Developmental and Current Relational Influences on Motivations Toward Academic Identity

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I hereby declare that I am the sole author of this thesis. This is a true copy of the thesis, including any required final revisions, as accepted by my examiners.

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Elizabeth McFadden

Abstract

The purpose of the present study was to assess the developmental and current relational variables that play a role in the development and maintenance of academic identity. Specifically, I was interested in identifying variables that are related to adopting a more autonomously motivated academic identity as previous research indicates that engagement in more autonomously motivated activities is related to greater mental and physical health and greater persistence and performance within the activity. The current study considered the role of developmental autonomy support as well as pressure and control from current relational partners in relation to participants' current motivation towards their schoolwork. Results showed support for the developmental hypotheses, such that greater autonomy support was significantly associated with greater autonomous motivation towards academics. Pressure and control from current relational partners was not consistently related to participants' relative autonomy, but was in many instances related to amotivation, such that greater pressure was related to greater amotivation.

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Identity serves both individual and social functions. That is, identity provides a sense of uniqueness by establishing a definition of who one is as an individual, and it also provides a sense of connectedness and belonging to social groups (Adams & Marshall, 1996). An extensive body of research has focused on identity formation (e.g., Erikson 1968, Marcia, 1966, Waterman, 2004). However, while previous research has attempted to define successful and unsuccessful outcomes of identity development by considering whether a coherent identity has been achieved, the current study focuses on processes that may underlie identity formation and aims to delineate those processes that are associated with healthy functioning. Specifically, I examine the importance of relational influences on identity development and maintenance. Although people have multiple identities across different life domains, I focus on academic identity, as this domain often underlies later vocation, which consumes a great deal of time and energy in daily living, and has particular influence on a person's healthy functioning.

Models of Identity Formation

Erikson (1959) highlighted the importance of identity development as part of his eight-stage theory of psychosocial development across the life span. Erikson argued that each stage of development involves a developmental task to be accomplished. This task takes on the form of a crisis or struggle between a successful and unsuccessful resolution, with success essential for engagement in subsequent stages and thus building the foundation for personal and social growth and development. During adolescence the central struggle is to form a coherent identity, with failure to do so resulting in role confusion. Failure to form a coherent identity also hinders

progress to the next stage, which involves developing intimacy with others. Thus, according to Erikson, when a person fails to develop a coherent identity, not only will the person fail to develop individuality but he or she will also be less likely to benefit from the positive affordances of close, connected relationships (Erikson, 1959). Although Erikson's conceptualization has been the foundation for a great deal of research, his construal of identity is quite broad and is not well operationalized for empirical study. Additionally, the dichotomous distinction of success or failure (to achieve an identity vs. remain confused in one's role) does not sufficiently capture nuances in identity formation, nor changes in the identity over time.

Much of the empirical work in identity theory has been conducted by Marcia (1966) who introduced the identity status paradigm. This paradigm defines four potential identity resolutions based on the presence or absence of exploration and commitment processes. Exploration refers to actively questioning and evaluating the viability of a variety of identity alternatives, while commitment refers to making a clear and firm decision towards an identity alternative and engaging in the activities associated with the identity. Those who are *identity diffuse* have not made a commitment and are not currently exploring alternatives, although they may have in the past. People engaged in an identity *moratorium* have not yet made a commitment to an identity though they are actively exploring alternatives, while those who do not engage in active exploration yet commit to a particular option are said to have *foreclosed* their identity. Finally, *identity achievement* is evidenced when an individual has undertaken substantial exploration and a commitment has been made to the most favorable option. Unlike Erikson's perspective, identities may be flexible, as future possibilities may cause a shift which reinstates the exploration and commitment processes (Marcia, 1966, 1994). Thus Marcia's paradigm allows for greater flexibility and change over time.

Theoretically, identity status should have implications for well-being. While identity achievement would be expected to be most strongly associated with positive health, results across numerous studies using a variety of well-being markers have been mixed (see Marcia, 1980; Meeus, Iedema, Helsen, & Vollebergh, 1999; Waterman, 1992 for reviews). Generally, research has shown that those in the moratorium status who are currently "in crisis" report the highest levels of anxiety, while those who have made a commitment of some sort report the lowest levels of anxiety. Commitment has also been shown to be associated with greater self-esteem, with identity achievers and those who foreclose their identity tending to show higher self-esteem than those in the moratorium and identity diffuse statuses. Some research suggests that engaging in exploration is the important element in determining greater self-esteem (Breuer, 1973). However, several studies find no significant differences in either anxiety or self-esteem across identity status.

Clearly, the identity status paradigm alone cannot reliably predict how identity is linked to personal well-being. Indeed, in a review of over 30 years of research employing the identity status paradigm, Waterman (2004) reported that even within the group of individuals who would be classified as having achieved their identity, there are significant differences between those for whom identity provides significant meaning and vitality and those for whom identity provides a more instrumental purpose. These observations led Waterman to examine a third dimension – personal expressiveness – to distinguish between more and less healthy identities. Waterman views personal expressiveness as a subjective experience of intrinsic motivation within the context of identity-related activities. Intrinsic motivation refers to engaging in an activity because of its inherent interest and enjoyment (Ryan & Deci, 2000). Waterman assesses the subjective experience of intrinsic motivation by asking participants whether identity-related

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activities provide them with a sense of really being alive, whether they feel more intensely involved when engaged in these activities, whether the activities provide a strong feeling that this is who they really are and what they were meant to do, whether they feel more complete or fulfilled when engaging in these activities, and whether they feel a special fit when engaged in these activities (Waterman, 2004).

While incorporating activities which provide such intrinsically rewarding experiences into one's identity is undoubtedly conducive to greater well-being, many identity-related activities are not intrinsically motivated yet may, nonetheless, be conducive to greater well-being. The perspective of Self-Determination Theory (SDT) highlights the importance of intrinsic motivation, but also offers a more differentiated perspective on motivation that may explain the positive and negative well-being outcomes of engaging in activities for a variety of reasons. Further, SDT provides a solid base of research identifying relational factors which contribute to the development of motivation and well-being (Deci & Ryan, 2000; Ryan & Deci, 2000).

Self-Determination Theory (SDT) perspective on identity formation

According to Self-Determination Theory, the element that differentiates whether an identity contributes to or detracts from well-being is the extent to which it is autonomously motivated. Autonomous motivation refers to the extent to which people engage in activities willingly and of their own volition. For any given identity, there are a range of reasons for engaging in activities that develop and maintain the identity which reflect varying degrees of autonomous motivation. For some, identities will develop directly from natural inclinations and interests that are discovered early on in life, reflecting intrinsically motivated pursuits. Others

will construct identities based primarily on activities that are personally valued. Identities can also be based on activities and values that are imposed by others or which are believed to demonstrate that one is an important person (La Guardia, 2008; Ryan & Deci, 2003). The range of autonomous reasons for engaging in activities reflects a continuum of relative autonomy.

According to SDT, *intrinsic motivation* represents the most autonomously enacted behaviours as they are spontaneous and are an expression of people's natural tendency to engage their environment. When intrinsically motivated, people are moved to act for the inherent interest and enjoyment derived from the behaviour itself. There are, however, many actions and behaviours that are not innately interesting and engaging but which are instrumental in obtaining other desirable outcomes. These are *extrinsically motivated* behaviours. According to SDT, extrinsic motivation varies considerably in the extent to which it is experienced as autonomous, or willingly engaged. *Externally regulated* activities, which are experienced as the least autonomous, are engaged solely to obtain external rewards or avoid punishments that are direct contingencies in the social environment. Sometimes, however, the controlling voice offering rewards and punishment comes from within the individual, coercing behaviour in order to maintain a sense of self-worth and pride or to avoid guilt and shame. This reflects *introjection,* where the value of activities and behaviours are not incorporated into one's own value system, but rather, the values of others are taken in and maintained in their original form (i.e., "swallowed whole"). Behaviours that are personally valued yet are still performed in the service of external outcomes are *identified regulations* and those that are fully assimilated and in harmony with other aspects of the self are termed *integrated*. These are experienced as the most autonomous of extrinsically motivated behaviours. In addition to these motivations varying in autonomy, the autonomy continuum also includes *amotivation*, in which the person either lacks

the ability to carry out behaviours or views the outcomes as not contingent on their behaviours (Deci & Ryan, 2000; Ryan & Deci, 2000).

While people may be motivated by all of these reasons, the emphasis that they place on more or less autonomous motives determines their relative autonomy. Essentially, people's behaviours, attitudes, and beliefs are more autonomous when they have been more fully internalized and integrated into their sense of self. Internalization involves transforming external regulations into personally endorsed attributes or integrating experiences and societal values into a sense of self (Grolnick, Deci, & Ryan, 1997).

Numerous studies have demonstrated that greater relative autonomy for activities is associated with greater well-being in general (Ryan, Deci, & Grolnick, 1995), and more specifically, with greater feelings of vitality (Nix, Ryan, Manly, & Deci, 1999) and self-esteem (Deci & Ryan, 1995). Further, research has shown that greater relative autonomy is associated with greater persistence and performance within an activity (Black & Deci, 2000; Grolnick, Ryan, & Deci, 1991). Specifically within the learning environment, greater autonomous motivation, has been associated with lower rates of school drop-out (Vallerand, Fortier, & Guay, 1997), deeper learning (Grolnick & Ryan, 1987), greater creativity (Koestner, Ryan, Bernieri, & Holt, 1984), higher achievement (Soenens & Vansteenkiste, 2005) as well as greater general well-being (Black & Deci, 2000; Levesque, Zuehlke, Stanek, & Ryan, 2004).

In sum, the SDT perspective suggests that the type of motivation underlying identity salient activities has important implications for performance within the identity domain as well as for overall well-being. When activities are not willingly engaged, people feel pervasively pressured and controlled, and negative psychological and performance are evidenced.

The question that remains to be answered is how some people adopt identities which are more autonomously motivated while others are more controlled in their day to day lives. In the present study, I was interested in identifying interpersonal factors that affect whether identities adopted are more or less autonomously engaged. Undeniably, people's relationships have a profound impact on their activities, including those that underlie identity development. According to Erikson (1968), selecting an identity to pursue is dependent on social and cultural factors, with support and encouragement often provided for a constricted range of options. Influences on the development of Marcia's identity statuses have focused on the importance of supportive parenting generally (Jacobson, 1977), supports for competence (Gilmore, 1970), and attachment security for exploratory behaviour (Benson, Harris, & Rogers, 1992; Schultheiss & Blustein, 1994) for identity achievement.

While each of these factors may influence the development and maintenance of identity, SDT would suggest that the extent to which the social environment supports basic psychological needs for autonomy, competence, and relatedness will determine whether identities pursued lead to health and growth. Support for these needs is important not only during the developmental process but remain centrally important once an identity has been chosen. For the purpose of this study, I focus specifically on the support for autonomy. Further, I focused specifically on how early relational contexts and current relationships affect identity exploration processes. I propose two complementary models of early developmental and current relational supports that are central to the development and maintenance of an autonomous orientation toward identity.

Developmental Model

Childhood is a time for exploration and seeking out inherently enjoyable, or intrinsically motivated activities through play (Piaget & Cook, 1952). This exploration is important for the development of identity, and like all developmental processes, requires nurturance from central caregivers such as parents. The same supports that enhance intrinsic motivation also facilitate the acceptance and endorsement of socially sanctioned values and behaviours, including potential identity options.

Research from the SDT tradition has shown that autonomy support is important for promoting intrinsic motivation, as well as internalization and integration of extrinsically motivated behaviours (Deci, Eghrari, Patrick, & Leone, 1994; Grolnick & Ryan, 1989, Grolnick, Ryan, & Deci, 1991; Niemiec et al., 2006). Autonomy support involves encouraging children to make their own choices and participate in decisions, rather than controlling them by dictating their pathways and motivating achievement through pressure and the use of contingent rewards and punishments (Assor, Roth, & Deci, 2004; Deci & Ryan, 1985). The failure to support autonomy on the part of parents can be either explicit (e.g., threats of love withdrawal, forbidding activities or denying access to opportunities) or more subtle in nature (e.g., provision of praise/rewards and involvement contingent on the nature of activities). Both deter feelings of autonomy and convey to children that their worth is dependent on being successful within a prescribed set of activities (La Guardia, 2008). Whereas controlling parenting often leads children to introject activities and values, autonomy supportive parenting is more conducive to having children identify with and integrate activities and values. In other words, autonomy support contributes to greater internalization and autonomous motivation (Grolnick, Deci, & Ryan, 1997).

To extend the scope of how support for discrete activities (or lack thereof) may translate into identity development, autonomy support may be especially important in early exploration processes. That is, autonomy support allows children to feel secure in trying out a variety of options that may help to define activities, values, and behaviours that become central parts of the self. Indeed, research has demonstrated that even in infancy, children with more autonomy supportive mothers demonstrate more exploration and persistence in play activities than children whose mothers are more controlling (Grolnick, Frodi, and Bridges, 1984). Parallel results are found in children who are 5 and 6 years of age, as evidenced by the children's own greater self-reported interest in play activities with mothers who are more autonomy supportive (Deci, Driver, Hotchkiss, Robbins, and Wilson, 1993).

Within the academic domain, several studies have indicated that parental autonomy support is conducive to greater autonomous motivation, as well as greater well-being and performance outcomes (Grolnick & Ryan, 1989; Grolnick, Ryan, & Deci, 1991; Niemiec et al., 2006). For example, Grolnick & Ryan (1989) assessed the importance of parental autonomy support for children in grades three through six with respect to their self-rated academic motivation, teacher rated competence and adjustment, as well as grades and achievement scores. In this study, autonomy support was assessed through structured individual interviews with mothers and fathers, in which they were asked about the techniques they use to motivate their children to engage in activities such as doing homework, chores, and going to bed on time. Responses were rated based on parents' use of autonomy-oriented techniques, as well as the extent to which they value autonomy and are nondirective (i.e., including the child in decisions and problem solving). Results showed that children of parents who were more autonomy supportive rated themselves as more autonomously motivated for schoolwork, had teacher

ratings of greater competence and adjustment, as well as higher grades and achievement scores (Grolnick & Ryan, 1989).

Further, Grolnick, Ryan, & Deci (1991) assessed the relation of children's perceptions of maternal and paternal autonomy support to understanding their own personal influence on their own outcomes, perceived competence in school, motivation for academics, as well as to teacher ratings of the children's academic competence, grades, and achievement. Children who perceived their mothers and fathers to be more autonomy supportive were more autonomously motivated with respect to their schoolwork, perceived themselves to be more competent, and demonstrated a greater understanding of the sources of control of academic outcomes, all of which, in turn were related to greater school achievement.

Finally, Niemiec, Lynch, Vansteenkiste, Bernstein, Deci, & Ryan (2006) considered the influence of autonomy support during development on later academic life. Within a college student sample, perceptions of parental autonomy support received during development were used to predict students' current autonomous motivation to enter college and well-being. Results showed that greater perceived autonomy support during development predicted greater well-being. Further, this relationship was mediated by students' autonomous motivation for entering college. In other words, parental supports encouraged the development of autonomous motivation for academics which in turn enhanced well-being (Niemiec, et al., 2006).

In order to consider the role of autonomy support in development of identity, the study of autonomy support specific to the identity development process is necessary. Particularly, as Marcia's paradigm highlights the importance of exploration, I first wanted to examine whether parental support for the exploration of diverse identity options and exposure to a variety of opportunities are important components to developing autonomous motivation for academic

identity. Early parental supports are expected to not only encourage the discovery of intrinsically motivated identity options but also generate a sense of choice and volition with respect to identity development, thereby promoting internalization of academic values and activities. Conversely, when parents are intrusive and exert pressure on their children within their pursuit of identity options, their children would be expected to feel controlled and develop less autonomous academic identities.

Notably, even after an identity has been chosen, motivation for the activities involved can fluctuate. As Marcia suggests, identities are flexible and later experiences can impact one's perspective on important values and goals. Thus current relational supports will likely influence feelings of autonomy within activities and thus on the maintenance of identity.

Current Relationships Model

As children develop they spend less time with their parents and more time with their friends (Larson & Richards, 1991). Undoubtedly, while parents will continue to play a role, friends and teachers become important figures that may also centrally influence identity maintenance. Relationships with friends can influence academic motivation in several ways. Research has demonstrated that having a greater sense of belonging and support from fellow students contributes to greater expectancies for academic success as well as greater intrinsic interest and value for academics (Goodenow, 1993). Friendships can provide instrumental resources such as information and advice that encourage academic achievement (Sieber, 1979). Friends may also assist students in coping with distressing aspects of academic life. For example, emotional support from friends has been shown to ease school adjustment and adaptation when transitioning to a new school (Berndt, Hawkins, & Jiao, 1999). However, while peer

relationships may positively influence activities, they may also negatively impact academic motivation and achievement. For example, adolescent students who have friends that are low-achievers demonstrate greater declines over a school year in achievement and intrinsic value for school than did students who have high-achieving friends (Ryan, 2001).

The impact of teachers on academic motivation and achievement has also been studied. Teacher support has been linked to greater interest in school and class activities (Wentzel, 1998) as well as to greater achievement, directly, as well as indirectly through greater academic engagement (Chen, 2005). Students who characterize their relationships with teachers as providing more security as well as emotional support, in general and in relation to academics specifically, demonstrate greater academic coping, greater relative autonomy for academics, and greater engagement in academic pursuits (Ryan, Stiller, & Lynch, 1994).

As during early development, autonomy support continues to be important for encouraging later autonomous motivation for academics. For example, Williams and Deci (1996) studied the influence of autonomy support in teaching medical students how to interview their patients in a more supportive and patient-centered manner. Two studies were conducted to consider two separate experimental conditions, one at a university that emphasized this approach to interviewing and another that did not have an explicitly stated orientation toward this approach. Students at both schools took an interviewing course in small groups. In both conditions, students who rated their professors as more autonomy supportive demonstrated increases in relative autonomy and perceived competence with respect to the interviewing course. Students at the university that emphasized the value of supportive patient-centered interviewing also demonstrated greater internalization of the value of this technique and

conducted interviews in this style more effectively when they had a professor who was more autonomy supportive (Williams & Deci, 1996).

Black and Deci (2000) extended this research in their study of students taking a course in organic chemistry. In this study, greater autonomy support from instructors explained significant increases in relative autonomy for studying organic chemistry, perceived competence, interest and enjoyment, as well as decreased anxiety. Those students who rated their instructors as more autonomy supportive also performed significantly better in the course. Interestingly, this effect of autonomy support on performance was moderated by student's initial level of relative autonomy for the course such that those who started out as less autonomous showed the greatest improvement with an autonomy supportive instructor. Notably, all of these relationships remained significant when accounting for students' abilities (Black & Deci, 2000).

In the present study, I predict that central current relational figures such as parents, friends, and teachers/professors will influence the maintenance of autonomously engaged identity. Specifically, autonomy support from these figures is expected to continue to promote a sense of being willingly engaged in academic activities whereas control and pressure will undermine feelings of autonomy for one's academic identity. While autonomy support from partners may influence autonomous motivation, it is also likely that one's current motivational orientation will influence how individual's engage with their relational partners. Flum and Blustein (2000), suggest that exploration may facilitate autonomous motivation as the exploration process facilitates greater agency and self-understanding. Some research already provides evidence to this end. Soenens, Berzonsky, Vansteenkiste, Beyers, & Goossens (2005) has found that individuals who have an autonomous orientation actively seek out experiences and new information about themselves while those who have a controlled orientation tend to

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conform to norms and expectations of significant others (Soenens et al., 2005). Thus, the current

relationships model proposes that one's current motivational orientation will also play a role in

the extent to which participants conform to pressure from relational partners. Specifically,

students who have developed a more autonomous orientation may be less likely to conform to

pressure from relational partners while those who are less autonomous may be more likely to

yield to this pressure.

Students may experience pressure directly but also if they sense that dissolving their

current identity would lead to negative consequences for their relationships. That is, if students

are not fulfilled by their current identity but perceive that they would lose important relational

supports if they were to dissolve this identity, they may feel compelled to maintain it rather than

resume the exploration process. These feelings of pressure to maintain the identity are likely to

undermine autonomous motivation, as well as subsequent performance and interest in the

activities involved.

Role of Culture

SDT posits that autonomy is a universal need and thus applies across cultures. This has

led to criticism from other researchers who claim that autonomy is in opposition to more

collectivistic values such as relatedness and group cohesion (Iyengar & Lepper, 1999; Miller,

1997; Oishi, 2000), and is thereby merely a construct of importance among Western societies.

However, the manner in which these researchers operationalize autonomy is incongruent with

SDT's definition and demonstrates a general tendency to confuse the term with the notion of

independence and individuality. SDT has explicitly emphasized that people experience

autonomy when their behaviours are experienced as willingly engaged and when actions and

values are fully personally endorsed. The opposite of autonomy is not dependence but, rather, a sense of being compelled to behave or think in ways that are not congruent with one's own values and interests (Chirkov, Ryan, Kim, & Kaplan, 2003).

According to SDT, it is not the specific value, be it individualistic or collectivistic, that is of importance but, rather, it is the extent to which the value has been internalized and is personally endorsed that is important for healthy functioning. Indeed, the positive outcomes associated with autonomy have been found in collectivistic societies, such as China (Vansteenkiste, Zhou, Lens, & Soenens, 2005), Japan (Hayamizu, 1997; Tanaka & Yamauchi, 2000), and Korea (Sheldon, Elliot, Kim, & Kasser, 2001) as well as societies that are considered to be authoritarian or vertically collectivistic such as Russia (Chirkov & Ryan, 2001) and Bulgaria (Deci, Ryan, Gagne, Leone, Usunov, & Kornazheva, 2001). SDT holds that diverse cultural practices can be experienced as more or less autonomous, and that less autonomous motivation will be related to decreased well-being. However, they do acknowledge that the nature of some social values leads them to be less readily internalized. Specifically, vertical practices which emphasize adherence to hierarchical relations and which often require members of lower status to relinquish their autonomy in deference to those of higher status may be more poorly internalized (Chirkov, Ryan, Kim, & Kaplan, 2003). In the present study, while I do not assess different cultural groups nor the relative level of endorsement of cultural practices, I do assess whether students of different ethnic backgrounds show differences in how exploration supported in early development and how current relationships maintain academic identity.

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The Current Study

The current study investigates the relation of autonomy support received in childhood to the development of autonomous academic identity, as well the importance of autonomy support in current relationships for the maintenance of academic identity. Previous research has demonstrated that greater general autonomy support during development is conducive to greater autonomous motivation for academics (Grolnick & Ryan, 1989; Grolnick, Ryan, & Deci, 1991; Niemeic et al., 2006). I aim to replicate and expand on this research by looking at the influence of general autonomy support, as well as autonomy support that is more specific to the exploration process, on university students' current motivation towards the activities tied to their academic identity. I introduce a new scale that assesses two components of autonomy support specific to identity exploration --- support to explore diverse options and exposure to a variety of opportunities. This scale also assesses controlling parenting strategies, such as pressure and intrusiveness, which would presumably undermine autonomy. I hypothesize that greater general autonomy support and exploration specific autonomy support will be associated with greater current autonomous motivation towards the activities tied to academic identity, which will in turn be associated with greater overall well-being.

I also introduce a new scale which assesses autonomy support from current relational partners, including one's mother, father, a friend in the same academic program, a friend outside of the program, and a professor. This scale assesses three relational qualities that are likely to be experienced as controlling and would thus undermine participants' autonomous motivation towards academic activities. Students are likely to feel controlled when they perceive partners as intrusive within their academic life, when they experience more covert forms of pressure, such as a desire not to embarrass or disappoint relational partners, and when they perceive that failing to

maintain (i.e., dissolving) their academic identity would lead to negative effects for their relationship (thereby limiting the reinstatement of the exploration process). The more students report these pressures, the less autonomous they are expected to be with respect to their current academic activities.

I also hypothesize that greater autonomous motivation towards academic activities will be associated with higher academic performance, greater engagement in academics (i.e., time management and interest) and more positive coping with the stress of academics. Finally, I explore whether students differ in these relationships based on their ethnicity.

Method

Participants and Procedure

One hundred and twenty six undergraduate students ($N = 126$) enrolled in Engineering, Kinesiology, Biology, Biomedical Sciences, Biochemistry, Mathematics, and Computer Science programs at the University of Waterloo were recruited through the Cognition Paid Pool and through advertisements posted within these departments to complete online survey measures in exchange for a movie ticket voucher. These programs were chosen as they require an early and explicit commitment to career paths and because careers in these fields have fundamental tasks that may be inherently enjoyable and stimulating (intrinsically motivated) but also tend to offer more prestigious and well-paying positions (externally motivated). Fifteen participants did not adequately complete the measures, and were thus excluded from analyses. The final sample, consisting of 111 students (48 men, 63 women), ranged in age from18 and 24 years old ($M = 20.0$, $SD = 1.6$). Fifty six percent identified themselves as White ($N = 62$), 34% as Asian ($N = 38$), 5% as East-Indian ($N = 5$), and 5% as belonging to another ethnic group ($N = 6$).

Measures

Developmental Model Measures

Parental Support. The 22 item Perception of Parents Scale (POPS; Robbins, 1994) assesses student's perceptions of their mothers' and fathers' involvement during development, provision of support for autonomy, and warmth. Only the provision of autonomy support will be examined in this paper. Sample items include "My father allowed me to decide things for myself" and "My mother was usually willing to consider things from my point of view". Items were rated on a 7-point Likert-type scale, ranging from "*not at all true*" (1) to "*very true*" (7).

For each parent, the scale score was derived by calculating the mean of all items with higher scores indicating greater autonomy support. Although the scores between parents were moderately correlated ($r = .52$), I calculated a total parental autonomy support scale by calculating the mean of the parents' scores. This single score was consistent with the Identity Development Scale which asks only about parents generally. Internal consistency (Cronbach's alpha) was adequate for the combined subscales ($\alpha = .92$).

Identity Pursuit Support. The Identity Development Scale (IDS) was developed for this study to assess the impact of parents' attitudes toward and interactions within the child's identity pursuits. Items were initially generated to assess the extent to which parents were involved with academics and general identity pursuits, the level of structure and consistency they provided around these pursuits, the extent to which they provided a variety of opportunities for exploration and supported independent exploration of diverse identity options, and the extent to which the child was encouraged in stretching their competencies in these pursuits. Ninety four items were created to which participants responded on a 7-point Likert-type scale, ranging from "*not at all true*" (1) to "*very true*" (7). Principle axis factor analysis was conducted to assess the extent to which the items generated fit the defined factors. Scale refinement is discussed further in the results section upcoming and items for the emergent scales are shown in Table 1. Only those factors which focused on autonomy support specific to identity will be examined in this paper. Sample items for these factors include "My parents were able to provide me with many extra opportunities" (opportunities afforded), "I had a lot of support to explore possible interests" (support for exploration), and "I often felt like my parents were monitoring my activities to the point that it was intrusive" (intrusive involvement).

Current Relational Model Measures

Relationship Identity Support. Scales were developed to assess the quality of support provided by current relational partners for participants' identity pursuits. The same 27 items were rated for each participant's mother, father, a friend within the same program of study, a friend outside the participants' program of study, and a professor who has the greatest impact on their lives. Items were generated to assess the extent to which relational partners are supportive with respect to the participants' academic life, the extent to which academics is a central focus of the relationship, the effects on the relationship if the identity were dissolved (of the participant's volition or for a reason outside of their control), the extent to which partners are intrusively involved in the participants' academic life, and the extent to which participants feel pressured by partners to maintain the academic identity. A principle axis factor analysis was conducted to assess the extent to which the items generated fit the presumed factors. Scale refinement is discussed further in the results section upcoming and items for all factors are shown in Table 2. Only the factors of intrusive involvement, identity dissolution effects, and pressure to maintain the identity, which reflect forms of relational pressure and control, were examined in this paper. Sample items for these factors include "If I fail in this career my professor will feel ashamed" (pressure to maintain identity), "My friend is often meddling with my school business" (intrusive involvement), and "If I chose not to continue with my current program of study, my father would no longer regard me as highly as he does now" (identity dissolution effects). Responses were made on a 7-point Likert-type scale, ranging from "*not at all true*" (1) to "*very true*" (7).

Other Measures

Academic Motivation. The Academic Motivation Scale (AMS; Vallerand et al., 1992) asks students to rate 28 statements pertaining to their reasons for attending university. The AMS

is comprised of five subscales that together assess intrinsic motivation, extrinsic motivation (external, introjected, and identified regulation), and amotivation. Sample items include "For the satisfaction I feel when I am in the process of accomplishing difficult academic activities" (Intrinsic motivation), "Because my studies allow me to continue to learn about many things that interest me" (Identification), "Because of the fact that when I succeed in university I feel important" (Introjection), "In order to obtain a more prestigious job later on" (External regulation), and "Honestly, I don't know; I really feel that I am wasting my time in school" (Amotivation). Items were rated on a 7-point Likert scale, ranging from "*does not correspond at all*" (1) to "*corresponds exactly*" (7). For greater simplicity in analysis and discussion of results, a relative autonomy index (RAI) is calculated by combining ratings on each of the subscales [2 (Intrinsic motivation) + (Identified regulation) − (Introjected regulation) − 2 (external regulation)], with higher scores indicating greater autonomy for engaging in the academic subject matter. I also calculated a separate score for amotivation by taking the mean of the amotivation items.

Well-Being. Several indicators were chosen to assess markers of overall well-being. These included (1) the 7-item Subjective Vitality Scale (Ryan & Frederick, 1997), (2) the 10-item general self-esteem subscale of the Multidimensional Self-Esteem Inventory (MSEI; O'Brien & Epstein, 1988), (3) the 5-item Satisfaction with Life Scale (SWLS; Diener, Emmons, Larsen, & Griffin, 1985), (4) the 20 items from the Positive and Negative Affect Scale (Watson, Clark, & Tellegen, 1988), (5) the 20-item Center for Epidemiological Studies – Depression Scale (CES-D; Radloff, 1977, (6) the 20-item State-Trait Anxiety Inventory (STAI; Speilberger, Gorsuch, and Lushene, 1970), and (7) the 9-item physical symptoms checklist (Emmon's, 1991). Each of the scale scores were created by taking the mean of the items pertaining to each scale. A

well-being index was derived using a principal components factor analysis. One factor was extracted from this set of well-being indices, accounting for 62% of the variance, with all indices loading with an absolute value greater than .41 on the factor. Scale scores were standardized and combined to create a well-being index. Higher scores on this index indicate the presence of more positive (vitality, self-esteem, positive affect) and less negative (depression, anxiety, negative affect, physical symptoms) markers of psychological health. Reliability for the well-being composite was .91.

Academic Performance. To index academic performance, participants were asked to indicate their overall GPA as well as their GPA within their current program of study.

Academic Engagement. A 50 item measure was created for this study to assess coping with schoolwork, including time management skills, engagement in academic tasks, and avoidance strategies. Sample items include "I am able to stick to a schedule if I have come up with one ", "I find it very easy to get immersed in my work", "I find that the time I set aside for work seems to slip away without much getting done" (reverse scored), and "I find myself thinking of other things" (reverse scored). Items were rated on a 7-point Likert-type scale ranging from "*not at all true*" (1) to "*extremely true*" (7). Principal Axis factor analysis was conducted with a single factor reflecting engagement and positive coping with academics emerging that accounted for 36% of the variance. Items with factor loadings below .50 were removed from the scale leaving 30 items. The scale score was derived by calculating the mean of scale items, with higher scores indicating greater academic coping and engagement. The scaled showed good reliability (α = .96).

Results

Preliminary Analyses

First, I tested the factor structure of the newly developed Identity Development Scale. The IDS was originally constructed to assess four constructs, including competence promotion, autonomy support specific to the identity development process, parental involvement, and the opportunities afforded to explore diverse identity options. Using a Principal Axis Factoring extraction with Direct Oblimin rotation to allow factors to be correlated, over 20 factors with eigenvalues greater than 1 emerged. Thus it was necessary to examine the scree plot and eigenvalues to determine the best cutoff point. Between the 6th and 7th factors there was a large jump from an eigenvalue of 2.87 for the 6th factor to 2.30 for the 7th. Additionally, the first 6 factors were strong conceptually, therefore it was decided to retain these six factors, all with eigenvalues at or above 2.87. Within factors, items with factor loadings below .375, items that did not have good face validity with the rest of the subscale, as well as items that diminished the internal consistency of the factor without adding breadth to the subscale were eliminated. The final six factors assess support for exploration, exposure to opportunities, intrusive involvement, competence support, structure and consistency, and an emphasis on hard work. For the purpose of this paper, I focus on the factors that assess support for exploration, exposure to opportunities, and intrusive involvement. The final factors used in this paper are shown in Table 1.

The first factor consists of 20 items, with factor loadings greater than .54, which tap the extent to which the person is supported to explore different identity pursuits. The second factor consists of 5 items, with factor loadings greater than .50, assessing exposure to a variety of opportunities. The final factor contains 6 items, with factor loadings greater than .44, assessing the extent to which parents monitored school and other activities to the point that it felt

intrusive[1]. Each of the factors of the IDS showed adequate reliability (Support to explore, $\alpha =$ .95; Exposure to Opportunities, $\alpha = .81$; and Intrusive Involvement, $\alpha = .76$). All subscale scores were calculated by taking the mean of the items in that scale. Pearson correlations were calculated to examine the relationship between these scales of the IDS. Results showed that greater support to explore was associated with greater exposure to opportunities ($r = .48, p < .01$) while intrusive involvement was not significantly related to either exploration or exposure to opportunities subscales (r's $= .02, -.02$, n.s., respectively).

Next, I tested the factor structure of the newly developed Current Relationships Scales. These scales were developed to assess five characteristics of participants' current relationships, including support received, intrusive involvement of the partner within the participants' academic life, the extent to which academics is a central focus of the relationship, the consequences for the relationship if the identity were dissolved (by choice or for a reason outside of their control), and the extent to which participants feel pressured by partners to maintain the academic identity. The same items were assessed for participants' relationships with their mother, father, a friend in the same program, a friend outside the program, and a professor. In order to create comparable sets of items for each current relational partner, we confirmed the viability of the same 5 factor structure for each of the relationships. Items for each partner were separately subjected to a Principal Axis Factoring extraction with Direct Oblimin rotation to allow factors to be correlated. These five factors were appropriate, accounting for 67% of the variance for mothers, 73% for fathers, 72% for friends in the program, 69% for friends outside the program, and 67% for professors. For the purpose of this paper, I focus on subscales

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[1] The three factors that were not used in this paper consisted of 7 items which assess the extent to which parents and teachers encouraged the person's sense of competency, 5 items which assess the extent to which parents were consistent and provided structure through their rules, and 3 items which assess the extent to which the importance of working hard was highlighted.

assessing pressure to maintain the academic identity (10 items), the extent to which partners are

intrusive in their involvement in the participants' academic life (3 items), and negative

consequences for the relationship if the identity were dissolved (14 items). Items for these scales

are shown in Table 2 and reliabilities for these scales for each partner are shown in Table 3. Two

additional factors reflecting the proportion of time spent with the partner that is focused on

academics and the support received from each partner were derived from the full scale item set

but are not discussed in the current study.

All subscale scores were calculated by taking the mean of the items in that scale. Pearson

correlations were calculated to examine the relationship between corresponding subscales for

mother and father, as well as for the two types of friends (Table 4). Correlations between the

same subscales for mother and father were moderate to high (Intrusive involvement, $r = .59$, $p <$

.01; Consequences of Identity Dissolution, $r = .78$, $p < .01$; Pressure, $r = .80$, $p < .01$) while

correlations between the same subscales for the two types of friends were moderate [Intrusive

involvement ($r = .56$, $p < .01$); Consequences of Identity Dissolution ($r = .53$, $p < .01$); Pressure

($r = .38$, $p < .01$)]. While these correlations suggest some similarities between partners on these

scales, I chose to treat each partner separately in subsequent analyses.

To assess gender and ethnicity differences on the scales used in the current study, I first

conducted t-tests on the developmental model variables. T-tests showed no significant

differences between men and women on the IDS and the perceptions of parents scale (POPS).

Due to the small number of participants in the East-Indian ($N = 5$) and Other ($N = 6$) ethnic

groups, comparisons based on ethnicity were only made between the White ($N = 62$) and Asian

($N = 38$) participants. T-tests showed significant differences between these two groups in their

rating of support to explore as assessed on the IDS such that Whites felt more supported to

explore possible identity pursuits than Asians (t(98) = 2.64, p = .01) (M = 5.19 vs. 4.51 respectively).

Next, assessing gender and ethnicity differences on the scales used in the current relationships model, again there were no gender differences. However t-tests revealed several significant ethnicity differences (Table 5). Compared with Whites, Asians reported that they felt more pressure to maintain their academic identity from their mothers (t(94) = -5.30, p < .001), (M = 2.38 vs. 3.57 respectively), and their fathers (t(92) = -4.40, p < .001), (M = 2.44 vs. 3.69 respectively), and marginally more pressure from professors (t(87) = -1.88, p = .065) (M = 1.33 vs. 1.63 respectively). Though base levels were quite low, Asians rated their mother (t(95) = -3.52, p < .001), (M = 1.17 vs. 1.99 respectively), father (t(92) = -3.33, p < .01), (M = 1.10 vs. 2.06 respectively), friend in program (t(92) = -4.41, p < .001), (M = 1.07 vs. 1.62 respectively), and friend outside program (t(95) = -2.64, p < .05), (M = 1.07 vs. 1.42 respectively) as significantly more intrusive in their involvement with participants academics than did Whites. Asians also reported that choosing to dissolve their current academic identity would have more negative consequences for their relationships with their mothers (t(94) = -3.24, p < .01), (M = 1.42 vs. 2.18 respectively), fathers (t(92) = -3.94, p < .001), (M = 1.38 vs. 2.46 respectively), their friends in the same program (t(90) = -2.65, p < .01), (M = 2.12 vs. 2.88 respectively), and their friends outside the program (t(95) = -3.82, p < .001), (M = 1.36 vs. 2.07 respectively). Notably, while many of these behaviours are significantly different for Whites and Asians, the extent to which these differences are meaningful is questionable in some cases given the low base rates of the behaviours overall.

Finally, I assessed gender and ethnicity differences on the scales used to assess academic motivation, academic performance and well-being. T-tests revealed significant differences

between men and women on well-being measures, such that women reported lower overall well-being than men ($t(109) = 2.05$, $p < .05$), ($M = 4.14$ vs. 4.59 respectively). There were no significant differences in motivation, grades, or academic engagement and coping between men and women. T-tests revealed several significant differences between Asians and Whites. Whites rated themselves as significantly more autonomously motivated ($t(98) = 2.13$, $p < .05$), ($M = 0.39$ vs. -1.29 respectively) and significantly less amotivated towards academics ($t(98) = -2.26$, $p < .05$), ($M = 1.45$ vs. 2.00 respectively) than Asians. Whites also reported higher overall well-being ($t(98) = 2.88$, $p < .01$), ($M = 0.27$ vs. -0.27 respectively) than Asians. No significant differences were found between Whites and Asians in terms of grades or engagement in and coping with schoolwork.

Relation of Early Autonomy Support to Relative Autonomy for Academics

First, Pearson correlations were conducted to test the relations of parental autonomy support and specific identity support during development to students' relative autonomy and amotivation for their current academic pursuits. Results showed that greater autonomy in current academic pursuits was associated with greater autonomy support from parents ($r = .27$, $p < .01$), however, amotivation around current academic pursuits was associated with less autonomy support from parents ($r = -.45$, $p < .01$). Next, with regard to specific identity pursuits, greater autonomy for current academic pursuits was associated with greater support to explore ($r = .37$, $p < .01$) and exposure to opportunities ($r = .30$, $p < .01$) by parents during development. The correlation between autonomous motivation for academics and intrusive involvement during development was not significant ($r = .03$, *n.s.*). Further, the more amotivated students are currently, the less they were exposed to opportunities ($r = -.25$, $p < .01$) and supported to explore

a variety of identity options ($r = -.30$, $p < .01$) during development. Again the correlation with intrusive involvement was not significant ($r = .07$, *n.s.*). Thus, as the developmental model suggests greater autonomy support during development, in the form of general autonomy support, support to explore diverse identity options, and exposure to a variety of opportunities, is associated with greater autonomous motivation toward schooling currently, while amotivation for schooling is associated with less autonomy support during development.

To understand whether there were differences between Whites and Asians in these relationships, I conducted separate multiple linear regressions to predict current levels of autonomous motivation from the main effects of autonomy support during childhood (general support, support to explore, opportunities to explore) and ethnicity as well as the interaction of the childhood autonomy support variables and ethnicity. For example, I predicted current autonomous motivation from the main effects of general autonomy support during childhood and ethnicity (step 1) and the interaction of general childhood autonomy support and ethnicity (step 2). Then, I ran the same models with current amotivation toward academics as the dependent variable. Results are shown in Table 6

First, predicting current autonomous motivation, results showed a significant main effect for general autonomy support [$F (1, 97) = 12.92$, $\beta = .34$, $p < .01$] suggesting that greater autonomy support from parents during development was related to greater current autonomous motivation for academics . The main effect for ethnicity was not significant ($F (1, 97) = 2.12$, $\beta = -.14$, *n.s.*), nor was the interaction ($F (1, 96) = 1.23$, $\beta = -.32$, *n.s.*). Examining support to explore, a significant main effect for support to explore emerged ($F (1, 97) = 18.36$, $\beta = .41$, $p < .01$) suggesting that greater support to explore during development was related to greater autonomous motivation for current academic studies. Neither the main effect for ethnicity ($F (1, 97) = .85$, β

= -.09, *n.s.*) nor the interaction (*F* (1, 96) = .60, *β* = -.22, *n.s.*) were significant. The regression for exposure to opportunities during development, showed a significant main effect for exposure to opportunities (*F* (1, 97) = 11.39, *β* = .32, *p* < .01) and a marginally significant effect for ethnicity (*F* (1, 97) = 3.02, *β* = -.16, *p* = .09), such that exposure to more opportunities during childhood was associated with greater current autonomous motivation and Whites tended to be more autonomously motivated currently than Asians. The interaction between ethnicity and exposure to opportunities was not significant (*F* (1, 96) = 1.01, *β* = -.29, *n.s.*).

Next, predicting amotivation in current academic studies (Table 7), the main effect of general autonomy support was significant (*F* (1, 97) = 11.16, *β* = -.32, *p* < .01) suggesting that less autonomy support from parents during development was related to greater amotivation in one's current academic studies. The main effect of ethnicity (*F* (1, 97) = 4.22, *β* = .19, *p* < .05) was also significant such that Asians reported greater amotivation than Whites. These main effects were qualified by a significant interaction between ethnicity and autonomy support (*F* (1, 96) = .36, *β* = .13, *n.s.*) such that the relationship between autonomy support and lower amotivation was more pronounced for Asians than for Whites (Figure 1). For support to explore, the main effect of support to explore was significant (*F* (1, 97) = 7.49, *β* = -.27, *p* < .01) and the main effect of ethnicity was also marginally significant (*F* (1, 97) = 3.16, *β* = .17, *p* = .08), suggesting that less support to explore during childhood is associated with greater current amotivation in academics and Asians tended to be more amotivated currently than Whites. These main effects were qualified by a significant interaction of ethnicity and support to explore (*F* (1, 96) = 5.83, *β* = -.70, *p* < .05) indicating that the impact of parental support to explore diverse identity options on amotivation was more pronounced for Asians than Whites (Figure 2). Finally, for exposure to various opportunities during childhood, the main effects for exposure (*F*

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(1, 97) = 5.27, β = -.22, $p < .05$) and ethnicity were significant (F (1, 97) = 5.44, β = .23, $p <$

.05), such that greater exposure to opportunities during childhood was associated with less

amotivation in current academics and Asians reported greater amotivation than Whites. The main

effects were qualified by a significant ethnicity by exposure interaction (F (1, 96) = 4.32, β = -

.59, $p < .05$) suggesting that the impact of exposure to opportunities on amotivation was more

pronounced for Asians than Whites (Figure 3).

Relations of Early Autonomy Support to Well-Being

Pearson correlations were conducted to test the relations of parental autonomy support

and specific identity support during development to current well-being.   Greater autonomy

support was associated with greater overall well-being (r = .35, $p < .001$). Further, the more

students were supported to explore (r = .50, $p < .01$) and exposed to opportunities to explore

diverse identity pursuits (r = .38, $p < .01$), the greater their overall well-being. Again the

correlation between intrusive involvement during development and well-being was not

significant (r = -.13, *n.s.*).

Significant gender and ethnicity differences were identified in reports of well-being. As

such, in order to understand whether there were differences between Whites and Asians and men

and women in these relations, I conducted separate multiple linear regressions to predict current

well-being from the main effects of autonomy support during childhood (general support,

support to explore, opportunities to explore), gender and ethnicity as well as the interaction

between both gender and ethnicity and childhood autonomy support variables (Table 8). For

example, I predicted well-being from the main effects of general autonomy support during

childhood, gender and ethnicity (step 1) and the interaction of general childhood autonomy

support and ethnicity as well as the interaction of general childhood autonomy support and gender (step 2)[2].

First, predicting well-being, results showed significant main effects for general autonomy support (F (1,96) = 9.25, β = .28, p < .01), ethnicity (F (1,96) = 5.85, β = -.22, p < .05), and gender (F (1,96) = 7.22, β = -.25, p < .01) such that greater autonomy support during development was related to greater well-being, and that Asians and women reported lower levels of well-being than Whites and men respectively. Neither of the two-way interaction between ethnicity and general autonomy (F (1,93) = 1.78, β = -.38, *n.s.*) and between gender and general autonomy support (F (1,93) = .51, β = -.21, *n.s.*) were significant. Examining support to explore, a significant main effect for support to explore emerged (F (1,96) = 29.13, β = .47, p < .001) such that when parents were more supportive of exploration, their children currently report higher levels of overall well-being. The main effect of gender (F (1,96) = 9.25, β = -.26, p < .01) was significant and the main effect of ethnicity was marginally significant (F (1,96) = 2.90, β = -.15, p = .092), such that women report lower levels of well-being than men and Asians reported somewhat lower levels of well-being than Whites. There was also a significant interaction between support to explore and ethnicity (F (6,93) = 4.01, β = -.53, p < .05) such that the benefits of parental support to explore diverse identity options for well-being were more pronounced for Whites than for Asian participants (Figure 4).

Relations of Current Relationships Scale to Relative Autonomy for Academics

The current relationships model suggests that less intrusiveness and pressure by partners to maintain the academic identity and fewer negative consequences for relationships in the case

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[2] The interaction between gender and ethnicity was also entered on step 2 and a three way interaction was entered on step 3, however, none of these were found to be significant and thus, they were dropped from the equations.

of identity dissolution, will be associated with greater autonomous motivation towards schooling while amotivation for schooling will be associated with more pressure and control.

Pearson correlations were conducted to test the relations of the current relational supports with students' relative autonomy for their current academic pursuits (Table 9). Those who are more autonomously motivated around their academic pursuits experience less pressure to maintain their identity from their fathers ($r = -.31$, $p < .01$) and perceive that there would be fewer consequences their relationships with their fathers if they chose to dissolve their identity ($r = -.29$, $p < .01$). No variables in participant's relationships with their mothers, either types of friends, and professors were significantly associated with relative autonomy.

Pearson correlations were also conducted to test the relations of current relational supports with amotivation around these pursuits (Table 9). Those who were more amotivated with respect to their current academic pursuits reported that they felt more pressure to maintain their current identity from their fathers ($r = .43$, $p < .01$), their friends outside the program ($r = .30$, $p < .01$), and their friends within the same program ($r = .25$, $p < .05$). Those who were more amotivated also reported that choosing to dissolve their current identity would have more consequences for their relationships with their fathers ($r = .36$, $p < .01$), their friends outside the program ($r = .22$, $p < .05$), their friends in the same program ($r = .22$, $p < .05$), and their professors ($r = .22$, $p < .05$). Greater amotivation for school was also associated with greater intrusive involvement in school by friends (Friend outside program: $r = .41$, $p < .01$; Friend in same program: $r = .32$, $p < .01$). No significant associations were found with maternal variables.

To understand whether there were differences between Whites and Asians in these relations, I conducted separate multiple linear regressions to predict current levels of autonomous motivation from the main effects of ethnicity and intrusiveness, pressure, and consequences for

identity dissolution as well as the interaction between these current relational variables and ethnicity. Notably, regressions were conducted separately for each relational partner. For example, I predicted current autonomous motivation from the main effects of pressure to maintain one's current academic identity from fathers and ethnicity (step 1) and the interaction of pressure from fathers and ethnicity (step 2). Then, I ran the same models with current amotivation toward academics as the dependent variable.

Predicting current autonomous motivation, results from separate analyses showed a significant main effect for pressure from fathers ($F (1,91) = 12.94$, $\beta = -.39$, $p < .01$) and marginally significant main effects for pressure from mothers ($F (1,93) = 3.02$, $\beta = -.21$, $p = .086$) and professors ($F (1,86) = 3.66$, $\beta = -.20$, $p = .059$) such that more pressure from these partners was associated with greater autonomous motivation towards schooling. None of the main effects of ethnicity nor the interactions were significant in any of the equations. Predicting current autonomous motivation, a significant main effect was found for negative consequences of identity dissolution in one's relationship with father ($F (1,91) = 4.26$, $\beta = -.24$, $p < .05$) such that the more participants felt that dissolving their academic identity would have consequences for this relationship, the lower was their self-reported autonomous motivation for schooling. Again the main effect of ethnicity and the interaction in this equation were not significant. No other variables were significant predictors of current autonomous motivation towards schooling (Table 10).

Next, predicting amotivation in current academic studies, results showed a significant main effect for pressure from fathers to maintain the academic identity ($F (1,91) = 17.86$, $\beta = .45$, $p < .01$) such that greater pressure was associated with amotivation. Neither the main effect for ethnicity ($F (1,91) = .01$, $\beta = .01$, $n.s.$) nor the interaction ($F (1,90) = .05$, $\beta = .08$, $n.s.$) were

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significant. Again with fathers, there was a significant main effect of consequences for the relationship if the identity were dissolved (F (1,91) = 10.19, β = .35, p < .01) such that more participants felt that dissolving their academic identity would lead to negative consequences for this relationship the more amotivated they were. Again, the main effect for ethnicity (F (1,91) = .25, β = .06, *n.s.*) and the interaction (F (1,90) = 1.06, β = -.51, *n.s.*) were not significant. Considering participants' relationships with their mothers, a marginal main effect was found for pressure to maintain the academic identity (F (1,93) = 3.39, β = .22, p = .069) such that greater pressure from mothers was related to amotivation for academic activities. The main effect of ethnicity (F (1,93) = .17, β = .05, *n.s.*) and the interaction (F (1,92) = .21, β = .22, *n.s.*) were not significant. When considering participants' perception that dissolving their identity would lead to negative consequences for the relationship with their mother, the main effect of this variable was marginally significant (F (1,91) = 3.41, β = .20, p = .068) such that perceiving more consequences for the relationship was associated with amotivation. Again, the main effect of ethnicity (F (1,91) = 1.43, β = .13, *n.s.*) and the interaction (F (1, 92) = 1.40, β = .50, *n.s.*) were not significant.

When predicting amotivation based on participants' relationships with their professors, a marginally significant main effect was found for consequences to the relationship if the identity were dissolved (F (1,86) = 3.10, β = .19, p = .09) such that more perceived consequences for the relationship in the case of identity dissolution was associated with amotivation. In this equation, there was also a significant main effect for ethnicity (F (1,86) = 4.53, β = .23, p < .05) such that Asians reported greater amotivation, however the interaction was not significant (F (1,85) = .01, β = .02, *n.s.*). Considering friends in the same program, a significant main effect for pressure to maintain current identity was significant (F (1,89) = 5.12, β = .23, p < .05) such that the more

friends place pressure on the student to maintain their current academic identity, the more amotivated the student is with respect to their current academic pursuits. There was also a significant main effect for ethnicity ($F (1,89) = 3.98$, $\beta = .20$, $p < .05$) such that Asian participants report more amotivation than Whites. These main effects were qualified by a significant interaction between pressure and ethnicity ($F (1, 90) = 4.68$, $\beta = .67$, $p < .05$) such that more pressure to maintain the identity exerted by friends is associated with greater amotivation around academic pursuits for Asian students but not for Whites (Figure 5). In separate analyses, significant main effects were found for consequences of identity dissolution for the relationship with friends in the same program ($F (1,89) = 4.12$, $\beta = .21$, $p < .05$) as well as intrusive involvement ($F (1,89) = 7.17$, $\beta = .29$, $p < .01$) such that greater consequences for the relationship and more intrusiveness were associated with amotivation. The main effects of ethnicity and the interactions in these two equations were not significant. Finally, for friends outside of the program, a significant main effect of pressure to maintain the academic identity was found ($F (1,94) = 6.60$, $\beta = .25$, $p < .05$) such that more pressure was associated with amotivation. The main effect of ethnicity was also significant ($F (1,94) = 4.75$, $\beta = .21$, $p < .05$) such that Asians report greater amotivation, however, the interaction ($F (1,93) = .17$, $\beta = .14$, *n.s.*) was not significant. A significant main effect was also found for intrusiveness from friends outside of the program ($F (1, 94) = 17.88$, $\beta = .40$, $p < .001$) such that greater intrusiveness from the friend was related to greater amotivation. Neither the main effect of ethnicity ($F (1,94) = 2.78$, $\beta = .16$, *n.s.*) nor the interaction ($F (1, 93) = 1.92$, $\beta = .88$, *n.s.*) were significant. See Table 11 for all results.

Relations of Current Relationships to Well-Being

The current relationships model also suggests that less intrusiveness, less pressure to maintain the academic identity and fewer negative for the relationship if the identity were dissolved, will be related to greater well-being. Pearson correlations were conducted to test the relations of the current relationships dimensions to current well-being. Those who reported lower well-being indicated that if they chose to dissolve their current academic identity, there would be more negative effects on their relationships with their mothers ($r = -.27$, $p < .05$), their fathers ($r = -.31$, $p < .01$), their friends in the same program ($r = -.29$, $p < .01$), their friends outside the program ($r = -.24$, $p < .05$) and their professors ($r = -.24$, $p < .05$). Those who reported lower well-being also felt more pressure to maintain their academic identity from mothers ($r = -.33$, $p < .01$), fathers ($r = -.44$, $p < .01$), and friends in the same program ($r = -.25$, $p < .05$) and felt that their mothers and fathers were involved with their academic life to the point that if felt intrusive ($r = -.23$, $p < .05$).

Again, as there were significant differences in well-being between genders and ethnic groups, in order to understand whether there were differences between Whites and Asians and men and women in these relations, I conducted separate multiple linear regressions to predict current well-being from the main effects of current relationship variables (pressure, negative effects of identity dissolution, intrusiveness), ethnicity, and gender as well as the interaction of current relationship variables each with ethnicity and gender. For example, I predicted well-being from the main effects of pressure from mothers, gender and ethnicity (step 1) and the interaction of pressure from mothers and ethnicity as well as the interaction of pressure from mothers and gender (step 2)[3]. Results are shown in Table 12.

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[3] The interaction between gender and ethnicity was also entered on step 2 and a three way interaction was entered on step 3, however, none of these were found to be significant and thus, they were dropped from the equations.

First, predicting well-being from current relationship variables with participants' fathers, a significant main effect was found for pressure (F $(1, 90)$ = 11.90, β = -.36, $p < .01$) such that more pressure to maintain the academic identity was associated with lower well-being. There was also a significant main effect of gender (F $(1, 90)$ = 5.05, β = -.21, $p < .05$) such that women report lower levels of well-being than men. The main effect of ethnicity (F $(1, 90)$ = .51, β = -.08, *n.s.*), the interaction between ethnicity and pressure (F $(1, 87)$ = .24, β = .18, *n.s.*), and the interaction between gender and pressure (F $(1, 87)$ = .19, β = .18, *n.s.*) were not significant. In participants' current relationships with their mothers, significant main effects were again found for pressure to maintain the academic identity (F $(1, 92)$ = 6.85, β = -.29, $p < .01$) and gender (F $(1, 92)$ = 6.56, β = -.24, $p < .05$) such that more pressure and being female were associated with lower well-being. Again, the main effect of ethnicity (F $(, 92)$ = .54, β = -.08, *n.s.*), the interaction between ethnicity and pressure (F $(1, 89)$ = 1.94, β = .52, *n.s.*), and the interaction between gender and pressure (F $(1, 89)$ = .44, β = -.26, *n.s.*) were not significant. Marginally significant main effects were also found for perceived consequences to the relationships with mothers if the identity were dissolved (F $(1, 92)$ = 3.23, β = -.18, $p = .075$) and ethnicity (F $(1, 92)$ = 3.28, β = -.19, $p = .073$) such that Asians and those who perceived more consequences reported lower well-being. The main effect of gender was significant (F $(1, 92)$ = 7.94, β = -.27, $p < .01$) but neither of the interactions were.

In participants' current relationships with friends in the same program, significant main effects were found for pressure to maintain the academic identity (F $(1, 88)$ = 6.54, β = -.25, $p < .05$) , ethnicity (F $(1, 88)$ = 5.43, β = -.23, $p < .05$) , and gender (F $(1, 88)$ = 6.96, β = -.25, $p < .05$) such that more pressure was associated with lower well-being and Asians and women reported lower well-being. Neither the interaction between ethnicity and pressure (F $(1, 85)$ =

.35, $\beta = .21$, *n.s.*) nor that between gender and pressure (*F (1, 85) = .001*, $\beta = .01$, *n.s.*) were significant. In a separate equation, significant main effects were also found for perceived consequences of identity dissolution on the relationship with this friend (*F (1, 88) = 6.29*, $\beta = -.25$, *p < .05*) and for gender (*F(1, 88) = 6.02*, $\beta = -.24$, *p < .05*) such that those who perceived that there would be more consequences and female participants reported lower well-being. The main effect of ethnicity (*F(1, 88) = 3.42*, $\beta = -.18$, *n.s.*) was not significant. Neither were the interactions between ethnicity and perceived consequences to the relationships (*F (1, 85) = .002*, $\beta = -.01$, *n.s.*) and between gender and perceived consequences to the relationships (*F (1, 85) = .90*, $\beta = -.36$, *n.s.*). For friends outside of the program, a significant main effect was found for consequences of identity dissolution on the friendship (*F (1, 93) = 4.82*, $\beta = -.22$, *p < .05*) as well as for gender (*F(1, 93) = 4.62*, $\beta = -.22$, *p < .05*) and ethnicity (*F(1, 93) = 7.34*, $\beta = -.25$, *p < .01*) such that those who perceived more consequences to their friendship, those who were women and those who were Asian reported lower levels of well-being. Neither the interaction between ethnicity and perceived consequences to the relationships (*F (1, 85) = .84*, $\beta = .40$, *n.s.*) and between gender and perceived consequences to the relationships (*F (1, 85) = .03*, $\beta = -.06$, *n.s.*) were significant.

Regression equations were also conducted for the remaining variables and relational partners, however, no main effects for these variables were found. Main effects for ethnicity and gender such that Whites reported greater well-being than Asians and men reported greater well-being than women were found in several of these equations. Notably, none of these relational variables in participants' current relationship with their professors were significant predictors of well-being.

Academic and Well-Being Outcomes

It was also expected that greater relative autonomy would be associated with greater well-being, academic performance, and ability to engage in and positively cope with academic pressures. Pearson correlations were conducted to test the relations of relative autonomy with academic and well-being outcomes. Greater relative autonomy was associated with greater current well-being ($r = .37$, $p < .01$). Although relative autonomy was not associated with participants' self reported academic performance ($r = .16$, $p = .12$ for overall GPA and $r = .15$, $p = .14$ for GPA within major), greater relative autonomy was associated with greater ability to engage in and positively cope with academic pressures ($r = .37$, $p < .01$). To consider whether ethnicity or gender moderate the relationship between relative autonomy and outcome variables, I next tested the main effects and interactions with relative autonomy, ethnicity and gender predicting well-being, as well as academic engagement and positive coping. No significant interactions emerged suggesting that the relationships between relative autonomy and well-being and between relative autonomy and engagement are similar for Asians and Whites and for men and women.

Relations among early autonomy support, relative autonomy, and academic and well-being outcomes

Finally, the developmental model hypothesized that relative autonomy for academics would mediate the relations between developmental autonomy support variables and outcome variables of well-being, academic performance, and academic engagement.

Baron and Kenny's (1986) procedure for testing mediation was followed. First, Baron and Kenny requires predictor variables to be significant predictors of outcome variables. As

previously shown in these data, general autonomy support ($F (1, 109) = 15.09$, $\beta = .35$, $p < .001$), support to explore ($F (1, 109) = 35.78$, $\beta = .50$, $p < .001$), and exposure to opportunities ($F (1, 109) = 18.06$, $\beta = .38$, $p < .001$) have been demonstrated to be significant predictors of well-being. Second, Baron and Kenny requires that the mediator be significantly predicted by the predictor variables. Again, I have already demonstrated that general autonomy support ($F (1, 109) = 8.62$, $\beta = .27$, $p < .01$), support to explore ($F (1, 109) = 17.74$, $\beta = .37$, $p < .001$), and exposure to opportunities ($F (1, 109) = 10.77$, $\beta = .30$, $p < .001$) significantly predict autonomous motivation for academics. Finally, Baron and Kenny requires that the mediator is a significant predictor of the outcome variable when controlling for the predictor variables. In order to demonstrate this requirement, multiple linear regression equations were conducted to predict well-being from autonomous motivation and each of the developmental variables entered separately. When considering general autonomy support, both general autonomy support ($F (1, 108) = 8.99$, $\beta = .27$, $p < .01$) and autonomous motivation ($F(1, 108) = 11.51$, $\beta = .30$, $p < .01$) were significant predictors of well-being, suggesting that relative autonomy does mediate the relationship between autonomy support and well-being but not fully (as autonomy support remains significant). Support to explore ($F(1, 108) = 22.50$, $\beta = .42$, $p < .001$) and autonomous motivation ($F(1, 108) = 6.26$, $\beta = .22$, $p < .05$) were also both significant predictors of well-being when controlling for each other, again suggesting that autonomous motivation is a partial mediator. Finally, exposure to opportunities ($F(1, 108) = 10.63$, $\beta = .29$, $p < .01$) and autonomous motivation ($F(2, 108) = 10.36$, $\beta = .29$, $p < .01$) were also significant predictors of well-being, again suggesting that autonomous motivation partially mediates this relationship. While all developmental variables continued to predict well-being when controlling for autonomous motivation, there were decreases in each of the beta coefficients from .35 to .27 for

general autonomy support, from .50 to .42 for support to explore, and from .38 to .29 for exposure to opportunities. A more stringent method of determining mediation is outlined by Kenny et al. (1998) and uses the Sobel (1982) test to assess whether the drop in beta coefficients is significant. The Sobel test was conducted with these data and indicated that the drop was not significant for general autonomy support ($z = .74$, *n.s.*), for support to explore ($z = 1.27$, *n.s.*), nor for exposure opportunities ($z = .98$, *n.s.*) indicating that the mediation model was not significant using this more stringent test.

In the developmental model, we also hypothesized that relative autonomy for academics would mediate the relation between developmental autonomy support variables and engagement and positive coping with academics. Following methods outlined by Baron and Kenny (1986), we tested this model. First, when engagement and coping was regressed individually on general autonomy support (*F (1, 108)* = 6.84, β = .24, $p < .01$), support to explore (*F (1, 108)* = 17.48, β = .37, $p < .001$), and exposure to opportunities (*F (1, 108)* = 17.05, β = .37, $p < .001$) the direct paths were all significant suggesting that greater autonomy support predicts greater engagement in and positive coping with academics. Next, in results reported above, autonomous motivation for academics has been demonstrated to be significantly predicted by general autonomy support (*F (1, 109)* = 8.62, β = .27, $p < .01$), support to explore (*F (1, 109)* = 17.74, β = . 37, $p < .001$), and exposure to opportunities (*F (1, 109)* = 10.77, β = .30, $p < .001$) suggesting that greater autonomy support in these forms is related to greater autonomous motivation for academics. Finally, engagement and positive coping was regressed onto autonomous motivation for academics, controlling for each of the developmental autonomy support variables (in separate regression equations), and relative autonomy was found to be a significant predictor of engagement and positive coping when controlling for general autonomy support: (*F (1, 108)* =

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12.15, $\beta = .32$, $p < .001$), for support to explore (F $(1, 108) = 7.78$, $\beta = .26$, $p < .01$), and for

exposure to opportunities (F $(1, 108) = 9.60$, $\beta = .28$, $p < .01$). The direct relation of the

developmental autonomy support variables remained significant with relative autonomy in the

equation, but there were decreases in the beta coefficients from .24 to .16 for general autonomy

support, from .37 to .28 for support to explore, and from .37 to .29 for exposure to opportunities.

Again the more stringent Sobel (1982) test indicated that the drop was not significant for general

autonomy support ($z = .74$, *n.s.*), for support to explore ($z = 1.27$, *n.s.*), nor for exposure

opportunities ($z = .98$, *n.s.*) indicating that the mediation model was no significant using this

more rigorous tool.

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Discussion

This study sought to clarify the nature of relational influences on the development and maintenance of academic identity. While previous research has demonstrated the importance of autonomy support during development for promoting autonomous motivation towards activities (Grolnick & Ryan, 1989; Grolnick, Deci, & Ryan, 1991; Niemeic et al., 2006), the current study examined autonomy support more specifically focused on identity development processes, such as exploration, to consider the importance of this relational variable for the development of more autonomously motivated identity. Results from this study replicate previous findings indicating that greater general autonomy support from both mothers and fathers during childhood is associated with greater autonomous motivation and less amotivation towards current academic activities. Results from this study extend previous findings by demonstrating that greater support for autonomy specifically with respect to identity pursuits, such as providing greater support for the exploration of a variety of identity alternatives and exposing children to diverse opportunities, is associated with greater autonomous motivation and less amotivation towards the current activities tied to academic identity. These results support the assertions by Flum and Blustein (2000) that exploration promotes internalization and enhances feelings of autonomy, as those who felt more supported to explore a variety of options demonstrated greater autonomous motivation. The fact that previous studies have found these results even early in infancy lends further support to the idea that parental autonomy support vitally promotes more autonomous motivation and positive adjustment. However, it is important to keep in mind that parents are likely to be more autonomy supportive with children who are more compliant whereas children who are inherently more disinhibited and need greater limit setting and structure will likely pull

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for more controlling parenting. Given the cross-sectional nature of this study, it is not possible to determine the direction of these associations and indeed it is likely bidirectional.

Previous research has also considered influences of current relational supports on academic engagement (Chen, 2005; Ryan, Stiller, & Lynch, 1994; Wentzel, 1998) including motivation for academic activities (Black & Deci, 2000; Williams & Deci, 1996). This study examined the effects of intrusive involvement, pressure to maintain the academic identity, and a sense that if the identity were to be dissolved, there would likely be negative consequences for the relationship, within five separate current relationships on the maintenance of academic identity. It is likely that parents continue to play a role in their child's experience even into early adulthood but that friends and professors are also important figures for late adolescents. Two separate friends were studied, one in the same program of study and one outside the program, as these two relational partners are likely to be differentially linked to the academic identity and, thus, may play distinct roles in influencing motivation towards academics. With each of these partners, participants indicated the extent to which they felt pressure to maintain their identity, the extent to which they felt that there would be negative consequences for the relationship if they dissolved their identity, and the extent to which the partner was involved in their academic life to the point that it felt intrusive. When considering the entire sample, the only association with relative autonomy was within participants' relationships with their fathers such that those who were more autonomously motivated reported less pressure from their fathers and felt that choosing to dissolve their current identity would not have many negative effects on their relationship.

Notably, significant relationships were found between current relational variables and amotivation towards academic activities than relative autonomy. Those who reported greater

amotivation towards their academics indicated that their fathers exerted greater pressure on them to maintain their academic identity and felt that dissolving their identity would lead to negative consequences for the relationship. Those who were more amotivated also felt that both of their friends exerted greater pressure on them to maintain their identity and that dissolving their identity would lead to negative consequences for these relationships. They also felt that their friends were more involved in their academic life to the point that they were experienced as intrusive. With respect to professors, those who reported greater amotivation felt that choosing to dissolve their current academic identity would have more negative effects on this relationship. No variables within participants' current relationships with their mothers were significantly associated with amotivation.

These results do not generally support the current relationships model proposed as only the amotivation, rather than autonomous motivation is associated with many of these relational variables. A possible explanation for this finding may be related to the measurement used in the current relationships model. The current relationship variables assess pressure and control rather than autonomy support per se. The most straightforward explanation would be that these negative measures are more strongly associated with negative outcomes (e.g., amotivation). Another possibility is that the absence of pressure and control does not necessarily indicate that a partner is providing those nutriments that are required to promote autonomous motivation. Thus, partners may need to actively promote and support specific identity related activities to affect autonomous motivation.

Previous research has demonstrated that greater relative autonomy for activities is associated with greater well-being, performance, and persistence (Black & Deci, 2000; Nix, Ryan, Manly, & Deci, 1999; Ryan, Deci, & Grolnick, 1995; Soenens & Vansteenkiste, 2005).

The results from this study replicate the finding that greater relative autonomy encourages greater well-being as well as one form of persistence, specifically engagement in study and coping with academic challenges. This lends further support to the notion that people's sense of volition and choice with respect to the activities in which they engage has important implications for their well-being and engagement in important life tasks.

Notably, relative autonomy towards academic activities was not associated with self-reported academic performance. Academic performance is partially a function of ability and variability may thus not be reflected as a function of autonomous motivation. Further, high performance is certainly possible under conditions of control or autonomy support.

The literature and theory behind this thesis suggests that developmental autonomy support variables influence current relative autonomy which, in turn influences well-being and one's ability to engage in and cope with the stressors of academics. It is also likely that developmental autonomy support variables have a direct influence on well-being and engagement and coping with academics. This suggests a path model such that autonomous motivation would mediate both the relationship between developmental variables and well-being and between developmental variables and engagement and positive coping. Though results support all requirements of Baron & Kenny's (1986) procedure for testing mediation, the more stringent Sobel tests indicated that the drop in beta coefficients for the developmental variables predicting outcome variables when autonomous motivation is added to the equation was not significant.

Though researchers have questioned whether the concept of autonomy is relevant for more collectivistic societies, SDT emphasizes that autonomy is a separable construct from independence and individuality and that health of adopting any value, belief, or cultural practice,

relies on whether it is personally endorsed and experienced as volitional. Indeed, previous research has demonstrated that the positive associations that come with greater autonomous motivation, such as greater well-being and persistence in activities, apply even within collectivistic societies such as Russia (Chirkov & Ryan, 2001) and China (Vansteenkiste et al., 2005). Though I was not able to collect data on participants' cultural background, nor the extent to which they identity with any particular cultural background, the current study did include a sufficient number of participants who classified themselves as White and Asian as to allow comparison between these two groups. Though these do not represent cultural groups, it is possible that participants in these two groups may hold different standards of value for the variables of autonomy support being studied. It was expected that there may be mean level differences between groups in terms of autonomy support. However, regardless of ethnic background, I expected that autonomy support would be important for the development and maintenance of more autonomously motivated identities and that autonomous motivation would be associated with greater well-being and performance outcomes.

Mean level differences were evident between Asians and Whites on several key variables. Developmentally, Whites rated their mothers as significantly more autonomy supportive and felt more supported to explore a variety of identity pursuits than did Asian participants. In current relationships with both parents, Asian participants, as compared with Whites, reported greater pressure, intrusive involvement, and perceived more negative effects on their relationships with their parents if they chose to dissolve their current academic identity. While differences were found to be statistically significant, ratings for several of these variables (particularly intrusive involvement) were quite low for both Asian and White participants. Thus whether these differences between groups constitute meaningful differences could be argued.

These mean level differences, however, are consistent with cross-cultural research in the area of parenting which suggests that the importance placed on promoting autonomy is significantly lower for parents in Eastern societies than in Western societies (Olsen et al., 2002; Quoss & Zhao, 1995). Particularly among Chinese families (the predominant ethnicity of the Asian participants in the current study), greater emphasis is placed on conformity and family interdependence (Chao & Tseng, 2002; Lin & Fu, 1990). In the current study, these differences between Asians and Whites were also evident in current relationships with friends, as Asian participants perceived more negative effects on their relationships with friends if they chose to dissolve their identity and experienced their friends as being more involved to the point of being intrusive than did White participants. Given the importance placed on group harmony and interdependence, these differences may reflect a tendency for Asian students to be more tolerant of pressure and control from their friends, whereas White students may reject friends who demonstrate these behaviours. Future studies could look at differences in group dynamics between Asians and Whites in terms of the amount of inter-reliance and tolerance of pressure and a great deal of involvement in each other's lives.

Interestingly, Asians also rated themselves as less autonomously motivated and more amotivated towards the activities tied to their academic identity than did Whites. They also reported significantly lower levels of overall well-being. Differences in autonomous motivation may potentially be explained by greater extrinsic motivation on the part of Asian students. Previous cross-cultural research has demonstrated that Chinese parents place great importance on academic achievement as a means to acquire greater social status and respect, as well as for personal advancement and the acquisition of wealth (external and introjected motivation). Particularly when families are a minority within a Western culture society, these achievements

signify a means of overcoming discrimination and of gaining opportunities (Lum & Char, 1985; Suizzo, 2007).

Despite these mean level differences, results showed expected relations between variables, irrespective of ethnic background. Developmentally, greater autonomy support was associated with greater autonomous motivation towards academics which, in turn, was associated with greater well-being, and engagement in study. Less pressure and control within current relationships was also associated with greater autonomous motivation and subsequent well-being and engagement in study. Greater support to explore was associated with less amotivation and this was more pronounced for Asians. Additionally, Asian participants who experienced high levels of pressure from their friends in the same program of study demonstrated greater amotivation whereas pressure from this type of friend was not associated with amotivation for White participants. Greater support to explore during development was associated with greater well-being for both groups, however, the association appears to be stronger for Whites. These results provide further support for the theory that greater autonomous motivation is conducive to well-being not just for people with traditionally individualistic backgrounds but for those with traditionally collectivistic backgrounds as well. Additionally, autonomy supportive relationships also appear to promote more autonomous motivation regardless of ethnic background.

Support for the developmental model examined in this study has implications for parenting practices, specifically with respect to parental attitudes and involvement with their children's exploration of identity pursuits. A continuously growing field of research highlights the importance of autonomy support for children's healthy development (Assor, Roth, & Deci, 2004; Grolnick, Deci, & Ryan, 1997; Ryan, Deci, Grolnick, & La Guardia, 2006). Research has also highlighted the importance of exploration (Marcia, 1966) for identity development and has

suggested that this process can serve to enhance internalization, thus promoting more autonomous motivation (Flum & Blustein, 2000). The current study extends this research by suggesting that the provision of support to explore a variety of identity alternatives and exposing children to diverse opportunities is associated with identity development such that more autonomously motivated identities are more likely to be adopted. Thus, not only is it important for parents to be autonomy supportive in general, they should also allow their children to employ their own choice and initiative in considering potential identity options. These supports will have implications for children's later well-being and effectiveness within their chosen identity.

Research has begun to focus on methods of promoting more autonomy supportive parenting and teaching from other socializing agents such as coaches and teachers. Future research should extend this study of promoting autonomy support to the field of identity development such that parents and educators can better understand and use more effective methods of encouraging exploration during the developing years. Future research could also address, with more specificity, the types of experiences and opportunities that are most beneficial to children's identity development in order to enhance our current educational systems.

This study has several limitations. Developmental data was all retrospective and only took into consideration the perception of participants. It may have been difficult for participants to recall their parents attitudes and specific behaviours from early development and it is possible that their current relationships with their parents may have influenced their perceptions of these developmental variables. Future longitudinal research could study these variables during development from both the child's and parent's perspective and follow up with the children later on, once they have developed their academic identity. This methodology would begin to clarify the causal direction of the association between autonomy support and current motivation towards

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academics. Given the nature of the current study, it can not be determined whether greater

support during development indeed led to greater autonomous motivation or whether students

who are more autonomously motivated tend to recall their parenting as being more supportive.

The current study assumes that greater support to explore a variety of identity options implies

that more exploration was, in fact, carried out, however I did not directly assess the extent and

variety of exploration. Follow-up studies will look at the exploration process more specifically to

consider why this process is important for identity development and consider whether, as Flum

and Blustein (2000) propose, exploration leads to enhanced internalization and feelings of

autonomy.

Another limitation of this study was the relatively small sample size and the fact that

participants were only drawn from one community. Nonetheless, the representation of diverse

ethnic groups was quite good in this study and the proportion of students from each group was in

line with the population in this area.

As mentioned previously, the current study also contained some measurement issues

within the current relationships model. Rather than specifically measuring autonomy support,

features of pressure and control were assessed and found to be more strongly related with

amotivation rather with relative autonomy as predicted. Future studies will need to specifically

assess autonomy support in current relationships in order to clarify this issue by having

participants report on autonomy support rather than pressure and control.

Finally, a large number of analyses were performed in the current thesis which increases

the possibility of type I errors. It is possible that some of the significant relationships were found

by chance and it would be prudent to consider only those relationships which were significant

with a probability of $p < .01$ to be reliable. While the majority of results from the developmental

model would remain significant given this more stringent cutoff point, approximately half of the significant results found in the current relationships model would no longer be significant. In order to maintain these significant results, I would need to increase the sample size.

In summary, results from the current study find strong support for the hypotheses that autonomy support during development, including specific support of identity development processes such as exploration, is important for the development of more autonomously motivated identities. Results from the current relationships model do not offer support for the hypothesis that autonomy support continues to be important for the maintenance of autonomous motivation for academics, however, this may be due to measurement issues. Measures in this study assessed pressure and control which proved to be more strongly related to increased amotivation rather than decreased relative autonomy. The current study also lends further support to the theory that autonomy has important implications for well-being as greater autonomous motivation was significantly related to greater well-being aggregated across a variety of measures.

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Appendix: Tables & Figures

Table 1

Newly Derived Subscales of the Identity Development Scale

Support to Explore (α = .95)
1. When things didn't work out with a new venture, I felt as if I had people to go to for comfort.
2. I felt supported to explore different leisure activities/hobbies.
3. I felt supported to explore and find out who I am as a person.
4. When I was discouraged about my performance in my extracurricular activities, I had someone to turn to.
5. My parents helped me to discover new things that I might find interesting or enjoyable.
6. My parents were helpful when I was trying out new activities
7. My parents highly valued exposure to different experiences.
8. I felt like I had people backing me up in me efforts to find out what I wanted to do with my life.
9. If I failed in my explorations/trying new things, I couldn't really talk to anyone about it (R)
10. I felt supported to explore different occupational options.
11. When I was discouraged about my performance in school, I had someone to turn to.
12. My parents were able to provide me with many extra opportunities
13. I was often asked how I was doing with my other involvements.
14. I felt supported to explore my sexuality.
15. I felt supported to explore different religions/belief systems.
16. My parents wanted to provide me with opportunities to be involved in a variety of activities.
17. My parents were not very involved when it came to me discovering who I am and what I want to do with my life (R)
18. I was encouraged to try out new things.
19. I felt supported to explore different cultures
20. I had a lot of support to explore possible interests.

Exposure to Opportunities (α = .81)
1. I went to museums with my family
2. I went to science centers with my family
3. My family traveled out of the country.
4. I went to see plays/musicals with my family
5. My family traveled within the country.

Intrusive Involvement (α = .76)
1. I often felt like my parents were monitoring my school activities to the point that it was intrusive

2. I often felt like my parents were checking in on my school activities to see how well I was doing.
3. I often felt like my parents were monitoring my activities (other than school) to the point that it was intrusive
4. I often felt like my parents were checking in on my activities (other than school) to see how well I was doing.
5. My parents used threats to encourage me to do well in school
6. Sometimes my parents practically did my work for me.

Competence support ($\alpha = .86$) Not used in the current paper
1. I was told that I am skilled in many academic areas.
2. I was told that I had many options for a successful career.
3. I was told that I was very intelligent by my teachers.
4. My teachers helped me to feel confident in many areas.
5. I was praised for my skill within subjects related to my current field of study.
6. A lot of the projects and tasks that I had to complete were too difficult for me (R)
7. A lot of the projects and tasks that I had to complete were too easy for me

Structure & Consistency ($\alpha = .81$) Not used in the current paper
1. My parents provided structure through their rules.
2. My parents provided clear guidelines for me.
3. My parents' rules were explained to me.
4. My parents were usually consistent with their rules and expectations.
5. My parents' expectations were quite clearly laid out.

Hard work emphasized ($\alpha = .71$) Not used in the current paper
1. My parents helped me to recognize fairly early on that my success in school was a direct result of my actions and behaviors.
2. My teachers helped me to recognize fairly early on that my success in school was a direct result of my actions and behaviors.
3. Most of the projects and tasks that I had to complete were challenging but within my ability.

Table 2

Newly Derived Subscales of the Current Relationships Scales (Completed separately for Mother, Father, a Friend Not in the same Program, a Friend in the same Program, and a Professor)

Negative Impacts on Relationship if Identity were Dissolved
> *If I chose not to continue with my current program of study…*
1. My _____ would no longer regard me as highly as he/she does now.
2. My _____ wouldn't care for me as much.
3. I would lose a lot of respect in my _____'s eyes.
4. My relationship with my _____ would become more distant.
5. My _____ and I would probably start to slowly drift apart.
6. There would probably be a lot of tension in my relationship with my _____.
7. My _____ and I would probably not be able to associate for awhile.

If, for some reason beyond my control, I was not able to continue with my current program of study…
8. My _____ would no longer regard me as highly as he/she does now
9. My _____ wouldn't care for me as much.
10. I would lose a lot of respect in my _____'s eyes.
11. My relationship with my _____ would become more distant.
12. My _____ and I would probably start to slowly drift apart.
13. There would probably be a lot of tension in my relationship with my _____.
14. My _____ and I would probably not be able to associate for awhile.

Pressure to Maintain Identity
1. If I fail in this career my _____ will feel ashamed.
2. If I fail in this career my _____ will be embarrassed.
3. If I fail in this career my _____ will be angry because the time she has invested in me will have gone to waste.
4. My _____ has a lot invested in my educational path and would be really upset if it didn't work out.
5. If it weren't for my _____, I would quit my current field of study.
6. I have to continue my education in this field of study to please my _____.
7. One of the main reasons that I continue with my education in my current field of study is that I don't want to disappoint my _____.
8. My success in this career is important for my _____ because it allows her to feel proud.
9. My success in this career pleases my _____ because the time that she has invested in me has been worth while.
10. My success in this career is important for _____ because she can tell others about me and my accomplishments.

Intrusive Involvement
1. My _____ is often meddling with my school business.
2. My _____ is so involved in my education that it feels intrusive.
3. My _____ is overbearing when it comes to my education.

Table 3

Cronbach's Alpha for Current Relationships subscales

Partner	Intrusive	Effects of Identity Dissolution	Pressure
	α	α	α
Mother	.92	.96	.86
Father	.91	.97	.90
Friend in Program	.85	.96	.91
Friend not in Program	.89	.95	.88
Professor	.95	.94	.89

Table 4

Correlations between corresponding Current Relationship subscales for Mothers and Fathers and for a Friend in the same Program and Friend outside the Program.

	Mother and Father	*Friends*
Subscale	*r*	*r*
Intrusiveness within Identity	.59**	.56**
Pressure to Maintain identity	.80**	.38**
Effects on Relationship if Identity Dissolved	.78**	.53**

Table 5

Means for Current Relationships subscales across cultural groups.

	Overall		White		Asian	
	n=107		n=61		n=36	
	Mean	SD	Mean	SD	Mean	SD
Mother						
Intrusiveness within identity	1.61	1.19	1.17*	.57	1.99*	1.32
Pressure to maintain identity	2.87	1.11	2.38*	.75	3.57*	1.20
Effects on relationship if identity dissolved	1.74	1.06	1.42*	.63	2.18*	1.33
	n=105		n=61		n=33	
	Mean	SD	Mean	SD	Mean	SD
Father						
Intrusiveness within identity	1.54	1.17	1.10*	.31	2.06*	1.63
Pressure to maintain identity	2.99	1.33	2.44*	.97	3.69*	1.48
Effects on relationship if identity dissolved	1.84	1.15	1.38*	.54	2.46*	1.51
	n=108		n=60		n=37	
Friend Not in Program	Mean	SD	Mean	SD	Mean	SD
Intrusiveness within identity	1.19	.63	1.07*	.24	1.42*	.99
Pressure to maintain identity	1.57	.76	1.47	.59	1.77	1.00
Effects on relationship if identity dissolved	1.59	.91	1.36*	.58	2.07*	1.24
	n=103		n=58		n=36	
Friend in Program	Mean	SD	Mean	SD	Mean	SD
Intrusiveness within identity	1.27	.63	1.07*	.30	1.62*	.88
Pressure to maintain identity	1.48	.82	1.43	.82	1.62	.90
Effects on relationship if identity dissolved	2.41	1.40	2.12*	1.39	2.88*	1.28
	n=97		n=55		n=33	
Professor	Mean	SD	Mean	SD	Mean	SD
Intrusiveness within identity	1.22	.80	1.10	.39	1.40	1.23
Pressure to maintain identity	1.43	.67	1.33†	.58	1.63†	.82
Effects on relationship if identity dissolved	2.81	1.71	2.47	1.54	3.10	1.77

Note: Higher numbers indicate more of a given construct.
* Significantly different means
† Marginally significant

Table 6

Main effects and interactions of developmental variables and ethnicity predicting relative autonomy for academics.

Predictor Variables	F	β	p
Perception of Parents Scale			
Autonomy Support	12.92	.34	< .001
Ethnicity	2.12	-.14	*n.s.*
AS X Ethnicity Interaction	1.23	-.32	*n.s.*
Identity Development Scale			
Support to Explore	18.36	.41	< .001
Ethnicity	.85	-.09	*n.s.*
Support X Ethnicity Interaction	.60	-.22	*n.s.*
Exposure to Opportunities	11.39	.32	< .01
Ethnicity	3.02	-.16	.086
Exposure X Ethnicity Interaction	1.01	-.29	*n.s.*
Intrusive Involvement	.24	-.05	*n.s.*
Ethnicity	3.50	-.19	.064
Intrusive X Ethnicity Interaction	.44	.21	*n.s.*

Table 7

Main effects and interactions of developmental variables and ethnicity predicting amotivation for academics.

Predictor Variables	F	β	p
Perception of Parents Scale			
Autonomy Support	11.16	-.32	< .01
Ethnicity	4.22	.19	< .05
AS X Ethnicity Interaction	3.70	-.54	.057
Identity Development Scale			
Support to Explore	7.49	-.27	< .01
Ethnicity	3.16	.17	.079
Support X Ethnicity Interaction	5.83	-.70	< .05
Exposure to Opportunities	5.27	-.22	< .05
Ethnicity	5.44	.23	< .05
Exposure X Ethnicity Interaction	4.32	-.59	< .05
Intrusive Involvement	.63	.08	*n.s.*
Ethnicity	5.74	.24	< .05
Intrusive X Ethnicity Interaction	1.65	.39	*n.s.*

Table 8

Main effects and interactions of developmental variables, ethnicity, and gender predicting well-being.

Predictor Variables	F	β	p
Perception of Parents Scale			
Autonomy Support	9.25	.28	< .05
Ethnicity	5.85	-.22	< .01
Gender	7.22	-.25	< .01
AS X Ethnicity Interaction	1.78	-.38	*n.s.*
AS X Gender Interaction	7.22	-.25	*n.s.*
Identity Development Scale			
Support to Explore	29.13	.47	< .001
Ethnicity	2.90	-.15	.092
Gender	9.25	-.26	< .01
Support X Ethnicity Interaction	4.01	-.53	< .05
Support X Gender Interaction	.21	.13	*n.s.*
Exposure to Opportunities	16.00	.36	< .001
Ethnicity	7.22	-.24	< .01
Gender	9.42	-.27	< .01
Exposure X Ethnicity Interaction	2.41	-.41	*n.s.*
Exposure X Gender Interaction	2.22	.52	*n.s.*
Intrusive Involvement	.93	-.09	*n.s.*
Ethnicity	7.37	-.26	< .01
Gender	6.83	-.25	< .01
Intrusive X Ethnicity Interaction	.38	-.19	*n.s.*
Intrusive X Gender Interaction	.21	.15	*n.s.*

Table 9

Correlations between Current Relation Subscales and Relative Autonomy and Amotivation around Academic Activities

	Mother		Father		Friend outside program		Friend in same program		Professor	
	RAI	Amot	RAI	Amot	RAI	Amot	RAI	Amot	RAI	Amot
Intrusiveness within identity	.04	.10	-.07	.16	-.06	.41**	-.15	.32**	-.05	.11
Pressure to maintain identity	-.14	.17	-.31**	.43**	-.03	.30**	-.10	.25*	.17	.18
Dissolution of identity	-.15	.18	-.29**	.36**	-.15	.22*	-.05	.22*	-.18	.22*

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Table 10

Main effects and interactions of current relationship variables and ethnicity predicting relative autonomy for academics.

Predictor Variables	F	β	p
Fathers			
Pressure to maintain identity	12.94	-.39	< .01
Ethnicity	.02	.02	*n.s.*
Pressure X Ethnicity Interaction	1.26	.40	*n.s.*
Effects on relationship if identity dissolved	4.26	-.24	< .05
Ethnicity	.23	-.06	*n.s.*
Dissolved X Ethnicity Interaction	1.03	.53	*n.s.*
Intrusiveness within identity	1.05	-.12	*n.s.*
Ethnicity	1.02	-.11	*n.s.*
Intrusiveness X Ethnicity Interaction	.03	-.14	*n.s.*
Mothers			
Pressure to maintain identity	3.02	-.21	.086
Ethnicity	.30	-.07	*n.s.*
Pressure X Ethnicity Interaction	.24	.19	*n.s.*
Effects on relationship if identity dissolved	1.38	-.13	*n.s.*
Ethnicity	1.49	-.13	*n.s.*
Dissolved X Ethnicity Interaction	.01	-.05	*n.s.*
Intrusiveness within identity	.23	-.05	*n.s.*
Ethnicity	2.10	-.16	*n.s.*
Intrusiveness X Ethnicity Interaction	.32	-.26	*n.s.*
Professors			
Pressure to maintain identity	3.66	.20	.059
Ethnicity	3.97	-.21	.05
Pressure X Ethnicity Interaction	.44	-.23	*n.s.*
Effects on relationship if identity dissolved	2.56	-.17	*n.s.*
Ethnicity	2.63	-.18	*n.s.*
Dissolved X Ethnicity Interaction	.04	-.07	*n.s.*
Intrusiveness within identity	.26	-.06	*n.s.*
Ethnicity	2.44	-.17	*n.s.*
Intrusiveness X Ethnicity Interaction	.34	-.34	*n.s.*

Table 10 (continued)

Predictor Variables	F	β	p
Friend in same program			
Pressure to maintain identity	.51	-.08	*n.s.*
Ethnicity	2.60	-.17	*n.s.*
Pressure X Ethnicity Interaction	1.17	-.35	*n.s.*
Effects on relationship if identity dissolved	.84	-.10	*n.s.*
Ethnicity	1.95	-.15	*n.s.*
Dissolved X Ethnicity Interaction	.88	-.31	*n.s.*
Intrusiveness within identity	.49	-.08	*n.s.*
Ethnicity	1.82	-.15	*n.s.*
Intrusiveness X Ethnicity Interaction	.001	.02	*n.s.*
Friend outside program			
Pressure to maintain identity	.20	.05	*n.s.*
Ethnicity	4.52	-.22	< .05
Pressure X Ethnicity Interaction	.43	-.24	*n.s.*
Effects on relationship if identity dissolved	.75	-.09	*n.s.*
Ethnicity	2.64	-.18	*n.s.*
Dissolved X Ethnicity Interaction	.11	-.15	*n.s.*
Intrusiveness within identity	.02	-.02	*n.s.*
Ethnicity	3.86	-.21	.052
Intrusiveness X Ethnicity Interaction	.44	-.47	*n.s.*

Table 11

Main effects and interactions of current relationship variables and ethnicity predicting amotivation for academics.

Predictor Variables	F	β	p
Fathers			
Pressure to maintain identity	17.86	.45	< .01
Ethnicity	.01	.01	*n.s.*
Pressure X Ethnicity Interaction	.05	.08	*n.s.*
Effects on relationship if identity dissolved	10.19	.35	< .01
Ethnicity	.25	.06	*n.s.*
Dissolved X Ethnicity Interaction	1.06	-.51	*n.s.*
Intrusiveness within identity	1.07	.12	*n.s.*
Ethnicity	2.22	.17	*n.s.*
Intrusiveness X Ethnicity Interaction	.14	-.33	*n.s.*
Mothers			
Pressure to maintain identity	3.39	.22	.069
Ethnicity	.17	.05	*n.s.*
Pressure X Ethnicity Interaction	.21	.22	*n.s.*
Effects on relationship if identity dissolved	3.41	.20	.068
Ethnicity	1.43	.13	*n.s.*
Dissolved X Ethnicity Interaction	1.40	.50	*n.s.*
Intrusiveness within identity	1.51	.14	*n.s.*
Ethnicity	1.67	.14	*n.s.*
Intrusiveness X Ethnicity Interaction	.38	.28	*n.s.*
Professors			
Pressure to maintain identity	2.67	.17	*n.s.*
Ethnicity	3.34	.19	.071
Pressure X Ethnicity Interaction	.01	.03	*n.s.*
Effects on relationship if identity dissolved	3.10	.19	< .09
Ethnicity	4.53	.23	< .05
Dissolved X Ethnicity Interaction	.01	.02	*n.s.*
Intrusiveness within identity	.38	.07	*n.s.*
Ethnicity	5.12	.24	< .05
Intrusiveness X Ethnicity Interaction	.10	-.18	*n.s.*

Table 11 (continued)

Predictor Variables	F	β	p
Friend in same program			
Pressure to maintain identity	5.12	.23	< .05
Ethnicity	3.98	.20	< .05
Pressure X Ethnicity Interaction	4.68	.67	< .05
Effects on relationship if identity dissolved	4.12	.21	< .05
Ethnicity	2.61	.17	n.s.
Dissolved X Ethnicity Interaction	.03	.05	n.s.
Intrusiveness within identity	7.17	.29	< .01
Ethnicity	1.04	.11	n.s.
Intrusiveness X Ethnicity Interaction	1.56	.68	n.s.
Friend outside program			
Pressure to maintain identity	6.60	.25	< .05
Ethnicity	4.75	.21	< .05
Pressure X Ethnicity Interaction	.17	.14	n.s.
Effects on relationship if identity dissolved	2.76	.18	n.s.
Ethnicity	3.54	.20	.063
Dissolved X Ethnicity Interaction	.51	.30	n.s.
Intrusiveness within identity	17.88	.40	< .001
Ethnicity	2.78	.16	n.s.
Intrusiveness X Ethnicity Interaction	1.92	.88	n.s.

Table 12

Main effects and interactions of current relationship variables, ethnicity, and gender predicting well-being.

Predictor Variables	F	β	p
Fathers			
Pressure to maintain identity	11.90	-.36	< .01
Ethnicity	.51	-.08	*n.s.*
Gender	5.05	-.21	< .05
Pressure X Ethnicity Interaction	.24	.18	*n.s.*
Pressure X Gender Interaction	.19	.18	*n.s.*
Effects on relationship if identity dissolved	2.74	-.18	*n.s.*
Ethnicity	.23	.20	*n.s.*
Gender	6.89	-.26	< .01
Dissolved X Ethnicity Interaction	1.45	.64	*n.s.*
Dissolved X Gender Interaction	.70	-.43	*n.s.*
Intrusiveness within identity	2.51	-.17	*n.s.*
Ethnicity	2.58	-.17	*n.s.*
Gender	7.94	-.28	< .01
Intrusiveness X Ethnicity Interaction	1.24	.94	*n.s.*
Intrusiveness X Gender Interaction	.07	.10	*n.s.*
Mothers			
Pressure to maintain identity	6.85	-.29	< .01
Ethnicity	.54	-.08	*n.s.*
Gender	6.56	-.24	< .05
Pressure X Ethnicity Interaction	1.94	.52	*n.s.*
Pressure X Gender Interaction	.44	-.26	*n.s.*
Effects on relationship if identity dissolved	3.23	-.18	.075
Ethnicity	3.28	-.19	.073
Gender	7.94	-.27	< .01
Dissolved X Ethnicity Interaction	1.06	.47	*n.s.*
Dissolved X Gender Interaction	.31	-.20	*n.s.*
Intrusiveness within identity	2.69	-.17	*n.s.*
Ethnicity	2.86	-.18	.094
Gender	8.01	-.27	< .01
Intrusiveness X Ethnicity Interaction	1.68	.59	*n.s.*
Intrusiveness X Gender Interaction	.62	-.26	*n.s.*

Table 12 (continued)

Predictor Variables	F	β	p
Friend in same program			
Pressure to maintain identity	6.54	-.25	< .05
Ethnicity	5.43	-.23	< .05
Gender	6.96	-.25	< .05
Pressure X Ethnicity Interaction	.35	.21	*n.s.*
Pressure X Gender Interaction	.001	.01	*n.s.*
Effects on relationship if identity dissolved	6.29	-.25	< .05
Ethnicity	3.42	-.18	*n.s.*
Gender	6.02	-.24	< .05
Dissolved X Ethnicity Interaction	.002	-.01	*n.s.*
Dissolved X Gender Interaction	.90	.17	*n.s.*
Intrusiveness within identity	.75	-.09	*n.s.*
Ethnicity	4.15	-.22	< .05
Gender	7.82	-.27	< .01
Intrusiveness X Ethnicity Interaction	.33	.33	*n.s.*
Intrusiveness X Gender Interaction	.09	.11	*n.s.*
Friend outside program			
Pressure to maintain identity	.88	-.09	*n.s.*
Ethnicity	8.15	-.28	< .01
Gender	6.00	-.24	< .05
Pressure X Ethnicity Interaction	.02	-.05	*n.s.*
Pressure X Gender Interaction	.04	.07	*n.s.*
Effects on relationship if identity dissolved	4.82	-.22	< .05
Ethnicity	4.62	-.22	< .05
Gender	7.34	-.25	< .01
Dissolved X Ethnicity Interaction	.84	.40	*n.s.*
Dissolved X Gender Interaction	.03	-.06	*n.s.*
Intrusiveness within identity	2.40	-.15	*n.s.*
Ethnicity	6.83	-.26	< .01
Gender	6.65	-.24	< .05
Intrusiveness X Ethnicity Interaction	.02	.10	*n.s.*
Intrusiveness X Gender Interaction	.16	-.14	*n.s.*

Table 12 (continued)

Predictor Variables	F	β	p
Professor			
Pressure to maintain identity	.00	.00	*n.s.*
Ethnicity	5.48	-.24	< .05
Gender	7.27	-.28	< .01
Pressure X Ethnicity Interaction	.10	.11	*n.s.*
Pressure X Gender Interaction	.05	.09	*n.s.*
Effects on relationship if identity dissolved	1.83	-.14	*n.s.*
Ethnicity	5.02	-.23	< .05
Gender	5.77	-.25	< .05
Dissolved X Ethnicity Interaction	.64	-.26	*n.s.*
Dissolved X Gender Interaction	1.26	-.39	*n.s.*
Intrusiveness within identity	1.23	-.11	*n.s.*
Ethnicity	4.39	-.22	< .05
Gender	7.79	-.28	< .01
Intrusiveness X Ethnicity Interaction	.51	-.53	*n.s.*
Intrusiveness X Gender Interaction	2.66	.98	*n.s.*

Figure 1

Interaction between general autonomy support and ethnicity predicting amotivation

Figure 2

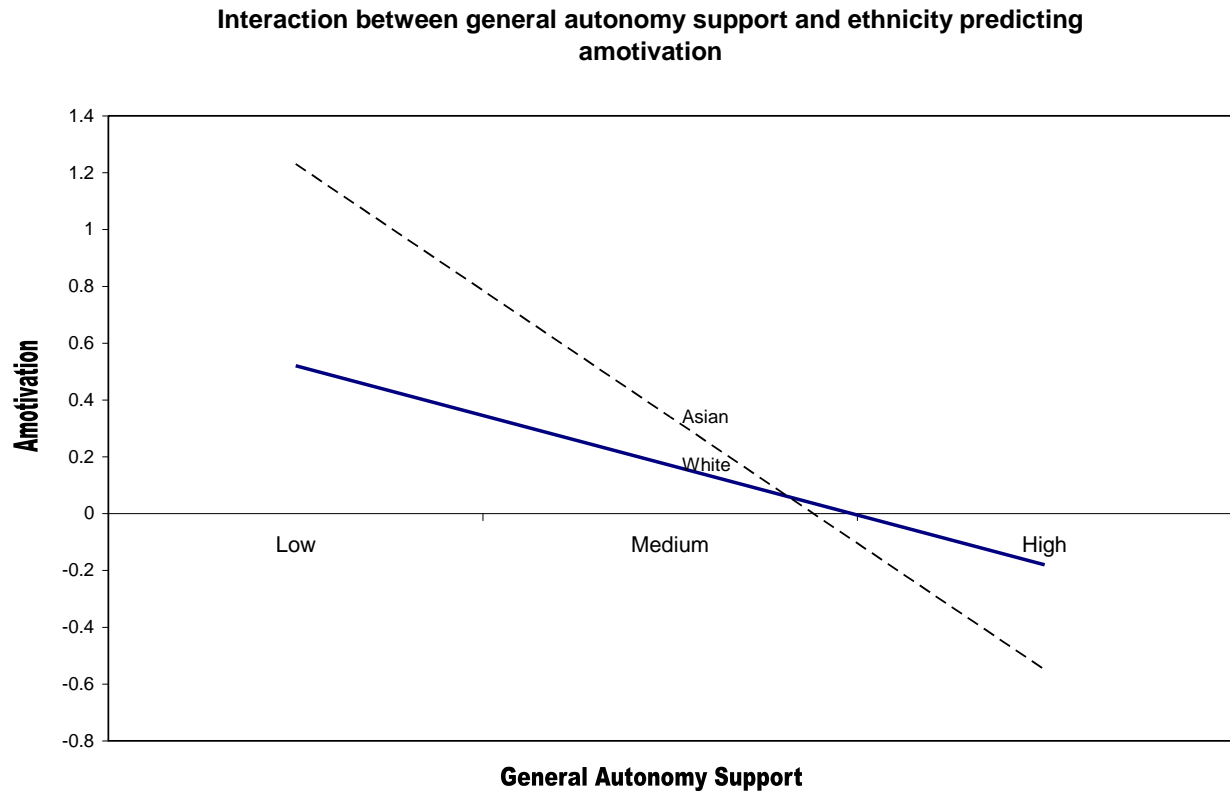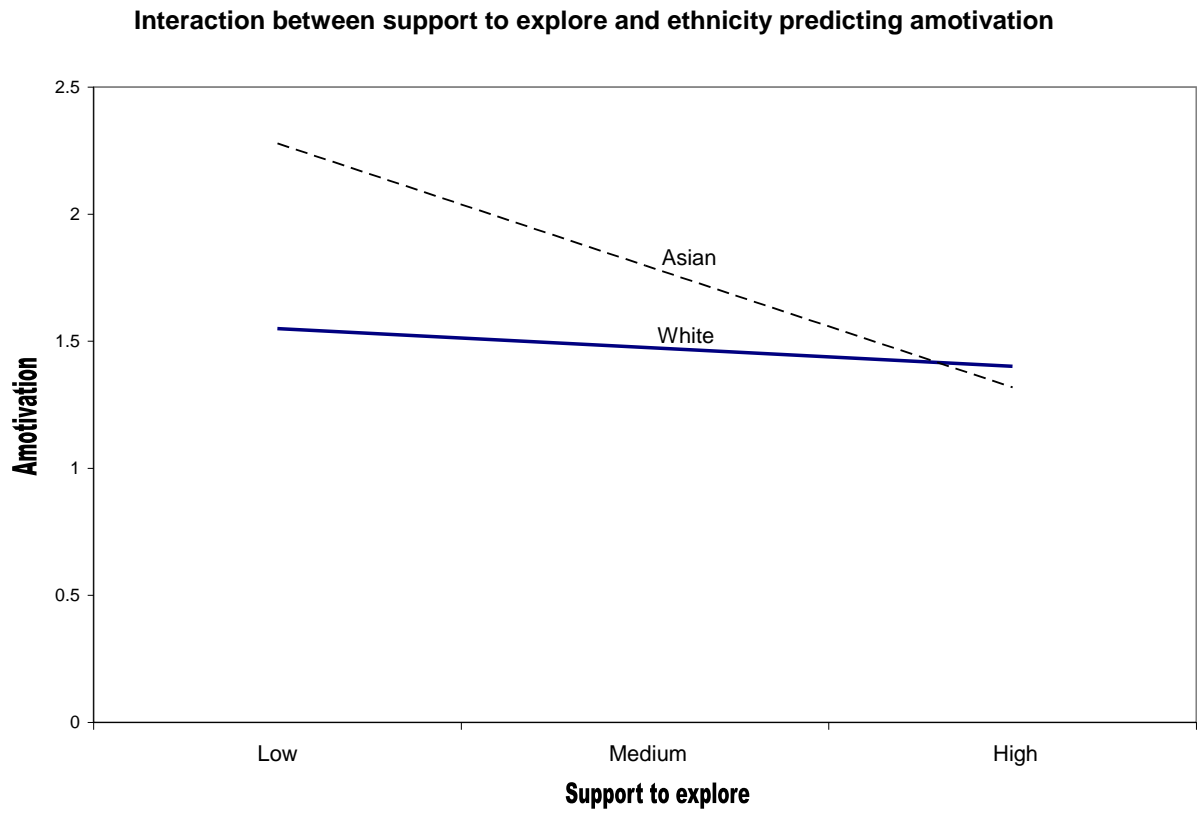**Interaction between support to explore and ethnicity predicting amotivation**

Figure 3

Interaction between exposure to opportunities and ethnicity predicting amotivation

Figure 4

Interaction between support to explore and ethnicity predicting well-being

Figure 5

Interaction between pressure from friends outside the program and ethnicity predicting amotivation