the level of stress differed between the two groups, with adolescents starting university reporting slightly higher average level of stress associated with the transition than those starting high school. This finding had been predicted, based on the expectation that starting university would co-occur with leaving the parental home for a number of adolescents. That is, it was expected that the overall level of stress associated with starting university would be inflated by the responses of those individuals who left home at the time of the transition. Contrary to this expectation, however, those who moved out when they started university, a group that comprised approximately one third of the older sample, did not differ in their ratings of stress associated with starting university compared with those who remained at home. Therefore, the higher level of stress associated with the transition to university, as compared to high school, was not accounted for by the concurrent transition of moving out.

An alternative explanation for the higher degree of stress associated with the start of university may be found by comparing the two groups on the indices of adolescent functioning. The only measure of functioning that differed significantly between the two groups was their grades prior to, and six months after, the transition. As will be

discussed in the section to follow, both academic transitions were related to a decline in grades following the end of the first term in the new schools. Of relevance here, however, is the finding that the decline in grades from pre- to post-transition was steeper for those entering university than for those entering high school. Therefore, it may be that the higher level of stress associated with starting university is due to the dramatic drop in grades that occurred following this transition. This possibility is supported by the finding that, for the university group, lower ratings of academic competence in the month following the transition were related to increased stress associated with the event overall. The same was not true for adolescents making the transition to high school, for whom the stress of the transition was not related to either measure of academic functioning at any time. It is not possible to determine whether the drop in grades caused the increased level of stress in the older group, due to the correlational nature of this study. However, the finding that these variables are related in the older group, but not in middle adolescents, adds further weight to the possibility that starting university is more stressful than starting high school as a result of the magnitude of the decline in academic grades that occurred with the start of university.

Examination of the correlations between the dimensions of the experience revealed further patterns of similarities and differences in the experience of starting high school and university. In terms of similarities, adolescents who believed that experiencing an academic transition made them more adult-like tended to have a more a positive experience and believe that the school transition was more important to who they

are. In addition, adolescents who felt better prepared for the academic change, in terms of having their expectations about the transition met, were less likely to perceive the transition to high school as stressful, and were more likely to perceive the transition to university as a positive event. This finding is in keeping with a previous study suggesting that the impact of an academic transition may be moderated by the extent to which students are prepared for the transition (Proctor & Choi, 1994).

There were also differences between the two groups. For adolescents starting high school, feeling that the event was less positive one month after it occurred was related to perceiving it as having been more stressful six months after the transition. This was not the case for those starting university, for whom the affective impact of the transition was not related to the overall degree of stress associated with it. These findings indicate that for older adolescents, there are factors other than impressions of the experience immediately following a transition that affect how stressful a transition is perceived to be. For younger adolescents, however, it appears that experiencing the start of high school as a positive event one month into the transition was still a factor in appraisals of the degree of stress associated with the transition six months later.

Another difference between the groups was that an inverse relationship was found between ratings of importance and stress of the transition in adolescents starting university, while these measures were not related in the high school group. That is, the more important that starting university was to adolescents' identities one month after the transition, the less stressful the transition was perceived to have been six months into the

new school setting. This finding is somewhat counterintuitive, given that one might expect adolescents for whom starting university was *more* important to their identities to have a more stressful experience.

There are several possible explanations for this unexpected finding. One possibility is that adolescents for whom starting university was more stressful downplayed the importance of this transition to their identities. Given the temporal nature of the findings, that is, that importance to identity was assessed approximately five months before degree of stress, this interpretation is somewhat improbable. An more plausible interpretation is that students for whom starting university was more important took the academic challenge more seriously, thereby reducing factors that would have made the experience stressful and resulting in less stress overall. A related interpretation is that adolescents for whom starting university was more important to their identities were somehow better prepared for the challenge. Although the degree of stress associated with starting university was not related to how well the experience matched with expectations, better match with expectations in starting university *was* related to a more positive experience of this transition. This finding lends support to the interpretation that adolescents who believe that starting university is more important are somehow better equipped to handle the transition.

In sum, both academic milestones were viewed as transitions by the majority of adolescents, and were generally experienced as very positive events. Those adolescents for whom making an academic transition represented a step toward the attainment of

adult status tended to have a more positive experience and also to believe that the event was more important to who they were, regardless of whether they were making the transition to high school or to university. In addition, being better prepared for either academic transition was related to having a better experience. Differences between the groups revealed that starting university was experienced as slightly more stressful than starting high school, possibly due to the sharp drop in grades that was associated with the former. For younger adolescents, the overall level of stress associated with starting high school was related to how positive or negative the experience was perceived to be shortly after the transition. For older adolescents, experiencing the start of university as less important to one's identity was related to finding this transition more stressful, possibly indicating that being well prepared for this challenge predicts a smoother transition.

The Impact of Academic Transitions over Time

The second major goal of this study was to document the impact of transitions over time. The impact of starting high school or university was assessed before the transition, one month after the transition, and again six months after the transition. This timeframe was chosen in order to test the stressful change hypothesis, which predicts that individuals will experience short-term difficulties following a transition, and then return to previous levels of functioning once they have had a chance to adapt to the change.

In general, few changes were observed over time on the multiple indices of functioning. Distress did not change significantly between any of the assessment times in either group of adolescents. There was also no change in perceived academic

competence, which was adolescents' self-comparisons of their current academic functioning to the previous year, at one month and six months post-transition. For general self-concept, change was evident only in university students, in the period after the transition. That is, findings indicated that self-concept increased from one month to six months post-transition in adolescents making the transition to university. The same effect was not apparent in adolescents making the transition to high school, who did not show any change in general self-concept over time.

The only evidence of difficulty associated with the occurrence of either academic transition was a drop in academic grades from pre-transition to six months post-transition. This finding was predicted and is in keeping with findings from other studies indicating that students' grades tend to be lower following academic milestones (e.g., Brablc, 1993/1994). This finding is nonetheless significant, given research indicating that students who experience declines in grades during the transition to senior high school tend to have difficulty recovering from this academically (Seidman et al., 1996) and continue to function at the level they fell to following the transition (Reyes et al., 2000). As in previous studies, however, this overall effect is attributed to changes in grading policies and/or the increasing expectations that come with school promotion (Aseltine & Gore, 1993; Simmons, 1987), rather than taken as evidence of a decline in functioning. This appears to be the more parsimonious explanation for the current findings, particularly given that declines were not apparent in any other areas of functioning.

Therefore, results did not support predictions based on the stressful change hypothesis, in that neither starting high school nor university was associated with a decline on any of the three indices of functioning used to test this hypothesis. The only change in any of these measures over the course of the current study was the finding that adolescents who started university showed an increase in general self-concept between one month and six months after the transition. While this finding is consistent with the second part of stressful change hypothesis, which predicts that functioning will improve following a transition once the individual has time to adjust to the change, this effect had not been preceded by a decline on this measure. Without the preceding decline, the post-transition rise in self-concept cannot truly be interpreted as support for the stressful change hypothesis.

While the findings for the outcome measures over time did not support the stressful change hypothesis, an unpredicted effect was observed between the two measures of academic functioning, which may be relevant to this hypothesis. In both groups of adolescents, average grades prior to the transition were inversely related to adolescents' perceptions of their academic competence one month after the transition. That is, the better that adolescents performed academically prior to starting high school or university, the more they thought that their grades had declined shortly after the transition. The direction of this relationship had reversed by six months post-transition, such that better grades at this time were related to perceptions of improvement in academic competence relative to the previous year. Although this finding was not

predicted, the fact that it was observed in both groups indicated that it might be of theoretical significance.

To begin with, this finding offers interesting implications for the stressful change hypothesis, which predicts that competence will be reduced immediately after a transition, and then return to pre-transition levels following a period of adjustment. As noted earlier, academic competence ratings did not change significantly in the months following the transition in either group in the current study. However, the relationship between academic performance and academic competence suggests that adolescents may respond differently to a transition depending on their levels of functioning prior to the transition. It could be that adolescents who were stronger academically were concerned that they had not maintained their high academic standing after the transition. Conversely, students who were weaker academically might have experienced the transition as an opportunity to start afresh academically, and therefore perceived improvements in their performance compared to the previous year. Whatever the case, these findings can be interpreted as evidence that the stressful change phenomenon occurs for domain-specific competence, but only in adolescents who are competent in the given domain to begin with. The fact that academic competence did not change over time in the aggregate may have been because such effects for high-achievers were obscured by an opposite effect in lower-achieving individuals.

The Co-Occurrence of Transitions as Moderators of Impact over Time

The third objective of the current study was to examine whether simultaneously occurring transitions interacted with the impact of academic transitions over time, in order to predict which adolescents might have more difficulty adjusting after a transition. Approximately half of each group of adolescents experienced at least one transition simultaneously with changing schools, with an average of one transition occurring at around the time of the academic milestone in each group. Middle and older adolescents did not differ in the number of co-occurring transitions that they experienced during the ten months of the study.

The occurrence of additional transitions at the time of the school change was related to different measures of experience and functioning in each group. In adolescents starting high school, the co-occurrence of transitions was not related to any aspect of their experience of the school change, but was inversely related to adolescents' average grades prior to starting high school. That is, having a lower academic average at the end of junior high school was related to experiencing a greater number of transitions in the ten months that followed. In adolescents starting university, the co-occurrence of one or more transitions was related to increased levels of distress immediately following the transition, and to how stressful starting university was perceived to be overall. Therefore, the co-occurrence of transitions appears to be associated with quite different factors in the two groups.

The moderating effect of co-occurring transitions was tested in the domains of distress, general self-concept, and academic competence, in order to examine whether functioning in the period following an academic transition was affected by the simultaneous occurrence of other transitions. Results were different for the two groups of adolescents. In the high school group, adolescents who experienced one or more transitions at the same time as the school change showed a decline in their perceived academic competence during the post-transition period, while those who did not experience any concurrent transitions did not change in their academic competence over this time. The same was not true in adolescents attending university, for whom the co-occurrence of transitions only moderated the change in general self-concept following the transition. This effect was such that adolescents who experienced one or more transitions concurrently with starting university did not show as much of an increase in their general self-concept as those who did not experience any additional transitions during that period. The co-occurrence of transitions did not moderate distress over time in either group.

The finding that co-occurring transitions moderated functioning in the months following the start of high school offers support for the multiple transition hypothesis in middle adolescents. The multiple transition hypothesis predicts functional difficulties in individuals who experience more than one transition simultaneously. In keeping with this prediction, those adolescents who experienced one or more transitions at around the same time as starting high school showed a decline in domain-specific functioning. This finding is significant particularly given the results of the current study, which indicate

that academic transitions generally do not cause any functional difficulties in adolescents. That is, while middle adolescents were not negatively affected by starting high school, those who experienced additional transitions during the same period showed a decline in their academic competence following the start of high school. Therefore, the co-occurrence of transitions represents a risk factor for adolescents starting high school.

In contrast, no clear support for the multiple transition hypothesis was found in adolescents making the transition to university. The finding that co-occurring transitions moderated the increase in general self-concept following the start of university is not easily explained, given that both those adolescents who experienced co-occurring transitions and those who did not showed an *increase* in self-concept over the post-transition period. The moderating effect was such that the increase in self-concept was not as great for those who experienced simultaneously occurring transitions as for those who did not. Based on the multiple transition hypothesis, it had been predicted that adolescents who experienced simultaneous transitions would show a *decline* in self-concept compared with those who did not. In explaining this effect, one possibility is that the co-occurrence of transitions in older adolescents somehow tempers a natural increase in self-concept following the start of university. However, given that this effect was not predicted, one must also consider the possibility that this finding arose by chance, particularly given that declines were not evident on the other measures of functioning in this sample. Based on these results, the co-occurrence of transitions does not appear to increase the vulnerability of adolescents making the transition to university.

This finding also supported the gradual consolidation hypothesis, which is based on the theory that particular domains of competence are consolidated to differing degrees throughout adolescence (Alsaker & Olweus, 1992). The prediction that younger adolescents, who would have had less experience with academic transitions than older ones, would be more vulnerable to the impact of transitions that occurred simultaneously with the start of high school in the domain of academic self-competence was supported. The possibility that the gradual consolidation effect might be due to higher numbers of co-occurring transitions in younger versus older adolescents was also considered. However, this did not appear to be the case, given that the number of transitions that co-occurred with the academic change did not differ between the two groups. Therefore, findings from the current study offer evidence that younger adolescents may in fact be more vulnerable to the stressful impact of co-occurring transitions than older ones.

Theoretical Implications

Findings from this study generally failed to support the stressful change hypothesis, but offer important implications for the theory that transitions will cause temporary perturbations in functioning. Results on several measures used in the current study indicate that the stressful change hypothesis does not accurately capture the impact of academic transitions. First, there is no evidence to suggest that either academic transition is experienced as a negative event. Results on measures of the experience indicate that both academic milestones were experienced as very positive events shortly after the transitions occurred, and that each event was only experienced as moderately

stressful overall. Secondly, none of the indices of functioning used to test this hypothesis, which included measures of emotional distress, general self-concept, and perceived academic competence, showed any evidence of decline after either transition. Instead, the transition to university was marked by a boost in general self-concept in the six months following the transition, while none of the outcome measures changed significantly in the period following the high school transition. Therefore, it does not appear that the experience of either academic transition is associated with short-term difficulties or any difficulties at all. This finding is in keeping with results from another study, which found that the transition to university predicted improvements in functioning (Aseltine & Gore, 1993), as well as with studies indicating that the transition to high school had few harmful effects (e.g., Simmons & Blyth, 1987).

While these findings did not support the theory that transitions cause temporary perturbations in functioning, both groups of adolescents showed a pattern of association between the two measures of academic functioning that has implications for the stressful change hypothesis. As discussed earlier, the direction of the correlation between perceived academic competence and academic performance switched in both groups from a negative correlation to a positive one over time. This pattern was such that the better adolescents performed academically prior to the transition, the more they perceived that their performance declined compared to the previous year immediately after the transition; at the third assessment time, however, these two measures were positively correlated in both groups, indicating that perceived academic competence was again

reflective of actual performance. As discussed earlier, this finding suggests that adolescents may respond differently to a transition, with higher levels of competence in one domain associated with decreases in perceived competence following a transition in the same domain. The implication of this finding for the stressful change hypothesis is that receiving objective feedback about performance may be the critical factor in determining perceptions of competence following a transition. In the current study, it was not until adolescents had received their post-transition grades that their perceptions of their academic competence became a more accurate reflection of their performance. A similar effect could account for studies that have found support for the stressful change hypothesis in that self-evaluations decline and then resume following a transition (cf. Graber & Brooks-Gunn, 1996).

These findings, together with results that showed that academic milestones are perceived as positive events, suggest that predictions based on the stressful change hypothesis may have been too general. Results of the current study indicate that later academic milestones are not very stressful, and that they generally cause functional difficulties. Instead, it appears that experiencing a transition affects domain-specific competence. This effect is such that, when a transition occurs, self-evaluations in the given domain are not reflective of actual performance until individuals receive external confirmation that they can function in their new roles. Self-evaluations immediately after a transition may instead be influenced by the individuals' previous levels of functioning in the given domain, as in the case of adolescents making academic transitions in the

current study. This finding highlights the need to consider adolescents' performance in a given domain prior to a transition, as well as the importance of receiving objective feedback about competency post-transition, in predicting adolescent adaptation to developmental milestones.

Results also offered support for the other two hypotheses that were tested in the current study. Specifically, the finding that middle adolescents are more vulnerable than older ones to the effects of simultaneously occurring transitions supported both the multiple transition and gradual consolidation hypotheses. Results indicated that the presence of co-occurring transitions was related to a decrease in academic competence in the period following the start of high school. The multiple transition hypothesis was supported in the finding that no such decline occurred in adolescents who did not experience other transitions at the time of starting high school. While the younger group appeared to be more affected by the number of co-occurring transitions than the older one, this variable did not differ between the two groups. That is, both middle and older adolescents experienced the same number of co-occurring transitions during the period of this study. This finding suggests that younger adolescents may in fact be more vulnerable to the stressful impact of co-occurring transitions than older ones. The gradual consolidation hypothesis was supported by this finding, which indicates that younger adolescents may be in fact be more vulnerable to stressors than are older ones.

The reliance on self-report measures was the primary limitation of this study. The use of multiple assessment methods, such as the inclusion of an objective measure of

functioning, would enhance the quality of this research by providing multiple perspectives on adolescent functioning rather than relying solely on adolescent reports. The use of longitudinal data makes this study somewhat different from the traditional correlational self-report study, in that the temporal order of the examined variables could be specified. Nonetheless, the causal direction of the relation between the measures of the experience of transitions and adolescent functioning cannot be inferred with certainty.

Other limitations relate to statistical considerations. First, due to the relatively small sample size in each group, statistical power of the data analyses was less than ideal. Consequently, results may suggest that academic milestones or co-occurring transitions have fewer effects on adolescent functioning than is actually true. Moreover, these power considerations precluded analyses of gender differences. Future research should address the effects of gender in a prospective examination of adolescent transitions. In addition, the many analyses in the current study increase the likelihood that significant findings could arise by chance. This may explain some of the unexpected results, such as the finding that co-occurring transitions moderated the increase in self-concept following the start of university, a finding which did not fit with predictions and could not easily be explained. Nevertheless, findings in the current study appeared to be theoretically significant, as detailed above.

This study also had a number of strengths that are worth noting. First, the use of a prospective design allowed for comparisons of functioning from pre to post-transition. Second, the added aspect of having a cross-sectional element to the design allowed for

rich comparisons of two transitions in the same domain, as well as the differential impact of co-occurring transitions, in adolescents of different ages. Third, the use of multiple indices of functioning allowed for examination of vulnerabilities in different areas of functioning and identification of a complex interrelationship between academic self-concept and performance.

In summary, the findings of the current study have several implications for understanding the experience and impact of transitions over time. The stressful change hypothesis did not appear to accurately capture the impact of the academic transitions, particularly because there was no evidence that the transition to either high school or university had any sort of negative impact on functioning. Instead, a more specific effect was found, where domain-specific self-perceptions were differentially affected by the transition depending on adolescents' performance in that domain before the event. Results indicate that rather than showing a general decline, self-evaluations following a transition are based on factors other than actual functioning until objective feedback is received to confirm the degree to which the individual can function in the new situation. Finally, middle adolescents appear to be more vulnerable to the effects of simultaneously occurring transitions, at least in terms of self-perceptions in the domain where change occurred.

Chapter 4

General Discussion

The current program of research had two major objectives. One was to document how adolescents actually experience a number of important transitions. The second was to determine the impact of transitions on adolescent functioning, and how factors related to the timing of transitions affect adolescent outcomes. The two studies in the current research were each designed to address different aspects of these objectives.

Study 1 was a cross-sectional examination of the experience and impact of transitions in adolescents aged 11 to 19 years. Transitions were identified from the research literature and selected based on a working definition of adolescent developmental transition as opposed to more general life events. This study included 10 transitions in the domains of intimate relationships, individuation, psychosexual transitions, substance use, and rejection/alienation. Study 1 examined the affective impact and importance to identity formation of each transition, and compared these experiences across events. Factors related to the timing of transitions, including the effects of experiencing such events early, on-time or late compared to one's peers, and the impact of violating the typical sequence of certain interpersonal transitions, were also investigated in the first study. In addition, the relation between adolescent functioning and the occurrence, timing and sequencing of transitions were explored, in order to predict which adolescents might be at increased risk for functional difficulties based on these factors.

In the second study, two academic milestones were used as a model for an in-depth examination of adolescent transitions over time. The effects of starting high school or university were studied from pre- to post-transition, allowing for longitudinal and cross-sectional comparisons of these events. Both the impact and experience of these transitions were assessed along multiple dimensions in order to document whether certain aspects of the adolescent self were more or less vulnerable following these transitions. This study also investigated the impact of an additional aspect of timing, the simultaneous occurrence of other transitions, and determined whether co-occurring transitions affected middle versus older adolescents differently.

In sum, each study investigated adolescents' experiences of transitions and the impact of these, including how aspects of the timing of such events are related to adolescent functioning. In doing so, this program of research has made a number of unique contributions to the literature on adolescent development, which are summarized the sections that follow.

What Constitutes an Adolescent Transition

The current program of research addressed the lack of consensus in the literature about which events are considered adolescent transitions. A working definition of adolescent transitions was developed in order to delineate what constitutes a transition, and how this is distinguished from more general life events. This definition comprised four criteria. To begin with, transitions were selected on the basis of being "firsts," or developmental challenges, to which adolescents must adapt as they progress toward

adulthood. Based on this criterion, a total of 21 adolescent transitions were selected and investigated, to varying degrees, over the two studies. Secondly, transitions were defined as events that are normative and expected during adolescence. Findings indicated that each of the 10 transitions examined in the first study, and the two academic transitions in the second study, were experienced by the majority of older adolescents.

The two remaining defining criteria that were used to distinguish adolescent transitions from life events were that there are expectations about the timing of transitions, and that the occurrence of transitions will follow expected developmental sequences. The selection of these criteria was based on the existing literature, which offered initial support for both these suppositions. However, the applicability of these criteria remained to be confirmed with regards to most of the transitions selected for the current research, and both studies were designed to address this in various ways, as discussed below.

The Influence of Timing Factors

Social Timing. Study 1 examined how timing compared to one's social referent was related to the experience and impact of six adolescent transitions. Two theories about timing, the early timing and the off-time hypotheses, were compared in accounting for observed timing effects. Both theories are based on the assumption that being out-of-synch with the norm is experienced by adolescents as more stressful, although this assumption had not previously been tested. Results indicated that timing was related to the experience of three out of the six transitions examined: first love, first romantic

relationship and trying drugs, but findings did not fit well with expectations set forth by either of the existing timing hypotheses.

Specifically, results did not support the early timing hypothesis in that these transitions were generally experienced as more positive, rather than more negative, when they occurred prior to one's peers. Other results were partially accounted-for by the off-time hypothesis, including the finding that the late occurrence of a first relationship and trying drugs were rated less positively than when these transitions occurred on-time or early. However, adolescents who experienced these transitions late did not rate them as any more or less important than those who experienced them on time, which would not fit with the hypothesis that being out-of-synch with one's peers is stressful.

Instead, findings from Study 1 may be better explained by the gradual consolidation hypothesis, which suggests that experiences that occur later in adolescence have less of an impact than those that occur earlier. This theory is not based on the assumption that early occurring transitions are more stressful, only that they have a greater impact, thereby accounting for the finding that having a first relationship and trying drugs were experienced as more important and more positive when they occurred early versus late. The gradual consolidation hypothesis also accounts for the finding that first love was experienced more positively by those who experienced it early.

An additional finding relevant to social timing was that being out-of-synch with one's peers on first love was related to increased distress in adolescents. Due to the correlational nature of the current study, it is impossible to concluded whether

experiencing first love before or after ones' friends actually causes higher levels of distress, or whether those who are more distressed are more likely to report that they were off-time on this transition. In addition, there may be a third factor that is responsible for the observed relationship, such as broader socialization difficulties in those who are off-time. However, this finding is significant in that those individuals who perceive that they have experienced first love either earlier or later than most of their friends may be at increased risk for functional difficulties.

Simultaneity of Transitions. Previous studies of adolescent transitions have generally been limited to examining the impact of one transition in isolation or, at best, the co-occurrence of two transitions (Graber & Brooks-Gunn, 1996). The second study in the current research examined the effects of co-occurring transitions, and found this element of timing to be related to different measures of the experience and impact of the academic transitions in middle versus older adolescents. In adolescents starting high school, the co-occurrence of transitions was inversely related to adolescents' average grades before the transition, meaning that adolescents with lower grades at the end of junior high school experienced a greater number of transitions in the 10 months that followed. In adolescents starting university, the co-occurrence of one or more transitions was related to increased levels of distress immediately following the transition, and to how stressful the school change was perceived to be overall.

One way to understand these group differences is to consider the nature of transitions that might be experienced by each group. In the group starting university, it is

likely that the most frequently experienced transition was moving out of the parental home for the first time. Findings from the second study indicated that those who moved out at the same time as starting university did not report significantly higher levels of stress than those who remained in their parents' homes. However, it may still be the case that moving out for the first time, particularly when this occurs at the same time as additional transitions in other domains, accounts for higher distress immediately following the start of university, and higher stress associated with starting university.

In adolescents making the transition to high school, academic functioning before starting high school was the only measure related to the occurrence of one or more transitions. In understanding this association, it is necessary to consider that the measure of academic functioning preceded the occurrence of the additional transitions. Considering this, one explanation for this finding is that lower-achieving adolescents tended to engage in more exploratory behaviour, such as starting to drink, experiment with drugs or pursue intimate relationship, at the time of starting high school. While this assumption remains to be tested, studies indicating that alcohol and marijuana use peak following the transition to high school (e.g., Johnston, O'Malley & Bachman, 1991) would support this interpretation. It is important to note that if this is the case, such behaviour does not appear to have been to the detriment of post-transition academic functioning, because number of co-occurring transitions was not related to grades six months after the start of high school. Nonetheless, this interpretation suggests that

individuals who show weaker academic performance might view the start of high school as opportunity for experimentation.

The moderating effects of co-occurring transitions were also tested in the second study in order to examine whether functioning in the period following either academic milestone was affected by the simultaneous occurrence of other transitions. Findings indicated that in the middle but not the older group, adolescents who experienced one or more transitions at the same time as the school change showed a decline in their perceived academic competence during the post-transition period; those who did not experience any concurrent transitions did not change in their academic competence over this time. Therefore, it appears that younger adolescents may in fact be more vulnerable to the impact of multiple changes.

Sequencing. The third timing factor examined in the current program of research was the impact of experiencing a transition out of order in the expected developmental sequence. The current research was the first to test the assumption that adolescent transitions occur according to typical sequences and that disruptions to these sequences are related to outcome. In examining the order of three transitions related to interpersonal intimacy in the first study, the majority of adolescents were found to experience a first relationship before losing their virginity. The finding that experiencing a disruption to this typical sequence was experienced as more negative and to believing that losing virginity is less important to adolescents' identities may have important implications for prevention efforts.

The Experience of Transitions from Adolescents' Perspectives

The current research was the first to investigate how adolescents actually experience a number of developmental milestones. The Adolescent Transition Questionnaire (ATQ) was developed for the purpose of assessing this in the first study. The use of the ATQ allowed for investigation of the experience of a number of transitions in terms of their affective impact and their importance to adolescents' identities. The investigation of adolescents' experiences of transitions was expanded in Study 2 with the addition of various dimensions on which to evaluate such events. The added dimensions included how well the event matched with adolescents' expectations, how much it made adolescents feel like an adult, and the degree of stress associated with the event overall. The creation of a measure of experience that could be applied to any developmental transition allowed for a number of meaningful comparisons, which are highlighted here.

First, the experiences of transitions could be compared in terms of the relative rank of each event on the dimensions of affective impact and importance to identity. Findings from the first study indicated that transitions in the domains of intimate relationships and individuation were the most positive experiences and the most important to adolescents' identities of all the transitions examined. These results are in keeping with research indicating that individuation and the formation of intimate relationships are the primary tasks of this developmental phase (e.g., Paul & White,

1990). Also consistent with this was the finding that transitions related to interpersonal loss were the most negative experiences of all.

Second, obtaining average ratings of importance and affective impact of transitions allowed for comparisons of the experience of transitions over the two studies. Comparing the experience of the academic milestones investigated in Study 2 to the transitions examined in Study 1 revealed that starting high school and university ranked among the most positive events overall. That is, based on average ratings of affective impact, academic milestones ranked as the second most positive transitions, exceeded on this dimension only by the transition of feeling respected by one's peers for the first time. This kind of perspective on adolescent experiences dramatically challenges the commonly held assumption that academic milestones are experienced as negative.

The use of a common measure of experience that can be applied to all transitions also permits for comparisons across different groups of adolescents. For example, gender differences were found in how transitions were experienced in Study 1. Boys rated the experience of puberty, losing their virginity and getting drunk as more positive than girls did. Boys also rated puberty and getting drunk as more important to their identity than girls did. In Study 2, differences between older and middle adolescents were explored by examining how the occurrence of transitions in the academic domain was experienced in each group. Results showed that transitions were generally experienced very similarly in the two groups, although the transition to university was slightly more stressful.

Cross-sectional comparisons between older and middle adolescents also indicated that there were similarities and differences in the pattern of association between the various dimensions of the experience. In terms of similarities, both academic milestones were viewed as transitions by the majority of adolescents in each group, and were generally experienced as very positive events. Those adolescents for whom making an academic transition represented a step toward the attainment of adult status tended to have a more positive experience and also to believe that the event was more important to who they were, regardless of whether they were making the transition to high school or university. In addition, being better prepared for the academic transitions was related to having a more positive, or less stressful, experience.

Examination of the differences between the middle and older groups revealed that starting university was experienced as slightly more stressful than starting high school, possibly due to the sharp drop in grades that was associated with this transition. For younger adolescents, the overall level of stress associated with starting high school was related to how positive or negative the experience was perceived to be shortly after the transition. For older adolescents, other factors may have been more important in determining how stressful starting university was, including viewing the transition as less important to identity.

Methodological Strengths and Weaknesses

Strengths. One of the major strengths of the current research was that adolescents' experiences of transitions were examined separately from the impact of

transitions on functioning, unlike previous studies that have made assumptions about how transitions are experienced based on their impact. Findings clearly demonstrate that adolescents' perceptions of such events are often distinct from functional outcomes. This finding has implications for theories about the impact of transitions, in which assumptions about the experiences of transitions are based on adolescent functioning. In addition, findings indicating that the subjective impressions of transitions are distinct from their impact on functioning suggest that both should be considered in planning interventions. For example, results suggest that targeting only those adolescents who are distressed by a school transition might mean that adolescents who are experiencing functional difficulties are overlooked.

Secondly, the current research introduced a novel method of assessing adolescent transitions. The utility of the ATQ was demonstrated in the first study, when assessment of the experience and self-perceptions of timing of 10 transitions was made possible using this tool. The second study demonstrated that the format of the ATQ is easily expanded-upon to include additional developmental transitions, as well as dimensions of the experience of such events. As discussed earlier, this measure allowed for multiple comparisons of the impact and experience of transitions across events and groups of adolescents.

Third, this research demonstrated the validity and utility of a simple methodology for categorizing adolescents' timing on transitions, based on their self-perceptions. Although this approach yielded fewer results than predicted, this methodology was

nonetheless shown to be valid and useful in understanding how timing compared to one's social referent may affect the experience and impact of transitions.

A final strength of the current study was that transitions were not considered in isolation of each other, as has often been the case in the research literature. Instead, both studies in the current program of research were designed to examine aspects of the interrelatedness of transitions, thereby attempting to account for the context in which developmental changes occur.

Weaknesses and Suggestions for Future Research. A number of methodological weaknesses have previously been discussed at length in the two studies. These included the reliance on self-report measures and the need to examine the psychometric properties of the ATQ before firm conclusions can be drawn. An additional limitation of both studies was the fact that it is not possible to know the extent to which findings are generalizable to other adolescents due to the homogeneity of the sample. These concerns could be addressed by collecting a broader base of normative data on the ATQ, and validating this measure, preferably with cross-informant reports.

An additional limitation was that, while the current research attempted to address contextual factors in development by assessing the effects of timing, other contextual factors also likely affect the impact and experience of transitions. Examination of individual, peer, family, and community characteristics that may affect adolescents' experiences of transitions is necessary in order to refine predictions about developmental outcomes (Galambos & Leadbeater, 2000).

Clinical Implications

The current research emphasized the importance of considering factors related to the timing and sequencing of transitions in understanding the experience of adolescents, and how those who deviate from the norm in terms of timing or sequencing of transitions may be at greater risk for difficulties during this developmental period. Results demonstrate the utility of taking into account adolescents' experiences of transitions, in addition to the impact of transitions on functioning, rather than relying on assumptions about the effects of such factors on adolescents.

Moreover, conclusions based on the results discussed herein have implications for planning interventions. Findings indicate that interventions targeting adolescents should include a focus on transitions as part of general health and well being, in addition to being a potential starting point for mental health problems. Adolescents who perceive that they are out-of-synch with their peers in experiencing first love may be a risk factor for increased functional difficulties. Similarly, the impressions left by early experimentation with drugs, including the belief that this event is important to one's identity, may offer an important starting point for drug prevention efforts. Finally, because the co-occurrence of transitions at the time of starting high school may be related to decreases in adolescents' academic self-competence, youth who are considered to be at risk of academic difficulties may benefit from being informed about the risk associated with increased experimentation during this transitional time.

Appendix A

Adolescent Transition Questionnaire (ATQ)

This is a questionnaire that asks you about experiences you may have had. Some of these questions are personal and may make you uncomfortable. Please keep in mind that your answers are completely anonymous and try to answer each question as well as you can.

What is your gender ? **(circle one)** Male Female

How old are you? _____ years

For each item on the rest of this questionnaire, please indicate:

1. How old you were when the experience occurred. If it has not occurred, please indicate this by placing a check mark (3) after the statement "If this has not yet happened, check here:"
2. Rate the quality of the experience by circling the appropriate number, with 0 = Negative experience and 6 = Positive experience.
3. Rate how important the experience was to who you are now, with 0 = Not at all important and 6 = Very important
4. Some items have an additional question asking you for a brief description or to compare yourself to your friends on a particular experience. Please do your best to answer these questions as well.

I fell in love for the first time

How old were you? ____years. If this has not happened, check here: ___ and go to next item.

What kind of an experience was this for you? 0 1 2 3 4 5 6
Negative Positive

How important was this experience to who you are now? 0 1 2 3 4 5 6
Not important Very Important

Compared with your friends, this happened (check one)
____ before most of your friends
____ around the same time as most of your friends
____ after it most of your friends
____ not sure

The first time I felt like people my age respected who I am

How old were you? ____years. If this has not happened, check here: ___ and go to next item.

What kind of an experience was this for you? 0 1 2 3 4 5 6
Negative Positive

How important was this experience to who you are now? 0 1 2 3 4 5 6
Not important Very Important

I got dumped or my heart was broken for the first time

How old were you? ____years. If this has not happened, check here: ___ and go to next item.

What kind of an experience was this for you? 0 1 2 3 4 5 6
Negative Positive

How important was this experience to who you are now? 0 1 2 3 4 5 6
Not important Very Important

I got drunk for the first time

How old were you? ____years. If this has not happened, check here: ___ and go to next item.

What kind of an experience was this for you? 0 1 2 3 4 5 6
Negative Positive

How important was this experience to who you are now? 0 1 2 3 4 5 6
Not important Very Important

Compared with your friends, this happened (check one)
____ before most of your friends
____ around the same time as most of your friends
____ after it most of your friends had done it
____ not sure

I lost my virginity

How old were you? ____years. If this has not happened, check here: ___ and go to next item.

What kind of an experience was this for you? 0 1 2 3 4 5 6
Negative Positive

How important was this experience to who you are now? 0 1 2 3 4 5 6
Not important Very Important

Compared with your friends, this happened (check one)
____ before most of your friends
____ around the same time as most of your friends
____ after it most of your friends
____ not sure

I first realized I had "hit puberty"

How old were you? ____years. If this has not happened, check here: ___ and go to next item.

What kind of an experience was this for you? 0 1 2 3 4 5 6
Negative Positive

How important was this experience to who you are now? 0 1 2 3 4 5 6
Not important Very Important

Compared with your friends, this happened (check one)
____ before most of your friends
____ around the same time as most of your friends
____ after it most of your friends
____ not sure

I had my first "real" boyfriend/girlfriend

How old were you? ____years. If this has not happened, check here: ___ and go to next item.

What kind of an experience was this for you? 0 1 2 3 4 5 6
Negative Positive

How important was this experience to who you are now? 0 1 2 3 4 5 6
Not important Very Important

Compared with your friends, this happened (check one)
____ before most of your friends
____ around the same time as most of your friends
____ after it most of your friends
____ not sure

I first tried marijuana or another street drug

How old were you? ____years. If this has not happened, check here: ___ and go to next item.

What kind of an experience was this for you? 0 1 2 3 4 5 6
Negative Positive

How important was this experience to who you are now? 0 1 2 3 4 5 6
Not important Very Important

Compared with your friends, this happened (check one)
____ before most of your friends
____ around the same time as most of your friends
____ after it most of your friends had done it
____ not sure

The first time I felt that no one could understand me

How old were you? ____years. If this has not happened, check here: ___ and go to next item.

What kind of an experience was this for you? 0 1 2 3 4 5 6
Negative Positive

How important was this experience to who you are now? 0 1 2 3 4 5 6
Not important Very Important

There was a tragedy in my life which has changed who I am

How old were you? ____years. If this has not happened, check here: ___ and go to next item.

Please briefly describe this tragedy: _____

_____

What kind of an experience was this for you? 0 1 2 3 4 5 6
Negative Positive

How important was this experience to who you are now? 0 1 2 3 4 5 6
Not important Very Important

I made a major life decision on my own

How old were you? ____years. If this has not happened, check here: ___ and go to next item.

Please briefly describe this decision: _____

What kind of an experience was this for you? 0 1 2 3 4 5 6
Negative Positive

How important was this experience to who you are now? 0 1 2 3 4 5 6
Not important Very Important

My high school is a lot bigger than my junior high (or elementary if you didn't have junior high)

How old were you? ____years. If this did not happen, check here: ___ and go to next item.

What kind of an experience was this for you? 0 1 2 3 4 5 6
Negative Positive

How important was this experience to who you are now? 0 1 2 3 4 5 6
Not important Very Important

Appendix B

Self-Others Questionnaire

Below is a list of words that describe different ways in which you might think about yourself in comparison to others. Consider each word describing how you think of yourself relative to others. Use the scale provided to record your answers. For example, if you feel very likeable compared with others, circle 5; if you feel just a bit more likeable than others, circle 1; if you feel very unlikeable compared to others, circle - 5

In comparison to others, I generally feel I am...

inferior	-5	-4	-3	-2	-1	1	2	3	4	5	superior
unlikeable	-5	-4	-3	-2	-1	1	2	3	4	5	likeable
different than others	-5	-4	-3	-2	-1	1	2	3	4	5	the same as others
less talented	-5	-4	-3	-2	-1	1	2	3	4	5	more talented
weaker	-5	-4	-3	-2	-1	1	2	3	4	5	stronger
unconfident	-5	-4	-3	-2	-1	1	2	3	4	5	confident
undesirable	-5	-4	-3	-2	-1	1	2	3	4	5	desirable
unattractive	-5	-4	-3	-2	-1	1	2	3	4	5	attractive
an outsider	-5	-4	-3	-2	-1	1	2	3	4	5	an insider
uninteresting	-5	-4	-3	-2	-1	1	2	3	4	5	interesting
incompetent	-5	-4	-3	-2	-1	1	2	3	4	5	competent
unpopular with others	-5	-4	-3	-2	-1	1	2	3	4	5	popular with others
not respected by other	-5	-4	-3	-2	-1	1	2	3	4	5	respected by others
not admired by others	-5	-4	-3	-2	-1	1	2	3	4	5	admired by others

Appendix C
Items used in Adolescent Transition Survey (ATS)

1) I fell in love for the first time

2) I got dumped or my heart was broken for the first time

3) The first time I found a group of friends that I really fit in with

4) I got drunk for the first time

5) The first time that I realized that I have a good role model in my life

6) I lost my virginity

7) I got my first paying job

8) I first realized I had "hit puberty"

9) I had my first "real" boyfriend/girlfriend

10) I started feeling like I was attractive to potential romantic partners

11) I first tried marijuana or another street drug

12) I smoked my first cigarette

13) The first time I felt that no one could understand me or what I was going through

14) I first moved out of my parent(s)' or caregiver's home

15) I made a major life decision on my own

16) I had a child for the first time

17) The first time I found something that I am really good at, that could potentially be a career

18) The first time I made a long-term commitment to the person I love, for example became engaged, got married or moved in together

19) The first time I felt like people my age respected who I am

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