ABSTRACT

Title of Document: PREDICTING YOUNG WOMEN'S CAREER
                            PLANS: DO FUTURE CONSIDERATIONS
                            FOR CHILDREN PREDICT OUTCOMES
                            OVER AND ABOVE INSTRUMENTALITY?

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The present study assessed factors related to career development in a sample of
undergraduate women. The roles of instrumentality, anticipated work-family conflict, and
willingness to compromise career for children in the prediction of career choice
traditionality, career aspirations, and occupational engagement were examined.
Additionally, the moderating role of willingness to compromise career for children on the
relationship between instrumentality and each career outcome was tested. Results
indicated that instrumentality predicted leadership aspirations, recognition aspirations,
and occupational engagement. Anticipated work-family conflict predicted career choice
traditionality, leadership aspirations, and occupational engagement over and above
instrumentality. Willingness to compromise career for children added to the prediction of
occupational engagement after controlling for instrumentality and anticipated work-
family conflict. No moderation findings were detected. Findings are discussed in terms of
future research directions and in the context of career counseling with undergraduate
women.

PREDICTING YOUNG WOMEN'S CAREER PLANS:
DO FUTURE CONSIDERATIONS FOR CHILDREN PREDICT OUTCOMES OVER
AND ABOVE INSTRUMENTALITY?

By

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Table of Contents

List of Tables

List of Figures

CHAPTER 1

Introduction

Traditional gender roles in the United States, and the global West as a whole, persist in associating women with domestic roles despite decades of female participation in the workforce. As of 2010, women made up 47% of the workforce in the United States (U.S. Department of Labor Women's Bureau 2010), yet the careers most frequently occupied by women tend to match the traditional gender roles of support and caregiving. For example, the top three occupations filled by women are administrative assistant, registered nurse, and elementary or middle school teacher (U.S. Department of Labor Women's Bureau, 2010). Though women are beginning to achieve parity in some nontraditional areas, such as supervisory and management positions (U.S. Department of Labor Bureau of Labor Statistics, 2010), they still tend to be concentrated in low-paid, low-prestige occupations (Betz, 2006; Shapiro, Ingols, & Blake-Beard, 2008). The present study sought to contribute to the vocational literature by examining reasons behind this trend and possibly informing interventions to aid in women's career planning.

One possible reason why women are concentrated in low-paid, low-prestige occupations may be that young women are thinking about how to manage both work and family roles long before they have to make any career adjustments (Betz, 1989; O'Brien, Friedman, Tipton, & Linn, 2000). Young women expect that they will be responsible for more duties associated with domesticity – i.e., household chores and childcare – compared to their future partner (Askari, Liss, Erchull, Staebell, & Axelson, 2010). Whether women anticipate taking on those duties by choice or necessity, expectations such as these may relate to values that inform career decisions, including one's

willingness to compromise career for children. Willingness to compromise, in turn, might explain why many women are employed in low-paid, low-prestige occupations. Little research directly assesses how young women's willingness to compromise career for children relates to outcomes associated with their early career development. The present study examined the degree to which undergraduate women's willingness to compromise career for children contributes to the prediction of the traditionality of their career choice, their career aspirations, and their occupational engagement, after controlling for instrumentality - a variable previously shown to relate to career choice. In addition, it assessed whether a variable akin to consideration of future children - anticipation of work-family conflict - relates to these outcomes, and how these two future-oriented constructs relate to one another.

Is Career Compromise Really a Problem?

Why focus on career development? Isn't career-compromise a valid choice, especially since that compromise typically coincides with prioritizing family? This question has played a part in middle- to upper-class social discourse since the 1960s, when second-wave feminists focused on liberating women from the private sphere to expand women's options regarding career and family. Along with this shift, "choosing career" was eventually associated with the "more feminist" choice. Conversely, the choice to stay at home or to put career second was seen as less valid and these women were characterized as less liberated than their career-driven peers. The "Mommy Wars" began in the 1980s and raged on with the rise of the internet in the 1990s and 2000s, as stay-at-home mothers took to blogs and commenter forums to defend their choice, sometime to the extreme of suggesting that career women are bad mothers (Henig, 2013).

These unproductive battles, in which women arepitted against one another, gloss over a reality that could unite all women: many put their careers on hold because most U.S. workplaces are still inflexible regarding maternity/paternity and child-care benefits. When women make the understandable choice to leave the workforce due to inflexible policies, their voices and concerns surrounding these issues tend to fade away, and the critical mass necessary for social change is undermined. The result is that employers are let off far too easy: work-family balance is continually viewed as a problem for each individual to solve rather than an issue that corporations need to seriously address (Matchar, 2013). However, women's success or failure to attain high prestige positions in their careers cannot be explained by self-selection alone: sexism in the workplace also affects the extent to which mothers rise in their careers. Working mothers tend to earn less money than working fathers or childless men and women (Abele & Spurk, 2001). This is known as the "motherhood wage penalty" (Correll, Benard, & Paik, 2007) - even if women are trying to advance their careers, they are doing so at a slower pace than their colleagues not because they are parents, but because they are mothers. Furthermore, working mothers are perceived as less competent than working fathers or childless men and women (Cuddy, Fiske, & Glicke, 2004). Mothers face an uphill battle in the workplace for high pay or promotion.

Finally, the fact that women (and women of color especially) cluster in occupations that are low in prestige and pay is of concern to the formation of financially secure families and an enduring middle class. After the 2007 recession, which resulted in massive lay-offs and lengthy unemployment, 53% of working women in the United States found themselves in the position of primary breadwinner (Prudential, 2012). Since

women tend to be concentrated in low-paid, low-prestige occupations, many of these families are at risk for becoming impoverished. Given the unpredictable reality of the post-recession economy, families will benefit if the heads of household are equally trained and allowed to fulfill a primary wage-earning role, which would involve gender-parity in the workforce across all pay grades.

Theoretical Foundations of Women's Career Development

Career decisions are embedded in a culture where gender role socialization shapes attitudes and behaviors (Betz, 2006), making it critical in the study of women's career development to understand how the environment influences an individual's interests, values, and perceived abilities. Career choice is related to socialization in that young girls receive messages that they are supposed to fulfill caregiving roles (Betz, 1989). As a result, even if these girls are told they can do anything they want when they grow up, their self-efficacy for male stereotyped activities will likely be underdeveloped (Betz, 1989; Betz & Hackett, 2006). Betz and Hackett (1997) reported that women had high career-related self-efficacy in social domains, which is consistent with the relational messages embedded in feminine gender-role socialization. They also found that women tend to have low career-related self-efficacy expectations relating to science, technology, engineering, and math (STEM) domains. Moreover, many women avoid math, which serves as a gate-keeper for STEM careers (Betz, 2006). Basing one's career decisions on societal cues has a negative effect on women in part because it puts them at risk for underutilizing their abilities (Betz, 2006; O'Brien & Fassinger, 1993). In other words, there is a risk of disconnect between women's interests and skill confidence when those

4

interests lie outside gender-traditional domains. The consideration of any career depends in part on the presence of both interest and skill confidence (Betz & Shifano, 2000).

Personal values, as well as perception of task value, also have been found to relate to career behaviors (Eccles, Adler, Futterman, Goff, Kaczala, Meece, & Midgley, 1983). Traditionally, women are socialized to hold other-oriented, communal values (e.g., helping, nurturing, sharing) while men are socialized to hold self-oriented, instrumental values (e.g., independent, competitive, assertive). In a study of high-ability men and women in STEM careers, Ferriman, Lubinski, and Benbow (2009) found that women were more likely to endorse communal values while men were more likely to endorse instrumental values. Working mothers in this sample were more likely to value working fewer hours per week compared to their colleagues, thus making it less likely they would rise to high-paid, high-prestige positions. Additionally, two factors that predicted whether a young woman would switch out of a nontraditional career pursuit include a high valuation of career flexibility for the purpose of combining career and family and a low valuation of the physical sciences (Frome, Alfred, Eccles, & Barber, 2006). It appears that the maintenance of duties associated with both work and home life relate to both career choice and to rising in the ranks within that career.

In sum, women's career development researchers have demonstrated the necessity to look beyond ability and interest to examine the ways in which the environment shapes women's career-related choices. Gender role expectations play a role in women's career behaviors and the present study sought to add to women's career development research in part by studying two future-oriented constructs dealing with gendered expectations surrounding work and family – anticipated work-family conflict and willingness to

compromise career for children – in a sample of undergraduate women. Furthermore, we examined whether these variables aid in the prediction of career choice, career aspirations, and occupational engagement above and beyond instrumentality. Finally, we tested whether those who are high in willingness to compromise career score differently in terms of these career planning outcomes when compared to those who are not willing to compromise career for family, even if these women are similarly instrumental.

Why Study College Students?

In vocational research, there is recent renewed attention to the study of work-family concerns from a developmental perspective, that is, prior to women's workforce entry or subsequent decision to put their careers on hold (Ganginis Del Pino, O'Brien, Miller & Mereish, 2013; Westring & Ryan, 2011). For example, in the present study, the constructs of interest focus on "future considerations" or "willingness," and "anticipation." Previous attempts to develop similar constructs (e.g., research on Multiple Role Planning; see Weitzman, 1994 and Weitzman & Fitzgerald, 1996) revealed that young women tended to be uncertain about the need to plan for multiple roles (Ganginis, 2008). Understandably, this uncertainty raises questions about the utility of measuring one's expectations about the future; how one deals with work-life balance could be experience-dependent, such that one must be embedded in the multiple roles before knowing how they will act. Still, it is worthwhile to measure whether work-family concerns have any association with young women's career planning because their age and access to career counseling increases the potential for prevention. Developmental-oriented research might inform interventions that could prevent women from switching

out of nontraditional career paths, or opting out the workforce before reaching higher pay grades.

Predictors of Women's Early Career Development

Women's career development researchers have attempted to develop models explaining factors related to women's career choices. It appears that ability, career decision-making self-efficacy, multiple role self-efficacy, gender role attitudes, perceived barriers, and perceived supports play an important role in predicting women's career choice (Quimby, 2002). Due to the importance of socialization in women's career development, the present study examined how the internalization of instrumental traits relates to salient career constructs. It also examined how two variables related to the combination of motherhood and career – Anticipated Work-Family Conflict and Planning for Career and Family – might enhance the prediction of early career development outcomes.

Characteristics such as agency, assertiveness, and dominance make up the construct instrumentality (also termed agency), and women's career development researchers have hypothesized that women with high levels of these characteristics might be more likely to choose a nontraditional career or have higher career aspirations when compared to women low in instrumentality (Abele, 2003; Abele & Spurk, 2011; Fassinger, 1990; O'Brien & Fassinger, 1993; Rudman, 2010; Weisgram, Dinella, & Fulcher, 2011). Modeling studies have shown that higher levels of instrumentality predict less traditional career choices in undergraduate women (Fassinger, 1990) and in adolescent women (O'Brien & Fassinger, 1993). In a more recent study, instrumentality negatively predicted traditional career choice in undergraduate women while its

complement, expressivity (e.g., warmth, gentleness), positively predicted traditional career choice (Weisgram et al., 2011).

In a longitudinal study, higher levels of agency at college graduation predicted both objective and subjective career success in women 17 months later (Abele, 2003), a finding that persisted upon follow-up ten years later (Abele & Spurk, 2011). Career success at the ten-year follow-up was defined in terms of monthly income, permission to delegate work, project responsibility, and being in a leadership position. Taken together, research on instrumentality demonstrates its ability to predict not only nontraditional career choices but also sustained career success. Women and men both develop instrumental traits even though instrumentality tends to be conceptualized as a masculine quality (Spence & Helmreich, 1980). Perhaps by encouraging young women to develop instrumental characteristics, the trend for women to be concentrated in careers low in pay and prestige may begin to change.

Having ambition may not be enough for all women to achieve high-paid or high-prestige occupations, however, if these agentic women are willing to compromise their careers for their children. Variables associated with motherhood may constrain women's early career behavior (Fassinger, 1990). Marks and Houston (2002) found that in a sample of young women, the extent to which combining career and motherhood was perceived as acceptable predicted how certain these young women were about their career plans. Additionally, endorsement of values associated with a family-flexible career was the number one predictor of women switching out of a nontraditional career pursuit seven years later (Frome et al., 2006).

The Planning for Career and Family Scale (PLAN) was developed by Ganginis Del Pino et al., 2013) to assess the extent to which women are willing to compromise their career for their future children and partner, thus responding to a need in women's career development research to relate expectations about combining career and family to early career development. One other measure has been developed to meet this need – the Anticipated Work-Family Conflict Scale (AWFC). The extent to which one anticipates work-family conflict in their future has been found to predict self-efficacy for work-family decision making in a population of medical students, which in turn was associated with work-role certainty (Westring & Ryan, 2011). By measuring the PLAN and the AWFC in the same sample of undergraduates, it was possible to see how these two variables relate to one another, whether either or both predict early career planning outcomes above and beyond instrumentality, and whether willingness to compromise moderates the relationship between instrumentality and career development.

Outcomes in Women's Early Career Development

One construct that has received considerable attention in women's career development research is career choice traditionality. The traditionality of a career choice is typically defined as the percentage of women who are employed in a career based on United States census data (Burroughs, 1984; Flores & O'Brien, 2002; O'Brien & Fassinger, 1993; Weisgram et al., 2011). According to the U.S. Department of Labor (2012a, b), among full-time workers employed in occupations with a concentration of women that is 80% or higher, the median of the median weekly income is only 76% of what employees make in occupations with a concentration of men that is 80% or higher. In other words – and without taking into account the gender wage gap in which women

9

make 81 cents for every dollar men make in the same occupation (U.S. Department of Labor, 2013) – the median of the median weekly income is $644 among the female-concentrated careers and $847 among the male-concentrated careers. Moreover, when ranking the income of occupations that are 60% female-concentrated with occupations that are 60% male-concentrated (270 occupations total; U.S. Department of Labor, 2012a, b), only two occupations from the female-concentrated cluster rank in the top 30 for weekly median income: nurse practitioner (86.1% women, $1,610 in median weekly earnings) and physician assistant (69.4% women, $1,329 in median weekly earnings). Further examination of the median weekly income rankings lends support to the argument that traditional female careers tend to be undervalued: registered nurse (90.6% women; $1,097) ranks at number 53, just above web developer (76.3% men; $1,082); elementary/middle school teacher (81.4% women; $942) ranks at number 87, just above heavy vehicle/mobile equipment operator (99% men; $941), and several positions below postal service mail carriers (72.3% men, $990); social worker (80.6% women; $847) ranks just above bus/truck mechanic (99.5% men; $843) and just below automated teller/office machine repairer (89.3% men; $854). All of these female-concentrated careers require a graduate degree, while the majority of these male-concentrated careers only require a technical degree. When prestige is measured by income and education, it is clear that occupations associated with nurturing and caregiving do not rank high.

Women tend to expect to enter occupations that are female-dominated, and this trend has been observed across time (Burrouhs, 1984; Weisgram et al., 2011). The variables that predict young women's nontraditional career choice include ability and instrumental characteristics (Fassinger, 1990), liberal gender role attitudes, instrumental

characteristics, and moderate attachment to mother (O'Brien & Fassinger, 1993), and nontraditional career self-efficacy, high acculturation, and feminist attitudes (Flores & O'Brien, 2002). Women tend to leave behind their early desires for a nontraditional career (Frome et al., 2006), thus it is important to understand which factors contribute to persistence in women's nontraditional career ambitions.

A second construct that is frequently studied in relation to women's career development is higher level career aspiration. Early on, career aspiration was defined in terms of career versus family orientation or traditional versus nontraditional career choice, so it was necessary to differentiate between those who sought high positions within traditional careers and those who sought moderate positions in nontraditional careers (Gray & O'Brien, 2007). Young women's career aspirations tend to start high and decrease over time (Fiebig, 2008; O'Brien et al., 2000). Factors important in maintaining higher level career aspirations included high ability and role-model influence (Nauta, Epperson, & Kahn, 1998) as well as parental support and feminist attitudes (Flores & O'Brien, 2002). The present study focused on leadership and recognition aspirations because they best approximate intentions to rise to higher positions within a career.

Occupational engagement is a construct new to vocational research that may prove to be integral in understanding women's career development. Career decision-making is often treated as a rational process, even though much of decision-making is actually intuitive (Krieshok, Black, & McKay, 2009). In other words, people make career decisions based on factors unfiltered by critical thinking. Since socialization and the environment both theoretically impact women's career development, one implication of the premise that career decision-making is partly intuitive is that planning for one's future

11

family might not be purposeful. In fact, college women tend to be uncertain about their ability to plan for multiple roles (Ganginis, 2008). It is possible that women who endorse a willingness to compromise their careers for their future children might be disengaging from career opportunities outside of conscious awareness. Such a phenomenon has been observed in the workplace, with women disengaging from career-enhancing opportunities (e.g., going for a promotion) as soon as they start to think about how to fit children into their life (Auletta, 2011).

Krieshok et al. (2009) argued that one maximizes ideal career outcomes by increasing self-awareness about one's values, strengths, and desires, thus integrating one's global self-awareness with one's career plans. This heightened self-knowledge guides one's intuition, such that engagement with career development opportunities occurs automatically and frequently. If young women are willing to compromise their careers for their future family, they may also tend to disengage from occupational opportunities while in college. Vocational intervention efforts might be directed at these women so that they do not disengage from their career pursuits too early.

Summary and Conclusions

Women's career development is associated with socialization forces that place them in caregiving roles, thus resulting in most women being employed in gender traditional careers and few women found in lucrative, powerful career positions. The present study sought to examine how willingness to compromise career for one's family and anticipated work-family conflict relate to women's career development, specifically in terms of women's career choice, career aspirations, and occupational engagement. Learning more about how and when women begin to make compromises was a first step

toward informing interventions aimed at preparing women to navigate work-family

decisions.

CHAPTER 2

Review of Literature

This literature review is organized into subsections. The first section summarizes concerns surrounding women's occupational standing. The next section provides an overview of women's career development theories, including literature covering the role of work-family balance and socialization. The following sections review findings on three career development predictors – instrumentality, willingness to compromise career for children and partner, and anticipated work-family conflict. Finally, research related to three outcomes of women's career development – traditionality of career choice, career aspirations, and occupational engagement – was examined. Outside of discussing theory, priority was given to empirical literature from the year 2000 and beyond.

Women at Work: Advancements and Ongoing Concerns

Efforts to promote women's increased involvement and advancement in the world of work can be conceived of as an expansion outward from private sphere to public sphere. In fact, the legacy of the first- and second-wave feminist movements in the United States can be summarized in terms of some women's shift from the private sphere – the realm of family – into the public sphere, where one engages in politics and vocation. (Although it is important to note that historically, women of color and women struggling with poverty have worked outside of the realm of family at all times.) At every stage of women's so-called liberation from the private sphere, activists combated deeply entrenched notions that gender links up with natural proclivities, such that men are suited for work in the public sphere and women are suited for motherhood and domesticity. Though women now comprise 47% of the workforce, and 73% of those women are

working full-time (U.S. Department of Labor Women's Bureau, 2010), expectations about gender-appropriate roles align with the occupations women tend to fill. For example, according to the U.S. Department of Labor Women's Bureau (2010), the top three professions among women are administrative assistant, registered nurse, and elementary or middle school teacher, all of which correspond to supportive or caregiving roles.

Not all women choose careers along traditional lines: women now represent about 50% of supervisors and managers (U.S. Department of Labor Bureau of Labor Statistics, 2010) and have achieved parity in occupations once considered male-dominant (e.g., accounting). At the same time, they are still vastly underrepresented in science, technology, engineering, and mathematics (STEM) careers (Betz, 2006; Frome et al., 2006) and the trades (Betz & Shifano, 2000, U.S. Department of Labor Bureau of Statistics, 2010). Moreover, even within fields where women have achieved parity, women are underrepresented in high status positions (Nauta et al., 1998; U.S. Department of Labor Bureau of Statistics, 2010). In fact, the median income of women who work full time is only 80% of the median income of men who work full time (U.S. Department of Labor Women's Bureau, 2010). In sum, despite women's entrance into the workforce at high rates, they still tend to be concentrated in low-paid, low-prestige occupations (Betz, 2006; Eby, Casper, Lockwood, Bordeaux, & Brinley, 2005; O'Brien et al., 2000).

Given the ongoing trend of women's concentration in low-paid, low-prestige occupations, researchers focused on women's career development have been concerned that women may not be entering careers that make use of their abilities (Cook, Heppner, & O'Brien, 2002; O'Brien et al., 2001). Evidence is accumulating that shows women's

attempts to combine and manage the roles of private and public sphere may be one crucial force driving this trend (Abele & Spurk, 2011; Corrigall & Konrad, 2007; Frome et al., 2006). Ninety-eight percent of female undergraduates plan to have children and 96% plan to have a career (Hoffnung, 2004), demonstrating that by entering the public sphere, women have little intention of devaluing or completely opting out of their role in the private sphere. Participating in multiple roles has beneficial effects on both men and women (Betz, 2006). Though men have traditionally been able to contribute to their families in a breadwinner role by virtue of excelling at their career (Eccles, 1994), men report a desire to increase their involvement in the private sphere by participating in childrearing in a more active, meaningful way (Shapiro, Ingols, & Blake-Beard, 2008).

It is clear that embedded in feminists' and vocational psychologists' efforts to help women achieve their career potentials is an equally important imperative to shift both men's and women's perspective on how to maximize participation in both spheres. Taking a step in that direction, the present study sought to understand whether young women's willingness to compromise their future career for their future children relates to their career choice, career aspirations, and occupational engagement above and beyond a known predictor of women's career development – instrumentality. In addition, it assessed whether a variable akin to consideration of future children - anticipation of work-family conflict - related to these outcomes, and how these two future-oriented constructs related to one another.

Overview of Women's Career Development Theories

Self-Efficacy: Integrating Environmental Factors into Vocational Research. Early vocational researchers, such as Parsons and Holland, were aware that, to understand, shape, and predict career outcomes, it is essential to examine the interaction of person and environment (Fouad, 2007). Much empirical focus was initially given to personality (e.g., Holland's theory of vocational personality types, Holland, 1997), molding vocational counseling practices around western European and androcentric assumptions. For example, a focus on personality, ability, and interest tends to overvalue individualism and underestimate the role of the environment in shaping career choices (Cook et al., 2002). In the early 1980s, Betz recognized a lack of attention to environmental factors in vocational psychology. Turning focus toward the environment, she argued, would help generate a better understanding of the career development of women (Betz, 1989). Specifically, she hypothesized that a null educational environment – that is, an environment in which students are neither encouraged nor discouraged to pursue their interests in a particular domain – inherently favors men because men benefit from gender role socialization that traditionally encourages them to be career-oriented (Betz, 1989). Women, on the other hand, receive messages that encourage them toward the private sphere – either along the lines of assuming a traditional role in the home, or more recently, along the lines of combining work and family by slowing down to accommodate children. Betz (1989) argued that career counselors have a responsibility to show their female clients the "directions in which society is pushing" so these women can make choices based on their authentic interests (p. 141).

Betz and Hackett (1981) integrated environmental forces into their research on women's career development via the construct of self-efficacy, or confidence in one's ability with regard to a specific domain. Self-efficacy expectations originate from Bandura's (1977) social learning theory. Since one's learning experiences are greatly influenced by socialization, Betz and Hackett (1981) hypothesized that self-efficacy expectations may restrict women's career considerations along traditional gender role lines. In subsequent research, women were found to have high career self-efficacy in careers that correspond to social domains, and low career self-efficacy expectations in STEM domains (Betz & Hackett, 1997).

Self-efficacy in a specific domain determines whether one approaches or avoids activities related to that domain (Bandura, 1977), thus career-related self-efficacy can play an influential role in career outcomes. Betz and Shifano (2000) hypothesized that, since social learning shapes self-efficacy, it is possible to increase self-efficacy expectations in areas of one's interests. Fifty-four undergraduate women who had moderate interest in Realistic careers, but low self-efficacy for tasks associated with those careers, were recruited to study the effectiveness of a brief intervention aimed at teaching, reinforcing, and supporting the development of Realistic skills (e.g., using tools, building, operating machinery). Compared to a control group that received a neutral intervention, the experimental group's self-efficacy for realistic tasks increased from pre- to post-test. Betz and Shifano argued that this increase in skill confidence could make the difference in approach versus avoidance when it comes to women's non-traditional career selection.

Self-efficacy expectations not only influence one's behavior, but also determine how much effort one puts forth toward her or his goals, and how long one persists in the face of obstacles (Betz & Hackett, 1981; Betz & Hackett, 2006). Persistence may help explain the shortage of women in low-paid and low-prestige occupations, considering women tend to face discrimination, sexual harassment, and a lack of a support system when breaking into non-traditional careers (Betz & Hackett, 1981).

Comprehensive Theories of Women's Career Development. By the early 1990s, women's career development had proven a fruitful area of inquiry, prompting some researchers to create comprehensive models to predict early career development behavior. Lent, Brown, and Hackett's (1994) social cognitive theory of career development (SCCT) represents one such model. Building on Betz's and Hackett's work in the area of self-efficacy expectations, Lent et al. (1994) theorized that one's learning experiences (shaped by one's predispositions, gender, race, and background) influence both one's self-efficacy expectations and their outcome expectations regarding a variety of career related behaviors. Both sets of expectations influence one's career-related interests, and in turn, these interests influence one's goals and career-related choices (e.g., choosing an academic major or selecting a career). Choices go on to predict action, and Lent et al. (1994) posited that behavior feeds back into learning experiences. SCCT, via accounting for learning experiences up front, guides one in theorizing how environmental forces, such as socialization, affect career outcomes. At the same time, since actions are theorized to feedback into learning experiences, the model affirms individual agency by accounting for capacity to co-create experience (Lent et al., 1994).

The expectancy-value model of achievement-related choices is another model that was created to predict women's career outcomes, and it focuses on why women choose the careers they do (Eccles et al., 1983). Eccles (1994) defined early career outcomes as career choice, course enrollment, and choice of college major, and she argued that choices are made regarding these outcomes via pathways that begin with person-environment factors that heavily emphasize socialization. Eccles et al.'s individual is shaped by their aptitudes and learning experiences, cultural messages about gender roles, and finally, the beliefs of socializers (socializers include parents, teachers, and peers). These influences are internalized through the individual's unique cognitive filter, thereby shaping her or his self-concept. Eccles conceives of the self-concept as sense of short- and long-term goals, confidence in abilities, and perception of the demands that any given task presents. Self-concept influences expectations for success as well as the value she or he places on achievement-related tasks. Expectations for success and task value then directly influence choices regarding career and academics.

The Role of Socialization and Its Relation to Values. Comparing these two theoretical models, many similarities emerge. Both models suppose that the interaction of person and environment are responsible for various career outcomes, and both consider self-efficacy (or Eccles et al.'s self-concept of abilities), outcome expectations (or Eccles et al.'s expectations of success), and goals to be mediators of the relationship between the individual and career outcomes. While both theoretical models emphasize gender role socialization as a major factor shaping the individual, Eccles et al.'s (1983) model goes further in explicating *how*. That is, according to the expectancy-value model of achievement-related choices, the beliefs of one's socalizers shape the individual's self-

schema both directly and indirectly (via the individual's perception of her or his socializer's beliefs). For example, in their research on parents as socializers, Eccles, Jacobs, and Harold (1990) found that parents who endorse traditional gender role stereotypes also tend to underestimate their daughters' abilities for "male" activities while overestimating their sons' abilities for those same activities. This is consistent with findings showing boys were more likely than girls to be socialized into instrumental skills; specifically, boys were more likely than girls to gain skill confidence outside of the home (Betz & Hackett, 1981).

If gender role socialization is predictive of later-life decisions, it follows that socializing an individual in a gender-egalitarian manner should predict career-related choices that transcend traditional gender roles. Corrigall and Konrad (2007) found support for this in their longitudinal study of young adults' gender role attitudes. The researchers measured women's and men's gender role attitudes at age 19 and 20 as part of the Monitoring the Future Study. At the study's fifth follow-up (age 29-30), they measured the participants' hourly earnings and hours per week of paid work, and found that early gender role egalitarianism predicted more paid hours of work and higher earnings. The relationship between gender role egalitarianism and these career outcomes was significant for women, but not for men. There may be a relationship between men's gender egalitarianism and hours spent rearing children, but no such variable was included in the Monitoring the Future Study. These results suggested that gender-egalitarian socialization may be a key point of intervention in encouraging women to engage more fully in the public sphere. However, when young women endorse egalitarian beliefs, these attitudes tend to be directed at women in general while their personal future plans

tend to align with traditional gender roles (Smithson, 1999). It is important not only to measure egalitarian beliefs, but also how those beliefs relate to self-concept.

Eccles (1994) argued that an individual's self-schema predicts the value she or he assigns to achievement-related tasks. Task value – i.e., the utility, cost, incentive, and personal values one associates with the performance of achievement-related tasks – is not emphasized in SCCT, yet it has been identified recently by psychologists as a useful construct for understanding why women tend to make the career choices they do (Ferriman et al., 2009; Lubinski & Benbow, 2006). If an individual has been socialized in a manner that aligns with traditional gender roles, the value she or he assigns to career-related tasks should conform to those roles. Evidence of gender differences in achievement-related values was found in the Michigan Study of Adolescent Life Transitions (Eccles, Barber, & Jozefowicz, 1999). Girls valued caretaking and other-oriented career-related behaviors, such as making occupational sacrifices for their families and having a job that helps others. Boys placed more value on breadwinning and instrumental career-related behaviors, such as earning money, becoming famous, and seeking out a challenge. Additionally, a high valuation of helping others was inversely predictive of having science or business-related career aspirations while valuing a prestigious career inversely predicted human services-related career aspirations.

The researchers interpreted these findings along the cost dimension of task value (Eccles et al., 1999). That is, women, even in adolescence, perceive that combining multiple roles associated with family and career will cost both time and energy, thus they adjust their career-related behaviors away from careers perceived as time-consuming. It is odd that the desire to help others inversely predicted aspirations for science, business, or

22

law careers because these professions provide one with myriad opportunities to help others. The finding makes sense, however, when couched in terms of traditional gender roles, such that helping is equated to caretaking. The time and energy commitment required by taking on multiple roles is perhaps perceived as prohibitive of careers that require advanced education and strenuous commitments during child-bearing years.

Evidence that personal values have an impact on career-related dimensions was also found in a population of highly intelligent adults in STEM fields (Ferriman et al., 2009). Male and female graduate students who were part of the Study of Mathematically Precocious Youth were analyzed regarding work preferences at age 25 and 35. Additionally, they reported their life values, personal values, and life satisfaction at age 35 only. The results showed that men and women had similar work preferences, life values, personal values, and levels of life satisfaction, but a few gender differences emerged. First, comparing change from age 25 to 35, it appeared that women preferred more flexibility and fewer hours at work compared to men, who preferred freedom within the job, traveling, and being able to take risks at work. Next, comparing life values and personal views, it appeared that gender differences emerged along communal vs. instrumental lines: women valued part-time work, having strong friendships, and giving back to the community while men valued having full-time work, high pay, recognition, and putting one's own needs before others'. The gender differences in valuation of part-time work were amplified when parenthood was taken into account: women with children were most likely to rate having a part-time career as important (40%), whereas only 15% of men with children made that rating. Women without children had ratings similar to men with and without children. In sum, it is necessary to take values into account in

predicting women's career development and understanding how gender role socialization plays a role in the formation of career outcomes.

   Parenthood as a Variable in Women's Career Success. As reviewed above, a null educational environment, self-efficacy expectations, outcome expectations, goals, and values are all variables to consider in the prediction of women's career development outcomes. In addition, girls tend to experience educational barriers, and they report a restricted range of vocational interests and low math self-efficacy (Betz, 2006). An in-depth discussion of these variables was beyond the scope of this literature review. Instead, I focused my review on the role parenthood plays in adult women's career success, as this variable directly touches upon the blending of private and public roles, which has historically been a concern unique to women.

   A woman's marital status does not predict whether she participates in the world of work, however, parenthood does play a role in working women's career success (Hoffnung, 2004). For example, Abele and Spurk (2010) sought to study the longitudinal effects of gender on career success. At time one, male and female participants (N=1,015) were recent college graduates. They completed four follow-ups assessing their career success (defined as monthly income, delegation privileges, project responsibilities, and attainment of an official leadership position) over the course of ten years. Women with children were less successful than women without children, and the career success of men was independent of parenthood. What is more, the timing of parenthood seemed to be especially important to women's career success, such that having a child shortly after completing an undergraduate degree was most detrimental to women's career success.

To contrast the finding that parenthood was related negatively to women's career success, Eby et al. (2005) reported that men with children tended to hold positions higher in status compared to men without children. These findings corresponded with the "Motherhood Wage Penalty" (Correl et al., 2007), which is the tendency for working mothers to earn less money than working fathers or childless men and women. The Motherhood Wage Penalty suggests that discrimination against not only women, but especially mothers exists in the workplace. Evidence for discrimination against mothers also was described in a study of perceptions of working mothers and fathers (Cuddy et al., 2004). In a 2X2 between-participants experiment 122 Princeton undergraduates (72 women, 60% white) read a description of a potential employee and rated them on warmth, competency, and willingness to hire. The description of the employee remained constant but the researchers manipulated both gender and whether the individual had a child. Participants' ratings revealed that the employee in the "mother" condition was rated as warm, but not competent. The employee in the "father" condition was rated as both warm and competent. Correlation analyses illustrated that ratings of competence predicted the participants' hiring decisions, such that a rating of higher competence predicted a higher likelihood of hiring. Finally, participants were least willing to fund further education in the mother condition, compared to all other groups.

Evidence for the relationship between parenthood and career success suggested that, even as women move from the private sphere to the public sphere in increasing numbers, expectations about how one should combine work and family responsibilities differed by gender. Pervasive societal perceptions of how motherhood should fit into a woman's career trajectory is likely not only to have an effect on women's career

trajectories once they enter their careers, but also to relate to women's early career development. In particular, we expected that values surrounding the combination of career and family might relate to the early career development outcomes of career choice traditionality, careeer aspirations, and occupational engagement.

Predictors of Women's Career Development

Instrumentality. One variable that has been found to predict outcomes of women's career development is instrumentality – that is, characteristics such as agency, assertiveness and dominance. Instrumentality taps a personality dimension traditionally associated with masculinity, while its counterpart, expressivity (i.e., characteristics such as warmth, yielding, and gentle), is traditionally associated with femininity (Spence & Helmreich, 1980). Women and men develop both instrumental and expressive traits (Sherman & Spence, 1997), and it has been hypothesized that women who are high in instrumentality may be more likely than women with low instrumentality to choose careers that are nontraditional and to have higher career aspirations (Abele, 2003; Abele & Spurk, 2011; Fassinger, 1990; Fiebig, 2008; O'Brien & Fassinger, 1993; Rudman, 2010; Weisgram et al., 2011).

Higher levels of instrumentality have been found to predict nontraditional career choice in undergraduate women (Fassinger, 1990). O'Brien and Fassinger (1993) replicated this finding in adolescent women. Additionally, both Fassinger (1990) and O'Brien and Fassinger (1993) found that higher instrumentality predicted career orientation, which was measured using three indicators: the Career Salience Scale, the Career Aspiration Scale, and the relative importance of career versus family. More recently, among undergraduate men and women (N=586; 185 males, 401 females; 90%

26

White), instrumentality negatively predicted a traditional career choice and expressivity positively predicted a traditional career choice (Weisgram et al., 2011).

No research exists as of yet that links instrumentality to occupational engagement, at least as this variable is defined by Krieshok et al. (2009). Abele (2003), however, provided an approximate measure of occupational engagement (i.e., career success) in her longitudinal study of predictors of career success. Participants completed a measure assessing their level of agency upon graduation from college (N=1,930; 825 female; 100% Caucasian European), and again 17 months later (N=1,398; 588 female). At Time 2, participants also filled out a measure of objective and subjective career success. Specifically, career success was defined objectively by taking into account (a) employment status (i.e., employed or unemployed); (b) number of hours per week worked (i.e., full- or part-time employment); (c) salary. Subjective career success was defined using one item: "Comparing your occupational development until now with your former student colleagues, how successful do you think you are?"

Agency at Time 1 positively predicted career success at Time 2 for both men and women. Additionally, the more career success one had at Time 2, the more their agency increased from Time 1 to Time 2. Abele and Spurk (2011) followed up with these participants several more times, and at Time 5 (N=1,015; 428 female; mean age: *M*=37.08, *SD*=2.23), agency at Time 1 was again positively related to career success for both men and women (career success at Time 5 was defined as monthly income, plus permission to delegate work, plus project responsibility, plus official leadership position). Agency appeared to be an important factor in not only in starting a career, but also in becoming successful in it.

Planning for Career and Family. Though numerous variables predicting women's career development already exist, Fassinger (1990) encouraged researchers to examine whether variables associated with motherhood may "moderate the effects of other variables on career development by imposing constraints within which women behave" (p. 244). These constraints are likely to align with traditional gender roles because parenthood is defined within specific boundaries: women are assigned to and socialized toward a primary caregiving role while men are assigned to and socialized toward a primary wage-earning role. Women and men may outwardly endorse a woman's choice to be the primary wage-earner in a family, as well as its parallel – a man's choice to be the primary childcare provider in a family – but individuals tend to conform to traditional gender roles when they find themselves in situations where gender role demands are implied (Sherman & Spence, 1997). After the birth of a child, the division of family roles has been found to increase in traditionality (Lundberg & Frankenhaeuser, 1999). In fact, women and men who endorsed egalitarian gender roles in young adulthood tended to be traditional in their actual behavior after the birth of a child (Corrigall & Konrad, 2007).

If young women are thinking about how they plan to combine the role of motherhood with their careers, how might these expectations constrain their early career planning? So far, research on women's career development has produced some evidence that women are thinking about their future families in relation to their future careers. For example, Askari et al. (2010) found that college-age women hope for an egalitarian split of housework and childcare chores with their future partner (i.e., 60/40), yet they expect they will have to take on 70% of that work, even if they plan to have careers. Additionally, in a longitudinal study following women's post-college career and family

patterns, women who planned on delaying marriage at Time 1 were less likely to be married seven years later, while women who reported they expected to be a mother early in their adult life were more likely to have a child at the seven-year follow-up (Hoffnung, 2004). It appears that expectations regarding marriage and family have some influence on future behavior.

Moreover, young women's certainty about their career plans related to their perception of how acceptable it is to combine a career with motherhood (Marks & Houston, 2002). Ninety-two high-achieving high school women (Mean age: M=16; ethnicity not reported) were surveyed regarding their certainty about future plans. Future plans were defined as pursing further education, having a career, having children, and combining career and family. They also measured attitudes toward work, motherhood, and the combination of the two. Finally, they assessed the participants' perception of social pressure surrounding how women should combine work and family (i.e., items assessed the participants' perception of whether their future partner, mother, father, friends, future work colleagues, and future employer would expect them to stop work to best care for their child). The higher the participants' perception of social pressure for women to stop working upon the birth of a child, the less certainty they had about furthering their education. Having positive attitudes toward work, on the other hand, predicted certainty about pursuing further education.

Another career development outcome that has been found to relate to thinking about career and family is women's persistence in their pursuit of non-traditional careers. Researchers tested two hypotheses about why women make the choice to persist in or switch out of nontraditional careers (Frome et al., 2006). Grounded in the Eccles et al.

(1983) model of achievement related choices, the authors' first hypothesis was that

women's attitudes toward math and science would predict nontraditional career

persistence. The authors defined attitudes as participants' self-concept of ability and their

intrinsic valuation of math and science. Their second hypothesis was that persistence

would be predicted by women's desire for a career that would allow them to combine

career and family. Participants were young women who expressed an intention to pursue

careers in math and science after high school (N=104; 93% White, 4% Asian-American,

1% African-American). At age 18, they were surveyed on measures of self-concept of

ability, intrinsic value of math and science, beliefs about the importance of a family-

flexible occupation, and finally, career choice. Career choice was coded for "job

demandingness," which was defined as each occupation's educational requirement plus

the average number of hours an individual works annually in that job.

A follow-up was conducted with this sample seven years later (Mean age: M=25),

which revealed that 83% of the women had switched their career trajectories to female-

dominated or neutral occupations (Switched: N=85, Maintained: N=19). Three factors

were found to predict switching. First, those who desired a flexible job so they could

combine career and family were more likely to switch. Second, the higher the job

demandingness of their career choice at Time 1, the more likely they were to switch by

Time 2. Third, the lower one's intrinsic value for the physical sciences, the more likely

she would switch. The strongest predictor of switching was the desire for a family

flexible job (Frome et al., 2006).

Responding to findings such as these, Ganginis Del Pino et al. (2013) developed

the Planning for Career and Family Scale (PLAN), a measure that seeks to directly assess

the extent to which individuals take into account their future children and future partner as they are engaged in career planning. The PLAN was conceptualized as the willingness to compromise future career for future children and partner. The measure appeared to be reliable and valid among college men and women (Ganginis Del Pino et al., 2013), and though results have yet to be reported regarding how the PLAN relates to career development outcomes, the researchers hope that it will further elucidate the relationship between the future motherhood role and early career development.

In measuring willingness to compromise career for family, the PLAN builds on research that has used individual items to access this construct. For example, Frome et al. (2006) created five items that tap the importance of a family-flexible occupation, such as how much participants would like a job that "allows you to be at home while your children are out of school (like teaching)" (p. 372). Additionally, Wesigram et al. (2011) used the Occupational Values Scale (Weisgram & Bigler, 2006), which includes one item that asks participants to rate how much they desired a job that "allows me to take time off when I become a parent" (p. 247), in their assessment of the relationship between occupational values and career choice. Both Frome et al. and Weisgram et al. conceptualized the desire for a flexible job as a personal value, suggesting that the PLAN may also be measuring personal values regarding career and family. As such, the PLAN might be a variable that would aid in model tests of the Eccles et al. (1983) expectancy-value model of career-related choices.

Anticipated Work-Family Conflict. One other scale exists that connects career development with thinking about managing career and family. The Anticipated Work-Family Conflict (AWFC) scale assesses the extent to which one anticipates conflict

between work and family, and it is theorized to fit into SCCT as an outcome expectation (Westring & Ryan, 2011). It builds on the extensive body of research on work-family conflict, which measures the extent to which women and men experience time-based, strain-based, and behavior-based family interference with work and work interference with family. Westring and Ryan (2011) operationalized anticipated work-family conflict by altering the original work-family conflict measure (Carlson, Kacmar, & Williams, 2000) so that each item was phrased in the future tense. They administered the measure to medical students (N=959; 58.9% female; 76.4% White) in addition to measuring their core self-evaluations, self-efficacy for work-family decision-making, work role demands for their desired specialty, family role demands (operationalized as the number of children one planned to have), work role importance, family role importance, work role certainty (i.e., certainty about one's career plans), and family role certainty (i.e., certainty about family plans).

Anticipated work-family conflict predicted self-efficacy for work-family decision making, which was the only variable that directly predicted one's work role certainty (Westring & Ryan, 2011). Several of the predictions about anticipated work-family conflict were not confirmed. For example, those who anticipated working the longest hours (i.e., work role demands) were predicted to have higher time- and strain-based work interference with family, but this was not the case. Additionally, family role demands and family role importance was not related to a higher score on family interference with work. The researchers recommended further study of the path between AWFC, self-efficacy for work-family decision-making, and the certainty individuals have

about their work roles. They also called for a test of their measure in an undergraduate population.

Relating PLAN and AWFC. Willingness to compromise career for family and anticipated work-family conflict are two measures that respond to a need in women's career development research to connect future projections of work and family choices with early career development. Though these measures are similar in terms of connecting future projections with present behavior, they fit differently into models of career development: willingness to compromise career for family is more of a value or background contextual factor while anticipated work-family conflict is more of an outcome expectation. We administered these two measures simultaneously to examine whether they are measuring distinct constructs. Furthermore, administering both measures in the same sample shed light on whether one of these variables emerged as a stronger predictor of career development outcomes.

Women's Career Development Outcomes

Career Choice Traditionality. Women's career development researchers have studied women's expected or hoped for career along the dimension of traditionality. Career traditionality is usually defined as the percentage of women who occupy a given occupation, according to current United States Census data. It has been treated as a discrete variable, where occupations filled by 66% or more women are considered traditional, occupations filled by 34-65% women are considered neutral, and occupations filled by fewer than 34% women are considered nontraditional (e.g., Burroughs, 1984). Alternatively, researchers measured traditionality as a continuous variable, from 0 to 100, where lower numbers represented nontraditional careers (e.g., an occupation filled 3% by

33

women would be very nontraditional) and higher numbers represented traditional occupations (e.g., Flores & O'Brien, 2002, O'Brien & Fassinger, 1993; Weisgram et al., 2011).

Women tend to expect that they will enter occupations that are filled more than 60% by women, and this tendency has been observed across time. Burroughs (1984) studied white undergraduate women and found that 40% of the sample preferred traditional occupations, 32% preferred moderate occupations, and 17% preferred nontraditional occupations. Weisgram et al. (2011) studied a slightly more diverse sample of undergraduate women (90% White, 3% African American, 2% Hispanic American, and 1% Asian American) and found that, on average, the females sampled expected to go into an occupation with a workforce consisting of 65% women. Additionally, two longitudinal studies following adolescent females from high school to college found that women tend to move away from nontraditional career choices over time (Frome et al., 2006; O'Brien et al., 2001). For example, Frome et al. (2006) found that among the women who aspired to nontraditional careers at high school graduation (N=104), 83% switched to a traditional or neutral career choice seven years later.

The variables that receive consistent support in predicting nontraditional career choices include ability, career decision-making self-efficacy, multiple role self-efficacy, gender role attitudes, perceived barriers, and perceived social support (Quimby, 2002). For example, Fassinger (1990) tested whether ability, gender role attitudes, and instrumental characteristics predicted career choice in undergraduate women. Using structural equation modeling, she found that ability and instrumental characteristics predicted career choice. Additionally, she found that instrumental characteristics and

liberal gender role attitudes correlated positively with career orientation, which reciprocally predicted career choice. Building on Fassinger's model, O'Brien and Fassinger (1993) studied adolescent women to test whether adding attachment to and individuation from one's mother aided in explaining variance in career choice. Liberal gender roles, instrumental characteristics, and a moderate attachment to one's mother predicted nontraditional career choice.

In a more recent causal modeling study, Flores and O'Brien (2002) studied career choice traditionality in a sample of adolescent Mexican American women (N=364). The selection of predictor variables was framed in terms of SCCT. Recall that SCCT theorizes that self-efficacy expectations predict one's career interests, and career interests associate directly with one's career goals (defined in this study as the traditionality of career choice). Additionally, background contextual factors were hypothesized to shape self-efficacy expectations, and proximal contextual factors were hypothesized to relate to one's career goals. Accordingly, in addition to measuring their sample's career self-efficacy and career interests, Flores and O'Brien also tapped background contextual variables by measuring acculturation, feminist attitudes, mother's educational level, mother's nontraditional career self-efficacy, and the traditionality of mother's occupation. They measured parental support and perceived career barriers as proximal contextual variables. Nontraditional career choices were predicted directly by nontraditional career self-efficacy, high acculturation, and high feminist attitudes. Interpreting these results, there was some support for SCCT in that career self-efficacy was a predictor of career choice traditionality. On the other hand, the background contextual variables did not associate with career choice via self-efficacy, but rather, they had a direct effect.

Moreover, career interests – theorized to mediate the relationship between career self-efficacy and career goals – did not relate to career choice.

Flores and O'Brien's (2002) study exemplifies the potential for women's career development researchers to (a) test theory-driven models of career choice traditionality and (b) validate those models in diverse populations. With the exception of Weisgram et al. (2011) – which found that level of femininity predicted traditional career choices and level of masculinity predicted a nontraditional career choice in mostly white undergraduate women and men – very little recent research has attempted to predict the traditionality of women's career choice. This may be because measuring an individual's expected future career choice fails to measure one's actual future career behavior (O'Brien & Fassinger, 1993). Still, measuring the traditionality of career choice was worthwhile because, in longitudinal vocational research, expectations do predict future behavior (Hoffnung, 2004). Moreover, we studied the traditionality of career choice to inform interventions aimed at opening young women to nontraditional career possibilities.

Career Aspirations. The measurement of career aspirations has changed over time, in part due to how researchers defined aspirations. That is, aspirations were at first studied in terms of whether or not women wanted to work outside the home (Gray & O'Brien, 2007). Next, aspirations were examined in terms of career selection (Nauta et al., 1998), thus driving research aimed at examining whether women aspired to traditional or nontraditional careers (Fassinger, 1990; O'Brien & Fassinger, 1993). Restricting the measurement of career aspirations to career selection, however, obscures the differentiation between women who aspire to high leadership roles within traditional

careers versus those who do not desire advancement in their nontraditional career (Gray & O'Brien, 2007), thus an instrument measuring higher level career aspirations was needed. The Career Aspiration Scale (CAS) was developed to meet this need (O'Brien & Fassinger, 1993; Gray & O'Brien, 2007) and has been used as an outcome variable in several women's career development studies (e.g., Fiebig, 2008; Flores & O'Brien, 2002; Nauta et al., 1998; O'Brien et al., 2001). Recent research has expanded the items on the Career Aspiration Scale, and the present version contains three subscales regarding leadership aspirations, education aspirations, and recognition aspirations (Gregor & O'Brien, 2013). The present study focused on leadership and recognition aspirations because they best approximate intentions to rise to higher levels within a career, where women tend to be underrepresented.

One productive line of inquiry regarding career aspirations involves how aspirations change over time. For example, O'Brien et al. (2000) studied adolescent women as high school seniors (N=400) and again four years later (N=207; 88% White, 6% African American, 2% Asian American, 3% Latina, .5% Biracial). At each of the two phases, attachment to and separation from mother and father, career self-efficacy, and career aspirations were measured. At Time 1, career self-efficacy mediated the relationship between attachment to mother and career aspirations. At Time 2, attachment to father directly influenced career self-efficacy, which again directly influenced career aspirations. Though participants tended to select careers lower in prestige from Time 1 to Time 2, their intention to seek leadership positions and advanced education remained constant.

Similarly, Fiebig (2008) assessed how attachment to and separation from mother, gender roles, instrumental characteristics, and career aspirations changed across time. Sampling American girls (N=21; 90% White, 5% Hispanic, 5% undeclared) and German girls (N=22; 100% German-identified) in 7th or 8th grade – and following them four years later –the girls' desire for leadership or expert roles within their future career decreased. Perhaps because the Americans became more communal across time and the Germans became more instrumental across time, the American girls' career aspirations decreased more than the German girls' career aspirations across these four years. These findings conflicted with O'Brien et al.'s (2000) data showing that career aspirations remained steady across time. This may be an issue of power due to the low sample size in Fiebig's study, or it may be evidence of developmental differences, as the girls in O'Brien et al.'s study were about four years further along in their education at the start of the study. Either way, these findings suggest that young girls start off with high career aspirations, but these aspirations decrease over time, with a possible plateau during college.

Besides longitudinal research regarding career aspirations, two studies using structural equation modeling used the CAS as an outcome variable. First, Nauta et al. (1998) studied the career aspirations of female undergraduates in STEM and biology majors (N=546). Their sample was 91% White, 6% Asian American, and 2% African American. The selection of variables adhered to SCCT and included ability, self-efficacy for one's discipline, role model influence, and role conflict (i.e., beliefs in the compatibility of family roles and a science career) as predictor variables. Ability and role model influence predicted career aspirations via self-efficacy. That is, self-efficacy appeared to mediate these relationships, a finding which provided support for SCCT.

Additionally, role conflict mediated the relationship between role model influence and career aspirations, suggesting that role models positively affect career aspirations if role models are able to demonstrate congruence between work and family roles.

Next, in their study of Mexican American adolescent women, Flores and O'Brien (2002) studied the impact of background contextual variables, career self-efficacy, career interests, and proximal contextual variables on career aspirations. Parental support (a proximal contextual variable) and feminist attitudes (a background contextual variable) had a direct effect on career aspirations. Taken together, the results of these two causal modeling studies suggested that the role played by supporters (i.e., role models and/or parents) as well as flexibility in gender roles (i.e., lack of role conflict and/or feminist attitudes) were strong predictors of high career aspirations, at least among these prescribed populations.

It is interesting that Nauta et al. (1998) found that role conflict mediated the relationship between role model influence and career aspirations because Rudman and Phelan (2010) found in a recent experiment that priming women with examples of women in nontraditional careers (i.e., potential role models) actually lowered their career aspirations. Undergraduate women from an introductory psychology course (N=175; 89% White) were assigned to either a control condition or one of two experimental conditions. In the "typical" experimental condition, participants viewed photographs and biographical career information that held traditional gender roles constant. That is, the individuals pictured for traditional male careers (e.g., surgeon, police officer) were men and the individuals pictured for traditional female careers (e.g., teacher) were women. In the "atypical" condition, all photographs were switched, such that women were pictured

39

for the traditional male careers and men were pictured for the traditional female careers. Participants were told the purpose of the experiment was to test their memory, so they were asked to match the name of the individual from each picture with their corresponding career. In the control condition, all priming information and memory tasks concerned facts about animals.

Women in the atypical condition scored lower than women in the typical and control conditions on a self-concept measure of leadership, ambition, and success (Rudman & Phelan, 2010). Moreover, the women in the atypical condition reported a higher liking for traditional female careers compared to the typical and control conditions. The authors interpreted this finding as an instance of upward social comparison. Specifically, they argued that being primed with boundary-breaking women was threatening because of implicit awareness of the difficulty and possible backlash experienced by women who enter nontraditional careers.

It also is possible, given Nauta et al.'s (1998) findings, that without a tangible demonstration of how to achieve work-life balance in a nontraditional career, women were discouraged by exemplar boundary-breaking women, seeing themselves as somehow different or comparatively incapable of "having it all." Indeed, women who have children within seven years of high school tend to have lower status careers compared to women without children (Hoffnung, 2004), suggesting that the desire for a leadership role within one's career is most compatible with delayed parenthood. Young women who are still developing their career goals and aspirations may be thinking about their future families when they encounter opportunities to make career-related decisions.

Occupational Engagement. Occupational engagement, a new construct in vocational psychology, is the extent to which one is actively involved in career-related opportunities and experiences and integrates those experiences into her or his self-concept (Krieshok et al., 2009). Put another way, it is the process of career-related exploration and enrichment. Krieshok et al. (2009) argue that career decision-making is not entirely rational. Instead, individuals make use of both rational and intuitive systems when they make decisions. In fact, the use of solely rational decision-making processes can lead to "inappropriate" results (Krieshok, 1998), and the use of intuitive processes leads to more satisfying decisions (Bargh & Barndollar, 1996). Thus, the use of rational processes lends a sense of control in decision-making while the use of intuitive processes leaves one feeling "right" about their decisions. Occupational engagement fits into Krieshok et al.'s (2009) trilateral model of adaptive career decision-making as the behavioral component, functioning to guide one's rational and intuitive processes (Krieshok et al., 2009). In other words, the more occupationally engaged one is, the better their rational and intuitive processes work together to lead to optimal, career-enhancing decisions.

Career decision-making is an ongoing process that remains salient throughout an individual's lifetime, as such, occupational engagement is a developmental construct that has been operationalized for students (Cox, 2008) as well as for workers (see Krieshok et al., 2009). The measure for students contains one subscale and assesses activities – outside of coursework – that students might engage in to prepare themselves for the world of work (e.g., "I visit places I'm interested in working at so I can learn more about them."). The worker measure contains two subscales: job curiosity (e.g., "I look for ways

my strengths might apply to different kinds of work") and job involvement (e.g., "I talk with colleagues or co-workers about current events in our field."). Both the student measure and the worker measure focus on specific behaviors that guide rational and intuitive career decisions.

Krieshok et al's (2009) trilateral model of adaptive career decision-making dovetails with women's career development theory via its insistence that intuitive processes factor prominently into career decision-making. For example, gender role socialization may shape one's intuition about which career to select. According to Eccles (1994):

> Assimilation of the culturally defined gender role schema can have such a powerful effect on one's view of the world that activities classified as part of the other gender's role are rejected, often nonconsciously, without any serious evaluation or consideration. (p. 590)

Specifically, a socialized sense of how women should combine career with family may influence one's rational choice to pursue traditional occupations or to limit their career aspirations. Moreover, if one is concerned about the potential for insufficient engagement with family, she may in turn lower her level of occupational engagement.

When women have children in the middle of their career trajectories, it seems logical that their occupational engagement may suffer. Recall that in a longitudinal study, women who had a child shortly after graduating from college had the least objective career success compared to men and childless women (Abele & Spurk, 2011). In addition, compared to single mothers or married childless women, mothers with spouses who work reported more disruptions in their career (Eby et al., 2005). Occupational

42

engagement, however, is more than taking a leave from work, or working full as opposed to part time. Rather, it includes activities such as networking, conversing about one's field with colleagues, going up for promotions, and attending trainings. Anecdotally, women have been observed opting out of prestigious projects or promotion opportunities around the same time they begin thinking about starting a family. This phenomenon of "leaving before you leave" purportedly occurs long before women need to make real compromises (Auletta, 2011). Perhaps intuitively, some women view engagement with occupation and engagement with family as competing demands, disengaging from their occupation before considering the ways in which one can remain engaged while adding additional family commitments.

If this is the case, occupational disengagement may occur early in women's career development. It is possible that those who would compromise their careers for family might be less occupationally engaged than their peers as early as college. Vocational psychologists could work with these women to establish adaptable ways to remain engaged in their careers while they both think about and actually start a family.

Summary and Conclusions

To conclude, women's career development research has shed light on the ways in which the environment – especially via gender role socialization – predicts career development choices. It is necessary to continue working toward understanding women's career development to rectify the over-representation of women in low-paid, low-prestige occupations. Women tend to choose nontraditional careers and to have high career aspirations when they have developed instrumental personality characteristics. We expected that the relationship between instrumentality and career development would be

different for those who are willing to compromise their careers for family or for those who anticipated high work–family conflict. We considered that instrumentality might weaken as a predictor of nontraditional career choice and higher career aspirations when women valued compromising career for family or when they anticipated high work-family conflict. Furthermore, we expected that these predictors would show us which women are the most occupationally engaged as undergraduates. We hoped that uncovering these relationships could potentially help career counselors target their interventions to ensure that even women who value a high degree of involvement with their children still choosing career paths that fit their abilities and potential.

Hypotheses

Research Question 1

How did the sample score in regard to their instrumentality, anticipation of work-family conflict, willingness to compromise career for children, traditionality of career choice, career aspirations, and occupational engagement?

Research Question 2

What were the relationships among the variables of interest?

Purpose 1

The purpose of the study was to investigate the degree to which instrumentality, anticipation of conflict in future work and family roles, and willingness to compromise career for future children were predictive of career choice traditionality, level of career aspiration, and degree of occupational engagement with a sample of single college women who do not yet have children.

Hypothesis 1. Instrumentality, anticipated work-family conflict, and willingness to compromise career for future children were expected to contribute unique and shared variance in the prediction of career choice traditionality.

Hypothesis 1a. Instrumentality was expected to contribute unique variance to the prediction of career choice traditionality. A negative relationship was expected, such that higher levels of instrumentality would be related to a career choice lower in traditionality.

Hypothesis 1b. Anticipated work-family conflict was expected to contribute unique variance to the prediction of career choice traditionality. A positive relationship was expected, such that higher levels of anticipated work-family conflict would be related to a career choice higher in traditionality.

Hypothesis 1c. Willingness to compromise career for future children was expected to contribute unique variance to the prediction of career choice traditionality. A positive relationship between these variables was expected, such that higher levels of willingness to compromise would be related to a career choice higher in traditionality.

Hypothesis 2. Instrumentality, anticipated work-family conflict, and willingness to compromise career for future children were expected to contribute unique and shared variance in the prediction of career aspirations.

Hypothesis 2a. Instrumentality was expected to contribute unique variance to the prediction of career aspirations. A positive relationship was expecte, such that higher levels of instrumentality would be related to higher levels of career aspirations.

45

Hypothesis 2b. Anticipated work-family conflict was expected to contribute unique variance to the prediction of career aspirations. A negative relationship was expected, such that higher levels of anticipated work-family conflict would be related to lower levels of career aspirations.

Hypothesis 2c. Willingness to compromise career for future children was expected to contribute unique variance to the prediction of career aspirations. A negative relationship between these variables was expected, such that higher levels of willingness to compromise would be related to lower levels of career aspirations.

Hypothesis 3. Instrumentality, anticipated work-family conflict, and willingness to compromise career for future children were expected to contribute unique and shared variance in the prediction of occupational engagement.

Hypothesis 3a. Instrumentality was expected to contribute unique variance to the prediction of occupational engagement. A positive relationship was expected, such that higher levels of instrumentality would be related to higher levels of occupational engagement.

Hypothesis 3b. Anticipated work-family conflict was expected to contribute unique variance to the prediction of occupational engagement. A negative relationship was expected, such that higher levels of anticipated work-family conflict would be related to lower levels of occupational engagement.

Hypothesis 3c. Willingness to compromise career for future children was expected to contribute unique variance to the prediction of occupational engagement. A negative relationship between these variables was expected, such

that higher levels of willingness to compromise would be related to lower levels of occupational engagement.

Purpose 2

The second purpose of the study was to test the moderating effect of willingness to compromise career for future children on the relationship between instrumentality and career choice traditionality, career aspirations, and occupational engagement.

Hypothesis 4. Willingness to compromise career for future children was expected to moderate the relationship between instrumentality and career choice traditionality. When willingness to compromise career for future children was low, a negative relationship between one's level of instrumentality and the traditionality of their career choice was expected. When willingness to compromise career for future children was high, no relationship between instrumentality and career choice traditionality was expected, such that those who had higher instrumentality chose careers just as traditional as those who had lower instrumentality. See Figure 1.

Hypothesis 5. Willingness to compromise career for future children was expected to moderate the relationship between instrumentality and career aspirations. When willingness to compromise career for future children was low, a positive relationship between one's level of instrumentality and their level of career aspirations was expected. When willingness to compromise career for future children was high, no relationship between instrumentality and career aspirations was expected, such that those who had either any level of instrumentality demonstrated similarly low magnitudes of career aspirations. See Figure 2.

Hypothesis 6. Willingness to compromise career for future children was expected to moderate the relationship between instrumentality and occupational engagement. When willingness to compromise career for future children was low, a positive relationship between one's level of instrumentality and their level of occupational engagement was expected to. When willingness to compromise career for future children was high, no relationship between instrumentality and occupational engagement was expected, such that those who had any level of instrumentality would demonstrate similarly low magnitudes of occupational engagement. See Figure 3.

CHAPTER 3

Method

Design

The present study was a correlational field study.

Participants

Participants included single college female non-mothers over the age of 18 from a large mid-Atlantic University. To achieve 80% power to detect a medium effect, given an alpha value of .05 and three independent variables, the sample size needed to be at least 67. Because we conducted eight multiple regressions, the target sample size was increased to 140. To include college women across diverse disciplines, four recruitment strategies were employed, as outlined in the procedures section.

Measures

Instrumentality. The Bem Sex Role Inventory is a 60-item measure consisting of 20 stereotypically masculine adjectives (e.g., dominant, assertive), 20 stereotypically feminine adjectives (e.g., gentle, yielding), and 20 neutral items (e.g., likable, moody). Participants rated themselves on each item using a Likert scale where 1 indicates *never or almost never true of me* and 7 indicates *almost always true of me* (Bem, 1974). Participants' masculine and feminine scores are compared and classified as either "masculine" (masculine score > feminine score), "feminine" (feminine score > masculine score), "androgynous" (masculine score and feminine score are comparable), or "undifferentiated" (participant scores low on both the masculine and feminine dimensions; Bem, 1974). A short-form of this scale was developed by Bem (1981) and its

Cronbach's alphas range from .82 to .86 on the masculine scale and .84 to .89 on the feminine scale (Bem, 1981; Campbell, Gillaspy, & Thompson, 1997).

The construct validity of the scale, as originally conceptualized by Bem (1974) has been called into question such that critics recommend using the scale to measure one's instrumental and expressive traits as opposed to one's global masculinity and femininity (Spence & Helmreich, 1980; Hoffman & Borders, 2001). In other words, the scales may not predict gender-related behavior beyond that which relates to instrumental and expressive behavior in particular (Spence & Helmreich, 1980). Holmbeck and Bale (1988) and Taylor (1984) found that the instrumental scale correlated positively with instrumental behaviors and the expressive scale correlated positively with expressive behaviors. The present study measured both instrumentality and expressiveness, but its hypotheses pertain only to the presence or absence of instrumentality. Very little known recent research examines the relationship between expressiveness and career development outcomes, therefore no hypotheses were generated about expressiveness. Post-hoc data exploration was planned to examine whether any relationships between expressiveness and career development outcomes emerged in our sample.

Anticipated Work-Family Conflict. The Anticipated Work-Family Conflict scale is an 18-item instrument that measures anticipation of one's future work-role interfering with one's ability to participate fully in their future family role (Westring & Ryan, 2011). The measure parallels Work-Family Conflict, which has six dimensions (work-interference-with-family and family-interference-with-work X time-based conflict, strain-based conflict, and behavior-based conflict). The Anticipated Work-Family Conflict applies future-oriented language to the Work-Family Conflict Measure, and participants

indicated their level of agreement with items on a Likert scale ranging from 1 (*strongly disagree*) to 5 (*strongly agree*).

An example of an item on the Time-based Anticipated Work Interference with Family dimension is "I will have to miss family activities due to the amount of time I will have to spend on work responsibilities." An item on the Strain-based Anticipated Family Interference with Work dimension is "Because I will often be stressed from my family responsibilities I will have a hard time concentrating on my work." An example of a Behavior-based Anticipate Work Interference with Family item is "Behavior that is effective and necessary for me at work will be counterproductive at home."

Westring and Ryan 2011 reported Cronbach's alpha levels greater than .73 for all six dimensions. They also found support for the predictive validity of AWFC in that it predicted certainty regarding future work and family plans in a sample of female medical students.

Planning for Career and Family. The Planning for Career and Family Scale (PLAN) is a 24-item measure that assess the extent to which people take into account future partner and future children when making career decisions (Ganginis Del Pino et al., 2013) The measure has two subscales – a partner subscale (12 items) and a children subscale (12 items). Participants responded to items on a 4-point Likert scale ranging from 1 (*strongly disagree*) to 4 (*strongly agree*). Items were summed on each subscale, with higher scores indicating higher willingness to compromise one's career for family. Sample items include "My partner's career will take priority over mine" (partner subscale) and "When choosing a career, I will think about whether the work load will hinder my ability to care for my children" (children subscale).

The PLAN subscales were found to be reliable when tested across two samples of undergraduate women (alphas ranged from .76 to .83) and two-week test-retest reliability was found to be .79. Convergent validity was supported in that high scores on the PLAN correlated negatively with career orientation and career aspiration, and discriminant validity was shown in that scores on the PLAN had no relationship with scores on measures of career decision making self-efficacy, life satisfaction, and general happiness (Ganginis, 2008).

Career Choice Traditionality. Participants were asked whether they have decided on a career, and if so, to list the career they selected. If participants had not yet decided on a career, they were asked to indicate the careers they were most seriously considering, indicating their first and second choice. Traditionality of career was operationalized as the percentage of women that are presently employed in a given career according to current United States Department of Labor Statistics (O'Brien & Fassinger, 1993).

Career Aspirations. The Career Aspiration Scale (CAS) assessed career aspiration with regard to aspiring to leadership and promotions, training and managing others, and pursuing further education (Gray & O'Brien, 2007). The Career Aspiration Scale - Revised contains three subscales: the Leadership Aspirations subscale (5 items), the Education Aspirations subscale (5 items), and the Recognition Aspirations subscale (4 items; Gregor & O'Brien, 2013). Items consist of a 5-point Likert scale ranging from 0 (*not at all true of me*) to 4 (*very true of me*), and were summed with a higher score corresponding to higher aspirations for a given career. An example item on the Leadership Aspirations subscale is "I hope to move up to a leadership position in my organization or business." An example item on the Educational Aspirations subscale is "I

will pursue additional training in my occupational area of interest." An example item on the Recognition subscale is "I want to be a nationally known leader in my field." Reliability estimates for the subscales of the Career Aspiration Scale - Revised are not yet available. Cronbach's alpha for the subscales on the 2007 version of the CAS ranged from .72 to .77 (Gray & O'Brien, 2007), and the scale correlated with career decision-making self-efficacy, attitudes toward women's roles, instrumentality, and relative importance of career versus family.

Occupational Engagement. The Occupational Engagement Scale for Students (OES-S) was used to measure the degree to which one engages with life in a manner that enhances her or his occupational opportunities (Cox, 2008). Items on this scale assessed for practices that tap into both the rational and intuitive processes that influence occupational decision-making, including "I talk about my career choices with friends or family," "I am actively involved in groups or organizations," and "I take part in a variety of activities to see where my interests lie." The scale consists of 14 items, and participants responded on a five-point Likert scale ranging from 1 (*not at all like me*) to 5 (*very much like me*). A higher total score indicated higher occupational engagement. The OES-S was shown to have adequate reliability, with an alpha of .85 (Cox, 2008). Cox also demonstrated the validity of the OES-S by showing a positive correlation between the OES-S and the Estimates of Gains Scale, which measures college student success, and the Satisfaction with Life Scale, which assesses subjective well being.

Procedure

The first recruitment strategy was to utilize an undergraduate introductory psychology course participant pool at a large Midwestern university (Psychology SONA

pool) to recruit participants. Students who participated through SONA received course credit. The return rate of this strategy was not possible to calculate because it used an online system that recorded when a participant signed up for the study. It is not known how many potential participants read about the study but chose not to sign up. A second recruitment strategy was employed to increase variability in participants' potential career interests. Specifically, the first author obtained a list of randomly selected women from the University's Registrar and emailed those women, inviting them to participate in the study. To maximize the return rate, two follow-up emails were sent in two-week increments. Additionally, participants had a chance to win one of several $50 gift cards. The second recruitment strategy yielded a return rate of 30%. A third recruitment strategy was employed to increase variability in participants' career interests was to solicit participation through the first author's and her research team's personal contacts. Those who participated in this way also were eligible to win one of several $50 gift cards. The third recruitment strategy yielded a response rate of approximately 28%.

Participants completed the measures using an online survey system. They first read a consent form and indicated their consent by continuing with the survey. Next, they completed the survey in one of two orders: all participants completed the Bem Sex Role Inventory-Short Form first, then approximately half completed the block of work-family measures (i.e., the Planning for Career and Family Scale followed by the Anticipated Work-Family Conflict Scale), followed by the career-related block of measures (i.e., the Career Aspirations Scale, followed by the Occupational Engagement Scale). The other half of participants completed these two blocks in the opposite order. These blocks were counterbalanced to eliminate the possibility that the career measures might prime

54

participants to be more career-oriented in their responses on the work-family measures, and subsequently influence the overall results. Last, the participants reported their career choice(s) and filled out a demographics form. After they completed the measures, they received a brief description of the study and were thanked for their time.

Traditionality was coded based on the percentage of women employed in an occupation using U.S. Department of Labor data (2012b) in a continuous manner, with higher scores indicating a more female-traditional career choice. If a participant indicated they were considering more than one career, both careers were coded for traditionality. A team of two undergraduate research assistants independently matched the career entered by the participant to its closest match within the Department of Labor's data. Any disagreements between the two raters were given to the first author to independently code. The final match rate (defined as two raters coding the career identically) was 92%. When a career was coded differently by all three raters, the team came to consensus about which occupation best matched the career indicated by the participant.

Analyses

Analysis of Research Questions 1 and 2. Descriptive statistics on all scales and subscales were obtained. The relationships among the variables were assessed using Pearson *r* correlations and a correlation matrix was computed.

Rationale for Hierarchical Multiple Regression. Hierarchical multiple regression was selected to analyze hypotheses 1 through 6 because the purpose of the study is to add to the understanding of women's career development, beyond what is already known about instrumentality as a predictor of the selected criterions. As discussed in the literature review, substantial evidence exists for instrumentality as a predictor of career

development outcomes, so entering this variable first in the regression equations allowed us to test whether anticipated work-family conflict and willingness to compromise career for family added additional, unique variance. Anticipated work-family conflict was entered second because some evidence exists for its relationship with career planning. Finally, willingness to compromise was entered because no evidence beyond the instrument development study linked this construct to young women's career planning outcomes.

Analyses for Hypotheses 1a-c, 2a-c, and 3a-c. Four hierarchical regression analyses were used to test the contributions of instrumentality, anticipated work-family conflict, and willingness to compromise career for future children in predicting career choice traditionality, career aspirations (leadership-based and recognition-based), and occupational engagement. Instrumentality was entered first in the regressions, then anticipated work-family conflict, and finally willingness to compromise career for future children. Career choice traditionality was the dependent variable in the first equation, leadership-based career aspirations in the second equation, recognition-based career aspirations in the third equation, and occupational engagement in the fourth equation.

Analyses for Hypotheses 4, 5, and 6. Four regression analyses were used to test for moderating effects. Scale scores were standardized for instrumentality and willingness to compromise career for children. Instrumentality was entered in the first step of the regression. In the second step, the moderator variable (willingness to compromise career for future children) was entered. In the third step, the product term representing the moderator effects was entered. Specifically, the interaction term (instrumentality x willingness to compromise career for future children) was entered.

56

Career choice traditionality was the dependent variable in the first equation, leadership-based career aspirations for the second equation, recognition-based career aspirations for the third equation, and occupational engagement was the dependent variable in the fourth equation.

CHAPTER 4

Results

Preliminary Analyses

The initial page of the online survey was accessed by 223 people, with 205 participants meeting the inclusion criteria for participation and providing consent to participate in the research. Participants who were missing more than 15% of the items (not including the demographic variables) were deleted from the study, leaving a sample of 198. Then, participants who missed one or both quality control questions were eliminated, resulting in a sample of 178. It was discovered that one participant took the survey twice, so the second of her two response sets was removed, leaving a final sample of 177.

Missing values were analyzed using missing data analysis techniques in SPSS 20.0. The results suggested that there was no pattern for missing data, thus data imputation was conducted for 177 participants using maximum likelihood estimation for the Anticipated Work-Family Conflict measure. This technique makes minimal assumptions about the data, and uses an EM algorithm to impute missing data.

Prior to conducting the regression analyses, an evaluation of the assumptions for conducting multiple regression analyses was conducted. Using the Lack of Fit test, the null hypothesis of a linear relationship was rejected concerning the relationship between Occupational Engagement and two of the Anticipated Work-Family Conflict subscales (Time-Based Work-Interference-with-Family and Behavior-Based Family-Interference-With-Work). Since a strong majority of the variables appeared to have a linear relationship, we decided to proceed with multiple linear regression analyses. Next, the

Shapiro-Wilk statistic suggested that, across all variables, the data violated the assumption of normality of errors. To address non-normality, outliers greater than 3 standard deviations were removed prior to conducting linear regression analyses.

Consistent with recommendations from Frazier, Tix, and Baron (2004), z-transformations were applied to the continuous variables, including instrumentality and planning for future family (children subscale) prior to conducting the moderation analyses. In reporting descriptive statistics (e.g., means, standard deviations) and correlations, the non-transformed scores were reported.

Demographics

Demographic characteristics of the sample are reported in Table 1. Demographic data were available for 176 participants, unless otherwise noted. The average age of all participants was 19.64 ($SD = 1.40$). Information about year in school was collected from 136 participants; among them, approximately 40% were first year students, 31% were Sophomores, 13% were Juniors, and 15% were Seniors or beyond. In terms of race, participants were asked to select all responses that applied to them. Approximately 72% of the sample identified as White, 16% identified as Asian/Asian American, 11% identified as African American, 4% identified as Biracial/Multiracial, 3% identified as Hispanic/Latina, 1% identified as American Indian, and 2% identified as "Other" (responses to Other included: Haitian, Israeli, and Greek). In terms of sexual identity, approximately 94% of the participants identified as straight, 3% identified as bisexual, 2% identified as gay/lesbian, and 1% identified as queer.

The majority of participants were single (approximately 98%). Additionally, the majority of participants planned on being married or in a committed relationship in the

future (approximately 97%). In terms of future motherhood, approximately 94% planned to have children one day. Of the participants who planned to have children, approximately 38% planned to have 2 children, 34% planned to have 3 children, 17% planned to have 4 children, 4% planned to have one child, 1% planned to have 5, and 1% planned to have 6 or more children. The mean age at which the participants planned to start having children was 28.5 (*SD* = 1.98).

In terms of education, the participants held an average GPA of 3.46 (*SD* = .45). The participants were pursuing a variety of undergraduate majors (see Table 1), with the most frequently reported being Psychology (approximately 35%), Biology (18%), Business (5%), Education (4%), and Journalism (4%). Approximately 12% of participants planned to finish their education after earning a bachelor's degree, while 88% planned to go onto some kind of graduate study (37% Master's degree, 21% Ph.D., 19% M.D., 4% J.D., and 6% Other graduate degree). In terms of mother's highest education, approximately 36% of participants' mothers held a graduate/professional degree, 34% held a Bachelor's degree, 10% had some college, 9% had finished high school or earned a GED, 8% held an Associate's degree, 2% had some high school, and 2% answered "not applicable/other." In terms of father's highest education, approximately 41% of participants' fathers held a graduate/professional degree, 31% held a Bachelor's degree, 11% had some college, 9% finished high school or earned a GED, 4% held an Associate's degree, 3% answered "not applicable/other," and 1% had some high school.

Participants reported a wide range of careers that they were most strongly considering, which can be viewed in full in Table 2. Among the top-listed careers,

60

approximately 16% of participants considered becoming psychologists, 16% considered becoming physicians or surgeons, 6% considered becoming counselors, 4.5% considered becoming registered nurses, and, 4% considered becoming lawyers. Approximately 2.4% were considering careers in engineering or technology occupations.

Descriptive Statistics

To address the first research question of the study, descriptive statistics were calculated for all variables (see Table 3). The women in this sample, on average, had moderately high levels of instrumentality. On average, the participants had somewhat low levels of anticipated work-interference-with-family and anticipated family-interference-with-work across the domains of time, strain, and behavior. Participants had moderately high levels of willingness to compromise career for children. On average, participants planned to go into slightly more traditional careers, yet they held high leadership-based and recognition-based career aspirations. Additionally, they were highly occupationally engaged.

Correlation Analyses

To address the second research question, Pearson correlations were calculated among variables of interest (see Table 4). Significant relations were reported at the *p<.01* level. Among the participants, a high positive correlation was found between instrumentality and leadership-based career aspirations (*r=*.51), and a moderately strong-positive relationship was found between instrumentality and recognition-based career aspirations (*r* = .46), and between instrumentality and occupational engagement (*r* = .41).

Time-based anticipated work interference with family had a moderate positive relationship with time-based anticipated family interference with work (*r* = .31) and with

strain-based anticipated work interference with family ($r = .39$). Additionally, time-based anticipated work interference with family had a small positive correlation with strain-based anticipated family interference with work ($r = .22$), with behavior-based anticipated family interference with work ($r = .22$), and with leadership-based career aspirations ($r = .20$). Additionally, time-based anticipated work interference with family had a small negative relationship with traditionality of career choice ($r = -.27$). Time-based anticipated family interference with work was moderately correlated with strain-based anticipated work interference with family ($r = .30$) and with strain-based anticipated family interference with work ($r = .45$), while a small positive relationship was found between time-based anticipated family interference with work and willingness to compromise career for children ($r = .30$).

Strain-based anticipated work interference with family had a strong positive relationship with strain-based anticipated family-interference with work ($r = .52$), while strain-based anticipated work interference with family had a small positive relationship with behavior-based anticipated family interference with work ($r = .31$). A strong positive relationship was found between behavior-based anticipated work interference with family and behavior-based anticipated family interference with work ($r = .76$).

A small negative relationship was found between occupational engagement and behavior-based anticipated work interference with family ($r = -.24$) and between occupational engagement and behavior-based anticipated family interference with work ($r = -.22$). Moreover, occupational engagement was strongly related to both leadership-based career aspirations ($r = .44$) and to recognition-based career aspirations ($r = .51$).

Last, leadership-based career aspirations and recognition-based career aspirations had a high positive relationship ($r = .57$).

Regression Analyses

Four hierarchical multiple regression analyses were conducted to assess the contributions of the predictor variables in predicting each of the four dependent variables (career choice traditionality, leadership-based career aspirations, recognition-based career aspirations, and occupational engagement).

Collectively, instrumentality, anticipated work-family conflict, and willingness to compromise career for children accounted for 9.5% of the variance in the prediction of career choice traditionality (see Table 5). Anticipated work-family conflict accounted for unique variance, contributing 8.6% to the prediction of career choice traditionality. Moreover, when all variables were entered in the regression equation, only time-based anticipation of work interference with family contributed incremental variance; the less participants anticipated that work would interfere with time spent with family, the higher the traditionality of their career choice. When controlling for instrumentality and anticipated work-family conflict, willingness to compromise career for children did not contribute unique variance to the prediction of traditionality of career choice.

Collectively, instrumentality, anticipated work-family conflict, and willingness to compromise career for children accounted for 34.3% of the variance in leadership-based career aspirations (see Table 6). Instrumentality accounted for unique variance, contributing 30.9% to the prediction of leadership-based career aspirations; higher instrumentality related to higher leadership aspirations. When controlling for instrumentality, neither anticipated work-family conflict, nor willingness to compromise

63

career for children added a significant amount of variance explained regarding leadership aspirations. However, when all variables were entered in the regression equation, instrumentality contributed variance, as did anticipated strain-based family interference with work. In other words, when controlling for all other variables, the higher the participants' anticipation that family would be a strain on work, the higher their leadership-based career aspirations.

Collectively, instrumentality, anticipated work-family conflict, and willingness to compromise career for children accounted for 25.5% of the variance in recognition-based career aspirations (see Table 7). Instrumentality accounted for unique variance, contributing 21% to the prediction of recognition-based career aspirations; the higher the participants' instrumentality, the higher their desire for recognition in a future career. Moreover, when all variables were entered into the equation, only instrumentality contributed incremental variance. When controlling for instrumentality, anticipated work-family conflict and willingness to compromise career for children did not contribute unique variance to the prediction of recognition-based career aspirations.

Collectively, instrumentality, anticipated work-family conflict, and willingness to compromise career for children accounted for 28.5% of the variance explained in occupational engagement (see Table 8). Instrumentality accounted for unique variance, contributing 16.5% to the prediction of occupational engagement such that higher instrumentality related to higher occupational engagement. When controlling for instrumentality, anticipated work-family conflict contributed unique variance, explaining an additional 10.1% of variance in occupational engagement; in general the higher the participants' anticipated work-family conflict, the lower their occupational engagement.

When controlling for instrumentality and anticipated work-family conflict, willingness to compromise career for children explained an additional 1.9% of variance in occupational engagement; the higher the participants' willingness to compromise, the lower their occupational engagement. When all variables were entered into the equation, both instrumentality and willingness to compromise career for children contributed incremental variance, but none of the anticipated work-family conflict subscales contributed variance.

Moderation Analyses

Regression analyses were conducted to assess if willingness to compromise career for children moderated the relationship between instrumentality and each of the four criterion variables (i.e., traditionality of career choice, leadership-based career aspirations, recognition based career aspirations, and occupational engagement).

The regression equation testing whether willingness to compromise career for children moderated the relationship between instrumentality and career choice traditionality with the moderator variables collectively accounted for 2% of the variance in career choice traditionality (see Table 9). Variance was not explained by instrumentality, willingness to compromise (the moderator), or the moderator variable (instrumentality multiplied by willingness to compromise career for children).

The regression equation testing whether willingness to compromise career for children moderated the relationship between instrumentality and leadership-based career aspirations with the inclusion of the moderator variables collectively accounted for 31.3% of the variance in leadership-based career aspirations (see Table 10). Variance was

accounted for by instrumentality (30.9%), but not by willingness to compromise career for children, or by the product term of the predictor and the moderator.

The regression equation testing whether willingness to compromise career for children moderated the relationship between instrumentality and recognition-based career aspirations with the inclusion of the moderator variables collectively accounted for 22.7% of the variance in recognition-based career aspirations (see Table 11). Variance was accounted for by instrumentality (20.6%), but not by willingness to compromise career for children, or by the product term of the predictor and the moderator.

The regression equation testing whether willingness to compromise career for children moderated the relationship between instrumentality and occupational engagement with the inclusion of the moderator variables collectively accounted for 19.9% of the variance in occupational engagement (see Table 12). Variance was accounted for by instrumentality (17.2%), and by willingness to compromise career for children (2.1%) but not by the product term of instrumentality and willingness to compromise.

Exploratory Analyses

To address the exploratory research question of how expressivity relates to career development, Pearson correlations were calculated between expressivity and the variables of interest. Significant relations were reported at the *p<.01* level. Among the participants, expressivity had a small, negative relationship with strain-based anticipated work interference with family ($r = -.26$) and a small, positive relationship with willingness to compromise career for children ($r = .17$). In addition, expressivity had a small, positive

relationship with recognition aspirations ($r = .17$) and a small, positive relationship with

occupational engagement ($r = .26$).

Chapter 5

Discussion

The present study's goal was to expand knowledge about variables associated with career development among undergraduate women. Specifically, it assessed the predictive strength of instrumental characteristics, anticipation of work-family conflict, and willingness to compromise career for family on traditionality of career choice, career aspirations, and occupational engagement. Results showed that, among these predictors, instrumentality explained the most variance in leadership aspirations, recognition aspirations, and occupational engagement. When controlling for instrumentality, anticipated work-family conflict explained a small but significant portion of career choice traditionality, leadership aspirations, and occupational engagement while willingness to compromise career for family contributed uniquely to the prediction of occupational engagement. Willingness to compromise career for children was not found to moderate the relationship between instrumentality and each of the outcome variables, and in general, very little variance in traditionality of career choice was explained by the selected variables. Finally, the constructs of anticipated work-family conflict and willingness to compromise career for family were found to have a small, positive relationship.

The sample was predominately White, straight, early in their undergraduate career, and had college-educated parents. They held a high GPA on average, and most intended to pursue graduate school. Participants were majoring primarily in Psychology and Biology, and while they held a wide range of career choices, the most popular were psychologist and physician. The majority of participants planned to marry and have

children, but they planned to delay motherhood until their late 20's. Based on race, sexuality, grades, and parents' education, these young women, on average, likely benefited from many social privileges. Implications of these research findings may not expand beyond this sample.

Instrumentality

Instrumentality was found to be the strongest predictor of leadership and recognition-based career aspirations and occupational engagement. This finding is consistent with research linking instrumental characteristics and career aspirations in a sample of a similar age and achievement level (O'Brien & Fassinger, 1993). Additionally, higher agency upon college graduation has been found to predict greater career success up to 15 years post-graduation (Abele & Spurk, 2011). Previous research has not assessed the association between instrumentality and occupational engagement, but it is not surprising that instrumentality was a strong predictor of this outcome variable. Occupational engagement represents career-related exploration and enrichment, so it is consistent that undergraduate women who are ambitious, assertive, and risk-taking will be more engaged with self-initiated career discovery outside of the classroom. Promoting the development of instrumental characteristics in young women may prepare them for this type of self-directed exploration when they reach college. Additionally, because of its emphasis on self-knowledge through career exploration, it is logical to predict that those who are more occupationally engaged may possess greater career congruence or career decision-making self-efficacy, though more research is needed to test these relationships. Future research might also examine whether these variables are highly related because they may overlap with extraversion. A relationship between

instrumentality and extraversion has been found in several studies (Francis & Wilcox, 1998; Marusic & Bratko, 1998). Additionally, many items on the occupational engagement scale involve social, other-oriented activity – domains in which extraverts tend to feel energized.

Another reason why characteristics such as dominance, assertiveness, independence, and a willingness to take risks may be associated with occupational engagement and the leadership and recognition aspects of career aspiration is that these personality qualities probably overlap with similar constructs, such as achievement orientation and self-promotion. Though it is encouraging to find moderately high instrumentality and high career aspirations in the present sample, there is still a need to study how women harness their instrumentality throughout their careers. For example, literature on women's self-promotion in the workplace – which is likely associated with women enacting their instrumentality – suggests that women sometimes fear backlash for self-promotion (Moss-Rascusin & Rudman, 2010) and, compared to men, they tend to be penalized in the workplace for self-promoting behavior (Budworth & Mann, 2010; Phelan, 1998). There is still a need to promote and normalize the expression of and acceptance of instrumental traits in women.

Further support for the need to shift gender norms regarding instrumentality lies in recent research about stereotype threat. Continuous exposure to stereotype threat may play a role in one's long-term persistence in domains where they are the numerical minority – for example, women's persistence in STEM careers or higher level leadership positions (Apel & Kronberger, 2012; Woodcock, Hernandez, Estrada, & Schultz, 2012). Woodcock et al. (2012) modeled how this can occur in their longitudinal study of ethnic

minority students' persistence toward scientific research careers: among the Hispanic

students, they found that continuous exposure to stereotype threat (via its negative effect

on performance) lead to domain disengagement (i.e., a self-protective response in which

one devalues a domain to reduce the relationship between the domain and one's

perception of their ability), and over time, domain disengagement leads to domain

disidentification (i.e., the abandonment of an identity that was once highly valued).

It is possible that instrumental women who are exposed to stereotype threat also

may disengage, and over time disidentify with valued domains such as higher level career

aspirations or nontraditional career pursuits. For example, many women in the present

study planned to become psychologists or physicians – both of which are careers that

require strong performance in math and science. Since a stereotype exists that women do

not perform well in these domains, female college students' performance may suffer if

they are reminded of this stereotype, which in turn, can impair the development of their

ability in these domains (Apel & Kronberger, 2012; Boucher, Rydell, Van Loo, & Rydell,

2012). Studying instrumental women's career aspirations and engagement longitudinally

would shed light on whether disengagement and disidentification occurs in the face of

stereotype threat.

Anticipated Work-Family Conflict and Planning for Future Children

The findings of the present study also suggest that undergraduate women are

thinking about how their future family will fit with their career. After controlling for

instrumentality, small relationships emerged between anticipated work-family conflict

and several outcomes, as well as between willingness to compromise career for children

and occupational engagement. Each of these findings will now be examined in turn.

First, time-based anticipated work interference with family predicted career choice traditionality such that the lower participants' anticipation that work would interfere with time spent with family, the more traditional their career choice. This is consistent with the finding that women's desire for a flexible career is the number one predictor of switching from a male-dominated career pursuit to a neutral or female-dominated career pursuit (Frome et al., 2006). Since time-conflict emerged as the significant subscale – as opposed to strain or behavior – these findings also correspond to Eccles et al.'s (1999) thinking that young women who value caretaking and making occupational sacrifices shift their pursuits away from careers perceived as time consuming. Whether female-dominated careers are actually less time consuming than male-dominated careers is not necessarily a generalization one can make, but the present study does suggest an association between perceptions of time spent at specific occupations and the traditionality of a career selection. Also, because of the correlational nature of this study, one cannot conclude that anticipating work will interfere with the time spent with one's family causes the selection of a more traditional career, though this direction does seem more likely. A third variable could also explain the relationship; perhaps those who choose more traditional careers also have more awareness of multiple roles and are making a realistic assessment of possible future conflict. Since greater self-efficacy for combining multiple roles is related to lower anticipated work-family conflict overall (Westring & Ryan, 2011), an intervention to increase multiple role self-efficacy might benefit young women who are in the process of making a career selection.

Second, strain-based anticipated family interference with work predicted leadership aspirations such that the greater participants' anticipation that family would be

a strain on their work, the greater their leadership aspirations. In other words, anticipating that stress at home will spill over into work (e.g., family responsibilities, tension or anxiety from family life) increases along with desire for a leadership position (e.g., promotions, rising to the top, managing others, shaping the direction of the organization). Anticipating this kind of strain and its potential impact on performance at work may represent young women making a realistic assessment of the stress that comes along with combining work and family, especially since traditional gender role expectations assign primary caregiving responsibilities to women. Undergraduate women are aware of these expectations: even though they desire an egalitarian division of labor at home, they expect to take on 70% of the childrearing and housekeeping chores in their future families, even if they desire a career (Askari et al., 2010). The present study suggests that this kind of strain is more salient for those who desire workplace leadership. Perhaps interventions that help couples negotiate work-family responsibilities would help reduce the strain that could potentially prevent women from fulfilling their career aspirations.

Third, both anticipated work-family conflict and willingness to compromise career for children predicted occupational engagement. In general, the more one anticipated work-family conflict, the less occupationally engaged they were, although no single dimension of anticipated work-family conflict emerged as a significant predictor of incremental variance in occupational engagement. After controlling for anticipated work-family conflict, the greater the participants' willingness to compromise career for children, the lower their occupational engagement. Taken together, a picture emerges in which some young women are less actively engaged in career exploration and enrichment

73

when they anticipate greater work-family conflict or take their future children into their career considerations.

One interpretation of this finding is that it is an early example of the phenomenon of "leaving before you leave," in which women have been observed opting out of career-advancing opportunities long before they may need to compromise to start a family (Sandberg, 2010). Another interpretation is that some women tend to be less career-oriented than others, preferring to be home-centered (Ferriman et al., 2009; Hakim, 2006). In fact, willingness to compromise career for children had a moderate inverse relationship with career orientation (Ganginis Del Pino et al., 2013). The present finding may reflect the level of occupational engagement women have when they also have a strong orientation toward family. The likelihood of the latter scenario is complicated by the makeup of this sample: these young women tended to have a high GPA, high leadership and recognition aspirations, and a desire to gain a graduate education. By these markers, the sample appears invested in career – and perhaps even above average in this domain (though subjective career orientation was not measured). Objectively, this is a group of women that teachers, mentors, and psychologists would especially want to encourage to follow their ambitions; the public sphere would benefit from their talents.

Recall that Krieshok et al.'s (2009) trilateral model of adaptive career decision-making suggests that the greater the occupational engagement, the better guided one's rational and intuitive cognitive processes will be with regard to career decisions. In the context of the present study, career engagement simply means exploring one's interests and how they might fit into a fulfilling career (e.g., getting involved with student groups, having contact with people in fields of interest, talking about career choices with friends).

Thus, regardless of where one lies on the spectrum between career and family orientation, occupational disengagement that is associated with concerns about future motherhood is concerning in a sample of this age.

Moderation Findings

The hypotheses that willingness to compromise career for children would moderate the relationship between instrumentality and the outcome variables were not supported. No moderation effects were discovered. It appears that at the undergraduate level, women's ambitious personality traits remain linked to their career ambitions, and consideration for future children does not disconnect these women from their ambitious career plans. This was somewhat surprising because past research has shown that a desire for a family-flexible career predicts switching from a nontraditional career to a neutral or traditional career (Frome et al., 2006). In the present study, however, willingness to compromise accounted for a small amount of variance in career choice, leadership aspirations, recognition aspirations and occupational engagement (.4%, .2%, .2% and 1.9%, respectively), while instrumentality accounted for a much larger portion of variance (though this was not the case for career choice traditionality). It is possible that an interaction between these variables might be detected among an older sample, or among a sample of women who are nearer to the age at which they will manage multiple roles. In fact, willingness to compromise career has been found to increase as a function of life stage (Gregor & O'Brien, 2013). The researchers found that willingness to compromise career for children was a predictor of leadership aspirations among female clinical and counseling doctoral students, but students who were closer to completing their doctorate were more willing to compromise their career for future children.

Sampling women in early adulthood – who have recently entered the workforce – would shed more light on whether instrumentality and family variables interact to predict career outcomes.

Additionally, perhaps willingness to compromise career for children would interact with instrumentality among women who have been exposed to, or are more vulnerable to stereotype threat. As discussed above, stereotype threat can have a negative effect on performance, persistence, and the development of ability when women engage in nontraditional domains (e.g., STEM careers) or when they are in the numerical minority (e.g., higher level leadership positions). It is possible that when women disengage and disidentify from highly valued career domains, they might also increase in their willingness to compromise their careers for their children. Disengagement implies a self-preservation stance (Woodcock et al., 2012), thus it is possible that women turn toward the primary caregiving role upon experiencing threat and challenge in their career pursuits. Since the caregiving role is culturally valued for women, the mere presence of an alternative option for restoring meaning and purpose in life (i.e., taking on the caregiving role after facing continuous challenge or threat) might help explain why women still tend to be concentrated in low-paid, low-prestige occupations. Put another way, men are 1) less likely than women to face stereotype threat across career domains, and 2) more likely than women to persist in their careers due to the absence of a culturally-sanctioned alternative role besides primary wage-earner. Future studies might be designed to test whether willingness to compromise is a function of stereotype threat exposure among women.

On the other hand, perhaps different variables interact with instrumentality in the context of career development. Women's perceptions about how to be a good enough mother might be an important variable to develop and measure. The social construction of motherhood tends to align with an intensive mothering style that is characterized by high demand and self-sacrifice (Johnston & Swanson, 2006; Medina & Magnuson, 2009). Increasingly, working women are constructing an extensive mothering ideology that involves delegation of child-rearing and considers work a positive influence on the mother's well-being and identity (Christopher, 2012). Young women may vary in their internalization of intensive and extensive mothering, and this variable may predict which women are more likely to leave the workforce.

There may also be methodological reasons for the absence of moderation findings. It is possible that the instrument measuring willingness to compromise career for family does not capture this construct in full. For example, the extent to which a young woman takes her future children and role as a caregiver into account with her career choices may not be conscious, so self-report alone may not tap into participants' schemas about how children fit into their future career. Additionally, the items may be too general or abstract to tap into this construct fully. Perhaps tying items to specific, realistic scenarios – in which women would have to make work-family choices – would give even more information about their willingness to compromise career for children.

Traditionality of Career Choice

Little variance in career choice traditionality was explained by the selected variables. It was surprising that instrumentality did not predict a less traditional career choice because this finding has been reported in the literature (Fassinger, 1990; O'Brien

77

& Fassinger, 1993; Weisgram et al., 2011). The present study may be limited in that both Fassinger (1990) and O'Brien and Fassinger (1993) defined instrumentality and traditionality of career choice with greater complexity. For example, in addition to U.S. Department of Labor gender distribution, O'Brien and Fassinger (1993) measured prestige of career choice, congruence of career choice (with individual's Holland code), and realism of career choice; they measured instrumentality with math self-efficacy and career decision-making self-efficacy in addition to using the Bem Sex Role Inventory. These added dimensions reflect the complexity with which individuals demonstrate instrumentality and select careers, and it is possible that variables such as math self-efficacy and congruence are more salient in career choice compared to instrumentality alone. Future research should investigate whether self-efficacy variables are stronger predictors of career planning than self-report measures of instrumentality.

The present study's failure to find a significant association between instrumentality and career choice traditionality supports Gray and O'Brien's (2007) argument that it is important to assess the extent of higher order career aspirations across both traditional and nontraditional careers. Traditional career choices offer opportunities for leadership and advancement that are not captured in the measure of traditionality used in the present study.

Relationship between Anticipated Work-Family Conflict and Willingness to Compromise

An exploratory goal of the present study was to assess whether anticipated work-family conflict and willingness to compromise career for family were distinct constructs. Our findings suggest that these constructs share some overlap, but appear to be distinct in a sample of undergraduate women. In other words, work-family conflict is a concern for

78

women whether they are willing to compromise their career for children or not. The strongest relationship emerged between willingness to compromise and the time dimension of anticipated work-family conflict, such that the stronger anticipation that family would interfere with work, the more willingness participants had to compromise their career for children. Though further research is needed regarding this relationship, time may be a salient component for women when they take future children into their career considerations. In fact, it is consistent with findings that, by their mid-30's, women in STEM careers tend to value limiting their work hours in comparison to their male counterparts (Ferriman et al., 2009).

Sample Considerations

Several properties of the present sample warrant consideration in the interpretation of these findings. This sample of young women had high career aspirations, strong intentions to go to graduate school, and a high average GPA. Additionally, the participants, on average, came from well-educated households – as indicated by the finding that 31% of their mothers and 42% of their fathers had a graduate degree. It is possible that, given the fact that most participants were early in their college education, their leadership and recognition aspirations may reflect parental expectations rather than the participants' true desires for their future. On the other hand, the high average GPA of the sample and the high intention to go on to graduate school (87%) also may be a reflection of recruitment methods two and three: recruiting via the University Registrar and through personal contacts yielded a return rate of about 30%. It is possible that those who volunteered to participate without receiving course credit were more highly motivated than the average college student. If this is the case, the inclusion of these

participants in the sample may have inflated career and education ambitions to the point that the anticipation variables (anticipated work-family conflict and willingness to compromise career for children) were weakened as predictors. In sum, the present study may not have represented the true role that anticipated work-family conflict or willingness to compromise career for children play in an average college woman's career planning. Future research on these variables should focus on recruitment strategies that would yield a more random sample of university women – for example, these variables could be included in mass testing initiatives on college campuses.

Research Implications

Future research in women's career development should consider studying anticipation of work-family conflict and considerations for future children among women who have already entered the workforce but are still in the early stages of defining their careers, and after having their first child. Increasingly, women are planning to delay motherhood (Hoffnung, 2004), allowing for most of their 20's to explore various options in life. This period of emerging and early adulthood may be a turning point for some women regarding their career aspirations. It is possible that the struggle associated with enduring the entry-level of many careers might prompt women to reconsider their priorities. If women feel "stuck," the prospect of taking on the primary caregiving role may become more appealing Anecdotally, some career-focused women have reported choosing stay-at-home motherhood after becoming disillusioned with corporate environments that put profits before the social good (Matchar, 2013). It is also possible that women who cannot find work in their field may turn to the traditional careers of teaching and nursing, even though they had not considered them in college.

Along these lines, it would be informative to research how variables such as anticipated work-family conflict and willingness to compromise career for family change across time. Longitudinal research following women from college to adulthood would enhance our understanding of whether these variables can predict actual career behaviors. This information would help inform intervention efforts. It is valuable to connect early career development with later career outcomes because high school and college students have access to free or low-cost career counseling. Moreover, intervening early may help prevent the loss of talented women across high-level, high-prestige occupations.

In addition, the present research attempted to increase knowledge of how several new instruments in vocational psychology operate in a population of undergraduate women. More research is needed on the PLAN, AWFC, and OES-S in particular to assess their reliability construct validity and predictive validity. Future studies should include men, women of color, and individuals from various social classes. It is possible, and even likely, that perceptions of work and family differ across gender and cultural context. For example, the construct of "willingness to compromise career for children" might not be applicable to African American women, or women in the working class, who have never had an option to stay at home with their children full-time.

Implications for Practitioners

One clinical implication from the present study, especially among vocational clinicians and those who work in a high school or college counseling center, is that young women's instrumental traits play a big role in career aspirations and occupational engagement during college. The extent to which women integrate agency into their identity might influence their future career behaviors. Harnessing instrumentality is

81

crucial when individuals negotiate for pay, promotion, and flexible work arrangements. Counselors could highlight the instrumental aspects of their female clients' personality and engage them in discussion about how it feels expressing agency in a career context. Outreach programs or therapy groups that focus on assertiveness training and normalizing instrumentality might help prevent women from compromising their career. These types of interventions are not only appropriate for college students, but also for women any career stage, and are likely needed to enhance career persistence among women who are in the workforce. Fostering instrumentality among women at all career levels might give more women the skills and motivation to raise their voices and hold corporations accountable for making workplaces more family friendly.

Another example of the way outreach could enhance instrumental behavior among women is to target an even younger population: girls in middle school. Interventions might be designed to educate girls about stereotype threat, and perhaps inoculate against early disidentification with domains such as math and science. Since the development of ability in stereotype-linked domains has been found to be related to the presence of stereotype threat (Appel & Kronberger, 2012), efforts to reduce stereotype threat in middle school could be undertaken. For example, presenting girls with "gender fair" information prior to learning in gender stereotyped domains may reduce the effect of stereotype threat. Evidence of this was shown in a study of college women learning a new math concept: receiving the "gender fair" prime (i.e., "these math tasks do NOT show gender differences) *prior* to learning seemed to be the key to neutralizing the negative effect of stereotype threat on performance (Boucher et al., 2012). More research

should be done to develop strategies for creating "gender fair" classrooms, not only in middle schools, but also in high schools and universities.

A second message is that female clients' instrumental traits will often align with their stated career goals, but this is not the entire picture. Considerations for future children and anticipated work-family conflict may surface only subtly. Drawing out and exploring these concerns may enhance young women's persistence in their career pursuits. For example, the first author observed a client who considered dropping her major after struggling in one of her courses. She mentioned, almost in passing, that the decision felt right because she wanted to be a mom. For this client, it appeared that the family role took precedence over the work role when she lost confidence in her ability. Clinicians could potentially work with female clients to increase confidence in their abilities and ambitions. Administering the anticipated work-family conflict and the planning for future family measures would enhance discussion of the client's career development. Moreover, by discussing work-family concerns, clinicians could help clients brainstorm the many ways to manage multiple roles – including choosing a partner who will value their career and be open to taking on a larger role in childcare. These discussions would potentially help clients develop multiple role self-efficacy, which has been found to relate to reduced anticipated work-family conflict (Weisgram et al., 2011). This clinical implication is only tentative, given the small variance accounted for by anticipated work-family conflict and willingness to compromise career for children. More research is needed to replicate these findings and to clarify whether subtle work-family concerns in college have a significant impact on career conscription.

Finally, the inverse relationship between willingness to compromise career for children and occupational engagement tentatively suggests that outreach programs may be needed on college campuses to enhance career exploration and engagement among female students. As Betz (1989) argued, a null educational environment favors men because they are socialized to be career-oriented. Interventions directed at undergraduate women could raise awareness of how women are affected by multiple role expectations. Additionally, vocational tools such as the Strong Interest Inventory could be employed to help female students learn how their personalities map onto specific careers. New students could be matched with faculty members or student groups in their interest areas. Programs along these lines might mitigate the null environment and would perhaps even make nontraditional options, such as STEM majors, more accessible to women.

Limitations

One limitation of the present study is that several of its measures are relatively new (i.e., Planning for Career and Family Scale (PLAN), Occupational Engagement Scale for Students (OES-S), and six-dimensional Anticipated Work-Family Conflict Scale (AWFC)) and one measure is presently undergoing revision (i.e., the Career Aspirations Scale (CAS)). An instrument development study for the OES-S has not yet been published in a peer-reviewed journal, so it has not yet been held to outside scrutiny. That said, the OES-S was found to have adequate internal reliability and construct validity. In addition, the AWFC and PLAN were both recently peer-reviewed and published. The choice to include these relatively new measures was made because they represent constructs missing from vocational psychology research in general, and women's career development research in particular. In addition, the present study

84

theorized and hypothesized the expected directions of relationships between these measures, thus this study represents one of the first efforts to put these measures to the test.

A second limitation to the present study is its narrow multicultural scope. The choice to treat college-aged women as a somewhat homogenous group overlooks research that within-group differences exist between college women of different ethnicities. For example, Greenman (2011) found that Asian American female engineers were less likely than White female engineers to reduce work hours upon having children. Career and mothering expectations are likely to vary across cultural contexts. In fact, historically and presently, White women tend to be the only group with the privilege and resources to stay at home full time with their children. The present line of research could be developed and improved by focusing future recruitment efforts on specific marginalized groups of women, in order to find out whether the career and mothering variables of the present study have significant relationships. Recruitment strategies that could be used include advertising directly to women of a specific marginalized ethnicity across campus or multiple universities, gaining permission from student groups focused on ethnicity to advertise the study, and by making use of the university Registrar to help identify and reach out to a specific population of interest. Testing between group differences may be a logical next step as well, as it could help clarify for whom the relationships highlighted by the present study hold true. However, prior to testing for group differences, meaningful psychological processes that could be driving potential group differences should be identified rather than using race or ethnicity as an obvious explanatory variable in itself.

A third limitation is the sample's lack of variability in college major representation. Women who are studying psychology and biology may view work-family variables differently than women in STEM or business majors. It would be worthwhile to assess whether anticipated work-family conflict and planning for future family variables have more salience when women are under-represented in their major. This information would assist practitioners in determining which women to target for outreach and intervention.

To conclude, the present research lends support to what has become common knowledge in the United States: there are many ambitious young women in our universities who are poised to take on high status positions in a variety of occupations. This has been true for many decades, so when it does not happen, it becomes clear that time alone will not reverse the historical trend for women and men to take on roles in separate spheres. Intervention must occur at various societal levels to reverse the trend of women being circumscribed to low-paid, low-prestige positions. It is our hope that young women can be encouraged to "lean in" and learn to feel at home acting out their ambitions. Moreover, we hope that helping young women and men develop a conscious awareness of how work-family concerns relate to women's career choices, we might prepare the next generation to make the personal political and advocate for change at home and in the workplace.

Figure 1: Hypothesized moderator effects for the relationship between instrumentality and career choice traditionality.
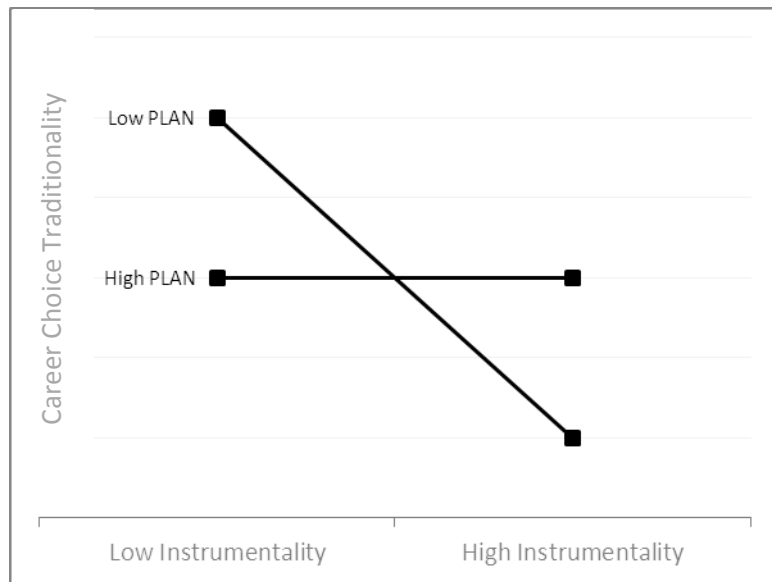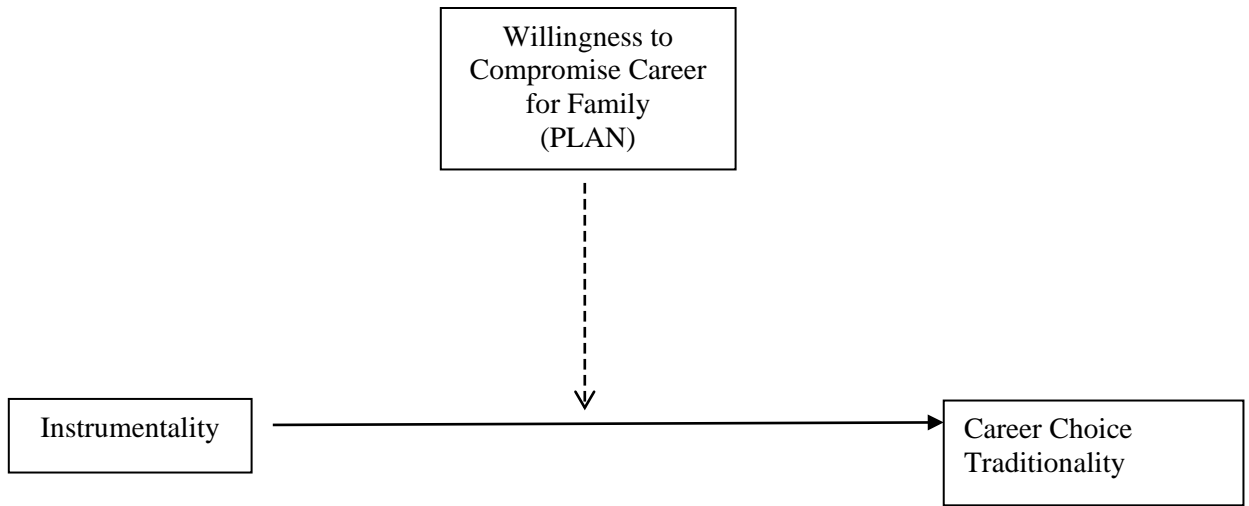
Figure 2: Hypothesized moderator effects for the relationship between instrumentality and career aspirations.
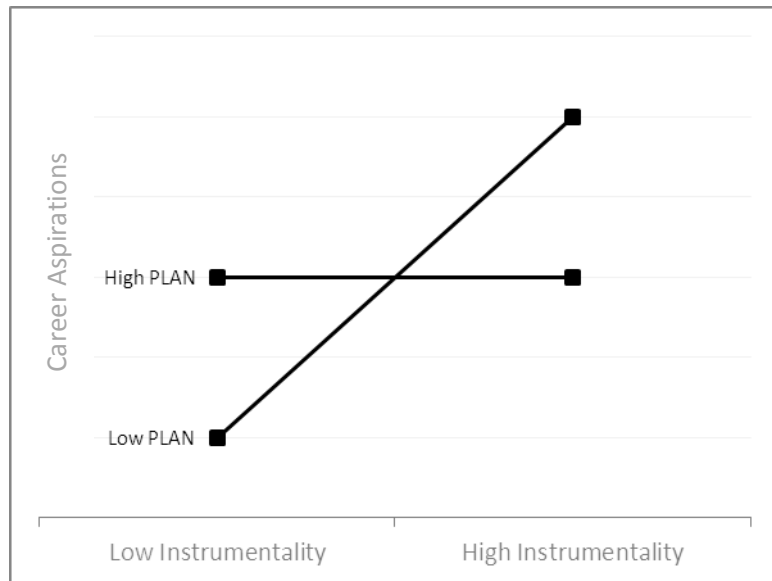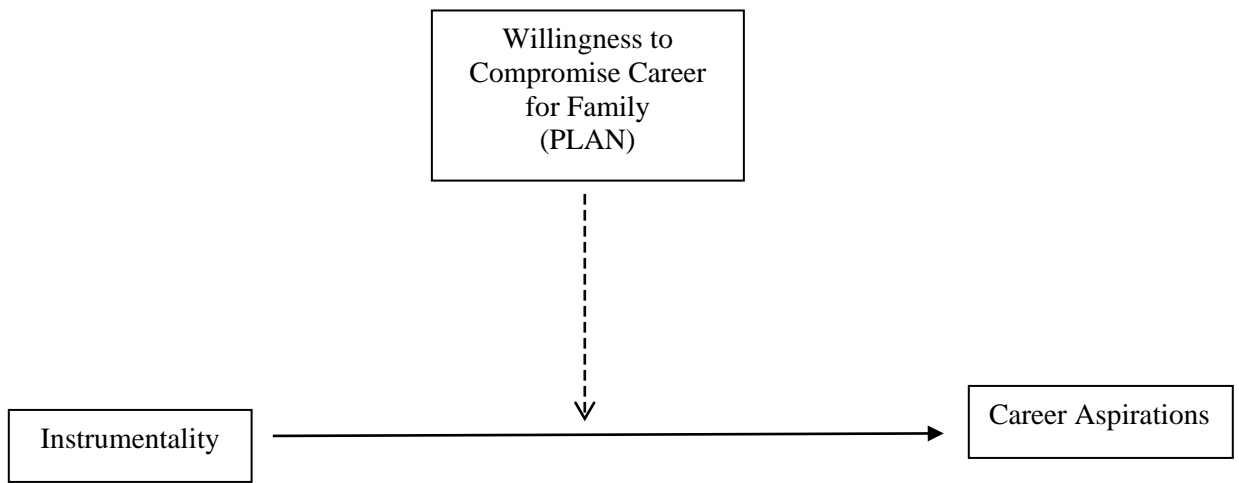
Figure 3: Hypothesized moderator effects for the relationship between instrumentality and occupational engagement.
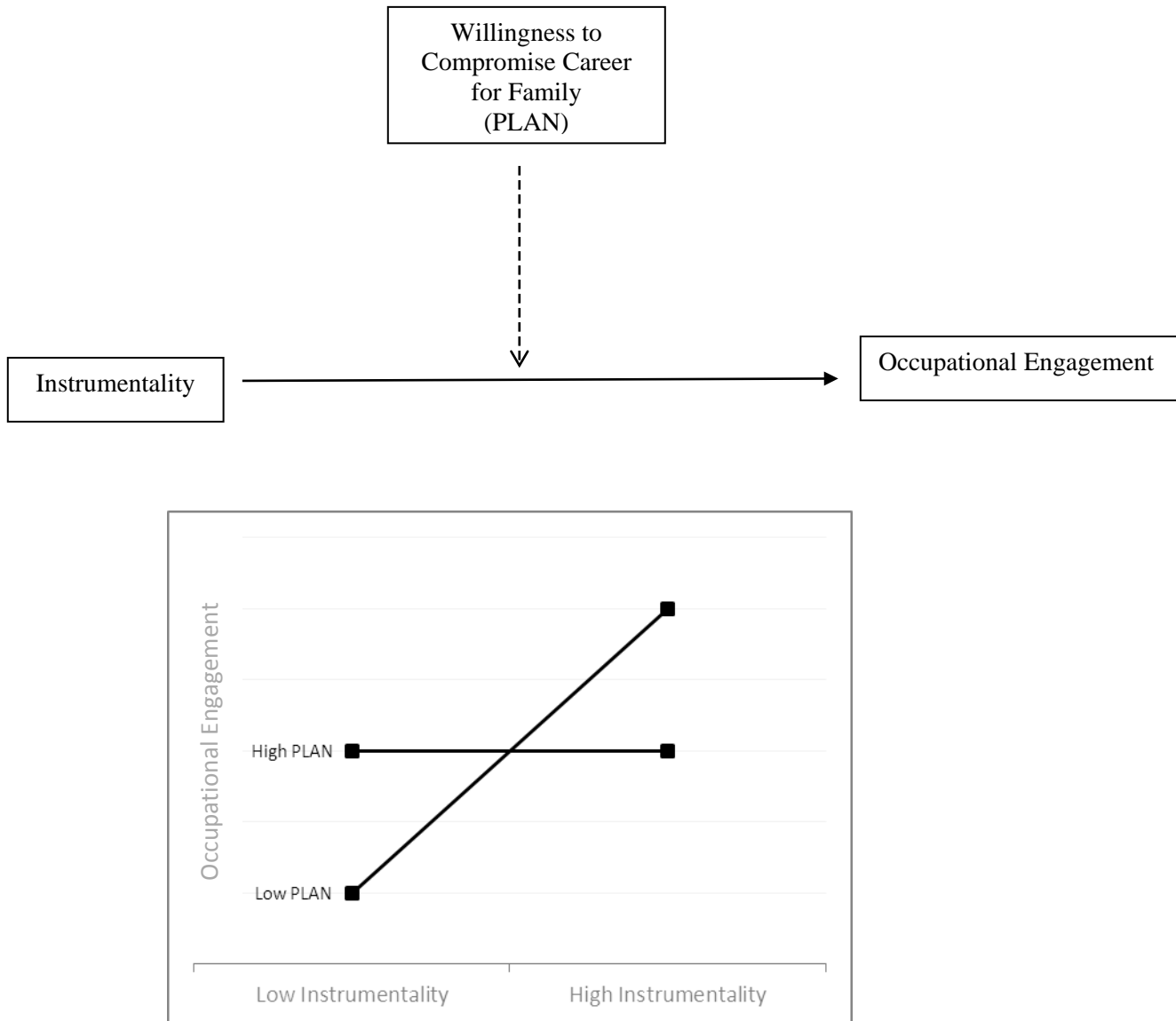
Table 1. *Demographic characteristics for total sample (N=176)*

Variable	%	N	Variable	%	N
Year in school			Father's highest degree		
Freshman	40.4	136	Some high school	.6	176
Sophomore	30.9	136	High school/GED	8.5	176
Junior	13.2	136	Some college	11.4	176
Senior or beyond	15.4	136	Associate's Degree	4	176
Race			Bachelor's Degree	31.3	176
African American	11.3	176	Graduate Degree	41.5	176
Asian/Asian American	15.8	176	NA/Other	2.8	176
American Indian	0.6	176			
Biracial/Multiracial	4.0	176	Major		
Hispanic/Latina	2.8	176	Art	0.6	176
White	71.2	176	Biochemistry	1.1	176
Other	1.7	176	Biology	17.5	176
Sexual Identity			Business	5.1	176
Bisexual	2.8	176	Chemistry	1.1	176
Gay/Lesbian	1.7	176	Communications	4.0	176
Queer	0.6	176	Community Health	2.8	176
Straight	94.9	176	Criminal Justice	2.3	176
Relationship Status			Criminology	0.6	176
Single (never married)	98.3	176	Education	4.0	176
Living with partner	1.7	176	Engineering	1.7	176
Plan to be in a committed relationship	97.7	176	English	3.4	176
Plan to have children	94.3	176	Environmental Science	1.1	176
Education plans			Family Science	2.8	176
Bachelor's	12.5	176	Geographic Systems	0.6	176
Master's	37.5	176	Hearing/Speech Science	1.1	176
Ph.D.	21	176	History	1.7	176
M.D.	19.3	176	Jewish Studies	0.6	176
J.D.	4.0	176	Journalism	4.0	176
Other graduate degree	5.7	176	Kinesiology	2.8	176
Mother's highest degree			Nursing	2.3	176
Some high school	1.7	176	Political Science	1.7	176
High school/GED	8.5	176	Psychology	34.5	176
Some college	10.2	176	Sociology	0.6	176
Associate's Degree	7.9	176	Theatre	0.6	176
Bachelor's Degree	33.9	176	Women's Studies	1.1	176
Graduate Degree	35.6	176			
NA/Other	1.7	176			

Variable	Mean	SD	Actual Range	Possible Range
Age	19.64	1.40	17.5-27.5	NA
GPA	3.47	.45	0.9-4.0	0.0-4.0
Age at first child	28.5	1.98	24-35	NA
Number of children desired	3.58	1.04	0-"6 or more"	0-"6 or more"

Table 2. *Career choice for participants who have decided on a career and undecided participants' first choice of career.*

Career	%	N	Career	%	N
Business (Total)	*13*	*23*	*Liberal Arts-Related (Total)*	*6.3*	*11*
Accountants and Auditors	1.1	2	Arts, Design, Entertainment, Sports and Media Occupations	2.3	4
Advertising and Promoting Managers	.6	1			
Business and Financial Operations	2.3	4	Designers	.6	1
Human Resources Managers	1.1	2	News Analysts and Reporters	3.4	6
Marketing and Sales Managers	2.3	2			
Medical and Health Services Managers	1.1	2	*Protective Services (Total)*	*1.8*	*3*
			Detective and Criminal Investigators	.6	1
Meeting, Convention, and Event Planners	1.1	2	Police and Sheriff's Patrol Officers	.6	1
Public Relations and Fundraising Managers	3.4	6	Protective Service Occupations	.6	1
STEM (Total)	*2.4*	*4*	*Research (Total)*	*20.9*	*37*
Architecture and Engineering Occupations	.6	1	Biological Scientists	.6	1
Chemical Engineers	.6	1	Environmental Scientists and Geoscientists	1.1	2
Engineers, Other	.6	1			
Web Developers	.6	1	Life, Physical, and Social Science Occupations	1.1	2
Healthcare – Primary (Total)	*33.1*	*37*			
Dentists	2.3	4	Medical Scientists	1.1	2
Pharmacists	1.7	3	Miscellaneous Social Scientists	1.2	2
Physicians and Surgeons	15.8	28			
Veterinarians	1.1	2	Psychologists	15.8	28
Healthcare – Support (Total)	*13.5*	*37*	*Social Services (Total)*	*9*	*16*
Healthcare Practitioners and Technical Occupations	1.1	2	Community and Social Service Occupations	1.1	2
Occupational Therapists	1.1	2	Counselors	6.2	11
Physical Therapists	3.4	6	Social Workers	1.7	3
Physician Assistants	1.7	3	*Teachers (Total)*	*6.8*	*12*
Registered Nurse	4.5	8	Elementary/Middle	1.7	3
Speech-Language Pathologists	1.7	3	Other Teachers	1.1	2
Law (Total)	*4*	*7*	Postsecondary	.6	1
Lawyers	4	7	Preschool/Kindergarten	.6	1
			Secondary School	1.7	3
			Special Education	1.1	2

Table 3. *Descriptive statistics for total sample (N=177)*

Variable	Mean (SD)	Range (Possible)	α	N
Instrumentality	4.75 (.76)	2.35-6.5 (1-7)	.90	177
AWFC Time WIF	7.85 (2.42)	3-15 (3-15)	.82	177
AWFC Time FIW	7.86 (2.04)	3-13 (3-15)	.78	177
AWFC Strain WIF	7.12 (2.30)	3-12 (3-15)	.79	177
AWFC Strain FIW	6.57 (2.09)	3-13 (3-15)	.85	177
AWFC Behavior WIF	6.72 (2.17)	3-12 (3-15)	.75	177
AWFC Behavior FIW	6.91 (2.30)	3-12 (3-15)	.85	177
PLAN children	30.47 (6.70)	12-48 (12-48)	.91	177
Career choice traditionality	57.73 (20.61)	12.60-98.10 (0-100)	NA	174
Leadership aspirations	14.14 (4.96)	0-20 (0-20)	.91	177
Recognition aspirations	9.82 (3.89)	1-16 (0-16)	.85	177
Occupational engagement	51.31 (11.11)	19-70 (14-70)	.92	177

Note. *Anticipated Work Family Conflict (AWFC); Work Interference with Family (WIF); Family Interference with Work (FIW); Willingness to compromise career (PLAN)*

Table 4. *Correlation table for total sample.*

Variable	1	2	3	4	5	6	7	8	9	10	11	12
1.Instrumentality	1											
2. AWFC Time WIF	.19	1										
3. AWFC Time FIW	.00	.31*	1									
4. AWFC Strain WIF	-.11	.30*	.30*	1								
5. AWFC Strain FIW	.-.18	.45*	.45*	.52*	1							
6. AWFC Behavior WIF	-.03	.05	.09	.19*	.29*	1						
7. AWFC Behavior FIW	.01	.22*	.12	.31*	.36*	.76*	1					
8. PLAN children	-.13	-.18*	.30*	.06	.17	.08	.08	1				
9. Career traditionality	-.07	-.27*	-.03	-.03	-.04	-.05	-.07	.13	1			
10. CAS leadership	.51*	.20*	-.02	.03	.05	-.04	-.03	-.14	-.06	1		
11. CAS recognition	.46*	.12	-.13	-.10	-.12	-.04	-.09	-.17	-.10	.57*	1	
12. Occupational engagement	.41*	.10	-.01	-.14	-.18	-.24*	-.22*	-.15	.03	.44*	.51*	1
M	4.75	7.85	7.86	7.12	6.57	6.72	6.91	30.48	57.73	14.14	9.82	51.31
SD	.76	2.42	2.04	2.30	2.09	2.17	2.30	6.70	20.61	4.96	3.89	11.11
Actual Range	2.35-6.5	3-15	3-13	3-12	3-13	3-12	3-12	12-48.	12.6-98.1	0-20	1-16	19-70
Possible Range	1-7	3-15	3-15	3-15	3-15	3-15	3-15	12-48	0-100	0-20	0-16	14-70
Cronbach's Alpha	.90	.82	.78	.79	.85	.75	.85	.91	NA	.91	.85	.92

Note * $p < .01$

Table 5. *Summary of hierarchical regression analysis of participants' instrumentality, anticipated work-family conflict, and willingness to compromise career for family as predictors of career choice traditionality (N=174).*

Variable	B	SE B	β	T	df	R	R²	Δ R²	F	ΔF	sr²
Step 1					1, 172	.07	.01	.01	.78	.78	
Instrumentality	-1.84	2.08	-.07	-.88							.00
Step 2					6, 166	.30	.091	.09	2.37*	2.63*	
Instrumentality	-.33	2.11	-.01	-.158							
AWFC Time WIF	-2.89	.75	-.34	-3.85**							.00
AWFC Time FIW	.65	.86	.06	.75							.08
AWFC Strain WIF	1.03	.83	.12	1.24							.00
AWFC Strain FIW	-.39	.98	-.04	-.40							.01
AWFC Behavior WIF	-.81	1.11	-.09	-.73							.00
AWFC Behavior FIW	.42	1.10	.05	.39							.00
Step 3					1, 165	.31	.095	.004	2.15*	.65	
Instrumentality	-.28	2.12	-.01	-.10							.00
AWFC Time WIF	-2.71	.78	-.32	-3.47**							.07
AWFC Time FIW	.40	.92	.04	.43							.00
AWFC Strain WIF	1.02	.83	.11	1.23							.01
AWFC Strain FIW	-.40	.98	-.04	-.41							.00
AWFC Behavior WIF	-.78	1.11	-.08	-.70							.00
AWFC Behavior FIW	.34	1.10	.04	.31							.00
PLAN children	.20	.25	.07	.81							.00

Note. *p<.05, **p<.01, Anticipated Work Family Conflict (AWFC); Work Interference with Family (WIF); Family Interference with Work (FIW); Willingness to compromise career (PLAN)*

Table 6. *Summary of hierarchical regression analysis of participants' instrumentality, anticipated work-family conflict, and willingness to compromise career for family as predictors of leadership-based career aspirations (N=175).*

Variable	B	SE B	β	T	df	R	R²	Δ R²	F	ΔF	sr²
Step 1					1, 173	.56	.31	.31	77.2**	77.2**	
Instrumentality	3.46	.39	.56	8.79**							.31
Step 2					6, 167	.58	.34	.03	12.35**	1.37	
Instrumentality	3.55	.41	.57	8.60--							.29
AWFC Time WIF	.19	.15	.09	1.27							.01
AWFC Time FIW	-.25	.17	-.11	-1.46							.01
AWFC Strain WIF	-.00	.16	-.00	-.02							.00
AWFC Strain FIW	.42	.19	.19	2.23*							.02
AWFC Behavior WIF	.16	.22	.07	.75							.00
AWFC Behavior FIW	-.25	.22	-.12	-1.14							.01
Step 3					1, 166	.59	.34	.00	10.83**	.49	
Instrumentality	3.53	.41	.57	8.52**							.29
AWFC Time WIF	.15	.15	.08	1.00							.00
AWFC Time FIW	-.21	.18	-.09	-1.13							.01
AWFC Strain WIF	-.00	.16	-.00	-.01							.00
AWFC Strain FIW	.42	.19	.19	2.23*							.02
AWFC Behavior WIF	.16	.22	.07	.72							.00
AWFC Behavior FIW	-.23	.22	-.11	-1.06							.00
PLAN children	-.04	.05	-.05	-.70							.00

Note. *p<.05, **p<.01, Anticipated Work Family Conflict (AWFC); Work Interference with Family (WIF); Family Interference with Work (FIW); Willingness to compromise career (PLAN)

Table 7. *Summary of hierarchical regression analysis of participants' instrumentality, anticipated work-family conflict, and willingness to compromise career for family as predictors of recognition-based career aspirations (N=177).*

Variable	B	SE B	β	T	df	R	R²	Δ R²	F	ΔF	sr²
Step 1					1, 175	.46	.21	.21	46.59**	46.59**	
Instrumentality	2.33	.34	.46	6.83**							.21
Step 2					6, 169	.50	.25	.04	8.16**	1.59	
Instrumentality	2.26	.36	.44	6.34**							.18
AWFC Time WIF	.22	.13	.14	1.74							.01
AWFC Time FIW	-.33	.15	-.17	-2.20*							.02
AWFC Strain WIF	-.07	.14	-.04	-.51							.00
AWFC Strain FIW	.11	.16	.06	.69							.00
AWFC Behavior WIF	.25	.19	.14	1.35							.01
AWFC Behavior FIW	-.37	.19	-.22	-1.98*							.02
Step 3					1, 168	.51	.26	.00	7.18**	.50	
Instrumentality	2.24	.36	.44	6.26**							.17
AWFC Time WIF	.19	.13	.12	1.46							.01
AWFC Time FIW	-.29	.16	-.15	-1.83							.01
AWFC Strain WIF	-.07	.14	-.04	-.49							.00
AWFC Strain FIW	.11	.16	.06	.70							.00
AWFC Behavior WIF	.25	.19	.14	1.32							.01
AWFC Behavior FIW	-.36	.19	-.21	-1.91							.02
PLAN children	-.03	.04	-.05	-.71							.00

Note. *$p<.05$, **$p<.01$, Anticipated Work Family Conflict (AWFC); Work Interference with Family (WIF); Family Interference with Work (FIW); Willingness to compromise career (PLAN)*

Table 8. *Summary of hierarchical regression analysis of participants' instrumentality, anticipated work-family conflict, and willingness to compromise career for family as predictors of occupational engagement (N=175).*

Variable	B	SE B	β	T	df	R	R^2	ΔR^2	F	ΔF	sr^2
Step 1					1, 173	.41	.17	.17	34.08**	34.08**	
Instrumentality	5.71	.98	.41	5.84**							.16
Step 2					6, 167	.51	.27	.10	8.64**	3.84**	
Instrumentality	4.96	.99	.35	5.01**							.11
AWFC Time WIF	.79	.35	.18	2.23*							.02
AWFC Time FIW	.08	.40	.01	.19							.00
AWFC Strain WIF	-.40	.39	-.09	-1.03							.00
AWFC Strain FIW	-.05	.45	-.01	-.11							.00
AWFC Behavior WIF	-.42	.52	-.09	-.81							.00
AWFC Behavior FIW	-1.01	.52	-.23	-1.94							.02
Step 3					1, 166	.53	.29	.02	8.26**	4.36*	
Instrumentality	4.80	.98	.34	4.89**							.10
AWFC Time WIF	.59	.36	.13	1.63							.01
AWFC Time FIW	.38	.43	.07	.88							.00
AWFC Strain WIF	-.39	.38	-.08	-1.02							.00
AWFC Strain FIW	-.03	.45	-.00	-.07							.00
AWFC Behavior WIF	-.45	.51	-.09	-.87							.00
AWFC Behavior FIW	-.94	.52	-.20	-1.81							.01
PLAN children	-.25	.12	-.15	-2.09*							.02

Note. *p<.05, **p<.01, Anticipated Work Family Conflict (AWFC); Work Interference with Family (WIF); Family Interference with Work (FIW); Willingness to compromise career (PLAN)*

Table 9. *Summary of hierarchical regression analysis of participants' instrumentality, willingness to compromise career for children and the moderator of instrumentality multiplied by willingness to compromise career for children as predictors of career choice traditionality (N=174).*

Variable	*B*	*SE B*	β	*T*	*df*	R	*R²*	Δ *R²*	*F*	Δ*F*	*sr²*
Step 1					1, 172	.07	.01	.01	.78	.78	
Instrumentality	-1.84	2.08	-.07	-.88							.00
Step 2					1, 170	.14	.02	.01	1.63	2.48	
Instrumentality	-1.46	2.09	-.05	-.70							.00
PLAN children	.37	.23	.12	1.57							.01
Step 3					1, 170	.14	.02	.00	1.18	.29	
Instrumentality	-1.51	2.09	-.06	-.72							.00
PLAN children	.36	.23	.12	1.55							.01
Instrumentality x PLAN children	.81	1.51	.04	.54							.00

Note. **p<.05, **p<.01, Willingness to compromise career (PLAN)*

Table 10. *Summary of hierarchical regression analysis of participants' instrumentality, willingness to compromise career for children and the moderator of instrumentality multiplied by willingness to compromise career for children as predictors of leadership-based career aspirations (N=175).*

Variable	B	$SE\ B$	β	T	df	R	R^2	ΔR^2	F	ΔF	sr^2
Step 1					1, 173	.56	.31	.31	77.2**	77.2	
Instrumentality	3.46	.39	.56	8.79**							.31
Step 2					1, 172	.56	.31	.00	39.1**	1.01	
Instrumentality	3.41	.40	.55	8.58**							.29
PLAN children	-.05	.05	-.06	-1.00							.00
Step 3					1, 171	.56	.31	.00	25.92**	.00	
Instrumentality	3.41	.40	.55	8.53**							.29
PLAN children	-.05	.05	-.06	-.10							.00
Instrumentality x PLAN children	-.00	.29	-.00	-.02							.00

Note. *p<.05, **p<.01, Willingness to compromise career (PLAN)*

Table 11. *Summary of hierarchical regression analysis of participants' instrumentality, willingness to compromise career for children and the moderator of instrumentality multiplied by willingness to compromise career for children as predictors of recognition-based career aspirations (N=177).*

Variable	*B*	*SE B*	β	*T*	*df*	R	*R²*	Δ *R²*	*F*	Δ*F*	*sr²*
Step 1					1, 175	.46	.21	.21	46.59**	46.59**	
Instrumentality	2.33	.34	.46	6.83**							.21
Step 2					1, 174	.47	.22	.01	25.03**	2.95	
Instrumentality	2.26	.34	.44	6.58**							.19
PLAN children	-.07	.04	-.12	-1.72							.01
Step 3					1, 173	.48	.23	.00	16.97**	.88	
Instrumentality	2.28	.34	.45	6.63**							.20
PLAN children	-.07	.04	-.11	-1.69							.01
Instrumentality x PLAN children	-.23	.25	-.06	-.94							.00

Note. *p<.05, **p<.01, Willingness to compromise career (PLAN)

Table 12. *Summary of hierarchical regression analysis of participants' instrumentality, willingness to compromise career for children and the moderator of instrumentality multiplied by willingness to compromise career for children as predictors of occupational engagement (N=176).*

Variable	*B*	*SE B*	β	*T*	*df*	R	*R²*	Δ *R²*	*F*	Δ*F*	*sr²*
Step 1					1, 174	.42	.18	.18	37.45**	37.45**	
Instrumentality	6.03	.99	.42	6.12**							.18
Step 2					1, 173	.45	.20	.02	21.36**	4.52*	
Instrumentality	5.77	.98	.40	5.86**							.16
PLAN children	-.24	.12	-.15	-2.13*							.02
Step 3					1, 172	.45	.20	.00	14.21**	.12	
Instrumentality	5.79	.99	.40	5.86**							.16
PLAN children	-.24	.12	-.15	-2.11*							.02
Instrumentality x PLAN children	-.25	.72	-.02	-.35							.00

Note. **p<.05, **p<.01, Willingness to compromise career (PLAN)*

Appendix A

Demographics

AGE:_____

GENDER:
_____Female
_____Male

STATUS IN SCHOOL:
_____Freshman
_____Sophomore
_____Junior
_____Senior

RELATIONSHIP STATUS:
_____Single (never-married)
_____Single (divorced)
_____Single (widowed)
_____Living with partner
_____Married
_____Married (separated)

RACE/ETHNICITY:
_____African American
_____Asian/Asian American
_____American Indian
_____Biracial/Multiracial
_____Hispanic, Latina
_____White, non-Hispanic
_____Other (Please Specify)

SEXUAL IDENTITY:
_____Bisexual
_____Gay/Lesbian
_____Queer
_____Straight
_____Transgender

If Single: Do you plan to get married/be in a committed relationship?
_____Yes   _____No

Do you plan on having children?   _____Yes   _____No

Have you chosen a major?   _____Yes   _____No
      If YES, what major have you chosen? _____
      If NO, what majors are you considering?
      1._____
      2._____

What is your overall GPA? _____

What are your educational plans?
_____Undergraduate degree
_____M.S./M.A. degree
_____Ph.D. degree
_____Medical degree
_____Law degree
_____Other (please specify)

Appendix B

Bem Sex Role Inventory – Sample Items (Bem, 1981)

Listed below are a number of personality characteristics. For each characteristic, place a number from 1 to 7 in the box to the right, indicating HOW TRUE OF YOU that particular characteristic is. The scale is as follows:

1	2	3	4	5	6	7
Never or almost never true	Usually not true	Sometimes but infrequently true	Occasionally true	Often true	Usually true	Always or almost always true

Defend my own beliefs	
Affectionate	
Conscientious	
Independent	
Sympathetic	

Appendix C

Anticipated Work-Family Conflict (Westring & Ryan, 2011)

Thinking about your future career and the family that you plan to have in the future, please indicate whether you agree or disagree with the following statements. Your ratings should range from **1** (showing that you *strongly disagree* with the statement) to **5** (showing that you *strongly agree* with the statement).

1	2	3	4	5
Strongly Disagree	**Disagree**	**Neither Agree Nor Disagree**	**Agree**	**Strongly Disagree**

1. 1 2 3 4 5 My work will keep me from my family activities more than I would like.

2. 1 2 3 4 5 The time I devote to my job will keep me from participating equally in household responsibilities and activities.

3. 1 2 3 4 5 I will have to miss family activities due to the amount of time I will have to spend on work responsibilities.

4. 1 2 3 4 5 The time I will spend on family responsibilities will often interfere with my work responsibilities.

5. 1 2 3 4 5 The time I will spend with my family will often cause me not to spend time in activities at work that could be helpful to my career.

6. 1 2 3 4 5 I will have to miss work activities due to the amount of time I will have to spend on family responsibilities.

7. 1 2 3 4 5 I think that when I get home from work I will often be too frazzled to participate in family activities/responsibilities.

8. 1 2 3 4 5 I will often be so emotionally drained when I get home from work that it will prevent me from contributing to my family.

9. 1 2 3 4 5 Due to all the pressures I will have at work, sometimes when I get home I will be too stressed to do the things I enjoy.

10. 1 2 3 4 5 Due to stress at home, I will often be too preoccupied with family matters at work.

11. 1 2 3 4 5 Because I will often be stressed from my family responsibilities, I will have a hard time concentrating on my work.

12. 1 2 3 4 5 Tension and anxiety from my family life will often weaken my ability to do my job.

13. 1 2 3 4 5 The problem-solving behaviors I will use in my job will not be effective in resolving problems at home.

14.   1   2   3   4   5   Behavior that is effective and necessary for me at work will be counterproductive at home.

15.   1   2   3   4   5   The behaviors that I will perform that will make me effective at work will not help me be a better parent and spouse/partner.

16.   1   2   3   4   5   The behaviors that will work for me at home will not be effective at work.

17.   1   2   3   4   5   Behavior that is effective and necessary for me at home will be counterproductive at work.

18.   1   2   3   4   5   The problem-solving behavior that will work for me at home will not be as useful at work.

Appendix D

Planning for Career and Family (O'Brien et al., 2012)

In the space next to the statements below please circle a number from "0" (not at all true of me) to "4" (very true of me). If the statement does not apply, circle "0." Please be completely honest. Your answers are entirely confidential and will be useful only if they accurately describe you.

1	2	3	4
Strongly Disagree	Disagree	Agree	Strongly Agree

1. 1 2 3 4   Any career that I will select must enable me to be home when my children come home from school.

2. 1 2 3 4   I will have a career with flexible hours so that I can be home for the children I plan to have.

3. 1 2 3 4   Having quality time for raising children will be the most important consideration in my career choice.

4. 1 2 3 4   I will select a career that can be put on hold when my children are young.

5. 1 2 3 4   When considering a future career, I will look for a job that will allow me the flexibility of being able to stay at home when my children are sick or out of school.

6. 1 2 3 4   When planning for my career, I will think about how much energy I will have for my children.

7. 1 2 3 4   Future parenting responsibilities will be an important factor in making my career plans.

8. 1 2 3 4   My future career will allow me to have time off in the summer so I can be with my children.

9. 1 2 3 4   I will select a career that allows me to slow down after I have children.

10. 1 2 3 4   I will not plan my career around future parenting responsibilities.

11. 1 2 3 4   I will find a career where I do not have to work full-time after I have children.

12. 1 2 3 4   When choosing a career, I will think about whether the work load will hinder my ability to care for my children.

13. 1 2 3 4   Any relationship that I am in will need to realize that my career plans come first.

14. 1 2 3 4   I will make my career plans independently of what my partner might need.

15. 1 2 3 4   I will give up some of my career goals for my relationship.

16. 1 2 3 4   I will never change my career plans for a relationship.

17. 1 2 3 4   I will take a job that I find less satisfying if it means having more time for my partner.

18. 1 2 3 4   When selecting a career, I will take a lesser paying job if it means I am able to prioritize my relationship.

19. 1 2 3 4   Taking a less demanding job to have more energy for my partner will not be an option.

20. 1 2 3 4   My career choice will be based on my goals, not on my ability to balance work and love.

21. 1 2 3 4   The wishes of my partner will not figure into my career plans.

22. 1 2 3 4   Having a fulfilling career will be very important to me, even at the expense of future responsibilities to my partner.

23. 1 2 3 4   When selecting a career, I will consider the needs of my partner.

24. 1 2 3 4   Having a satisfying relationship is not as important as picking a career I love.

Appendix E

Career Choice Traditionality

1) Have you decided on a career?

     If YES, please indicate the career you have decided on_____.

     If NO, please go on to question number 2.

2) Please indicate the careers you are most seriously considering:

     Top choice:_____.

     Second choice: _____.

     Third choice: _____.

Appendix F

Career Aspiration Scale – Revised (Gregor & O'Brien, 2013)

In the space next to the statements below please circle a number from "0" (not at all true of me) to "4" (very true of me). If the statement does not apply, circle "0." Please be completely honest. Your answers are entirely confidential and will be useful only if they accurately describe you.

0	1	2	3	4
Not at all true of me	Slightly true of me	Moderately true of me	Quite a bit true of me	Very true of me

1. 0 1 2 3 4 I hope to move up to a leadership position in my organization or business.

2. 0 1 2 3 4 I plan to rise to the top leadership position of my organization or business.

3. 0 1 2 3 4 When I am established in my career, I would like to manage other employees.

4. 0 1 2 3 4 I want to have responsibility for the future direction of my organization or business.

5. 0 1 2 3 4 I plan to obtain many promotions in my organization or business.

6. 0 1 2 3 4 Even if not required, I would take continuing education courses to become more knowledgeable.

7. 0 1 2 3 4 I will pursue additional training in my occupational area of interest.

8. 0 1 2 3 4 I would pursue an advanced education program to gain specialized knowledge in my field.

9. 0 1 2 3 4 I know I will work to remain current regarding knowledge in my field.

10. 0 1 2 3 4 I will always be knowledgeable about recent advances in my field.

11. 0 1 2 3 4 Being one of the best in my field is not important to me.

12. 0 1 2 3 4 I want to be among the very best in my field.

13. 0 1 2 3 4 I want to be a nationally known leader in my field.

14. 0 1 2 3 4 I know that I will be recognized for my accomplishments in my field.

15. 0 1 2 3 4 I want my work to have a lasting impact on my field.

16. 0 1 2 3 4 Once I finish the basic level of education needed for a particular job, I see no need to continue in school.

17. 0 1 2 3 4 I will be content to stay at the entry level of my career.

18. 0 1 2 3 4 Achieving in my career is not at all important to me.

19. 0 1 2 3 4 If I have a choice, I will not spend my time or money on continuing education.

20. 0 1 2 3 4 Becoming a leader in my job is not at all important to me.

Appendix G

Occupational Engagement Scale – Student (Cox, 2008)

How well does each statement describe you?
Please *CIRCLE* the answer that best describes you.

1	2	3	4	5
Not at all **Like Me**		**Somewhat** **Like Me**		**Very much** **Like Me**

1.   1 2 3 4 5   I talk about my career choices with family or friends.

2.   1 2 3 4 5   I am actively involved in groups or organizations.

3.   1 2 3 4 5   I have contact with people working in fields I find interesting.

4.   1 2 3 4 5   I gain hands on experience that I might use in the future.

5.   1 2 3 4 5   I volunteer in an area that I find interesting.

6.   1 2 3 4 5   I attend lectures, exhibits, and community events.

7.   1 2 3 4 5   I take part in a variety of activities to see where my interests lie.

8.   1 2 3 4 5   I ask people in social settings about what they do for a living or what they are

interested in doing.

9.   1 2 3 4 5   I visit places I'm interested in working at so I can learn more about them.

10. 1 2 3 4 5   I attend presentations or talks related to a career I might find interesting.

11. 1 2 3 4 5   I pursue opportunities in life because I just know they will come in handy.

12. 1 2 3 4 5   I work with teachers or staff on activities other than coursework

(committees, orientation, student life activities, etc.).

13. 1 2 3 4 5   I do lots of things that are interesting to me.

14. 1 2 3 4 5   I have meaningful conversations with students of a different

ethnicity.

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118

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