**MEN'S ROLES AND WOMEN'S GOALS:
CAUSES, CONSEQUENCES, AND COMPLEMENTARITY**

by

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Abstract

This dissertation explores the possibility that persistent gender inequality in the domestic sphere, wherein women do disproportionately more childcare and housework than men, might explain some of the variance in women's adherence to traditional gender roles. I present three separate papers addressing the broad research topic of gender role complementarity (i.e., how rigid masculinity stereotypes governing men's behavior impact women's possible selves). First, I summarize a study of how the self-views of over 320 children are predicted by the beliefs and behaviors of their parents. The most relevant finding to this dissertation is that grade-school-aged girls with traditionally career-focused fathers reported female-stereotypic career aspirations, but girls whose fathers helped out more with domestic tasks nominated more gender-neutral career aspirations. Second, a set of four experiments tested a *complementarity hypothesis*, whereby women's expectations about men's willingness to adopt caregiving roles in their future families might contribute to whether women can imagine themselves as breadwinners and enable them to pursue their career ambitions. Results showed that women who were primed with counter-stereotypical male exemplars or information that men are increasingly assuming caregiving roles (as opposed to being more career-focused) were more likely to envision themselves as the primary economic provider of their future family. Furthermore, this gender role complementarity was particularly strong among women with more ambitious career goals. These patterns suggest that women's stereotypes about men's roles in the *future* could constrain the decisions they are making in the *present*. Finally, in the last set of studies, I find evidence that women are less attracted to agentic, career-oriented potential romantic partners than more communal, family-oriented or balanced potential partners, as predicted by their

desire to become a breadwinner. Taken together, these studies highlight broader considerations for gender equality, beyond focusing on the workplace in isolation. Future directions for research on the perceptions and implications of gender role change are also discussed.

Preface

I am the primary author of the work presented in this PhD Dissertation. In collaboration with Dr. Toni Schmader, I identified the research question and designed the experiments presented in this empirical work. I coordinated the data collection and performed all data analyses. I wrote each chapter and prepared all tables and figures presented in the chapters. Additional contributions for each chapter are described below.

Chapter 1: Introduction

I am the primary author of this chapter, with intellectual contributions from T. Schmader.

Chapter 2: Complementarity between Fathers' Domestic Contributions and Daughters'

Possible Selves

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Chapter 3: Complementarity Between Men's Perceived Caregiving and Women's

Possible Selves

A version of this chapter is being prepared for publication. Croft, A., Schmader, T., Block, K. Life in the balance: Are women's possible selves constrained by men's domestic involvement? I designed the experiments, supervised data collection, conducted analyses,

and prepared the manuscript, with intellectual contributions and edits from T. Schmader and K. Block.

Chapter 4: The Attractiveness of Communal Men

I designed the studies, supervised data collection, conducted data analyses, and wrote the chapter. T. Schmader, M. Schaller, and A. Beall helped design the studies and provided intellectual contributions.

Chapter 5: Conclusions About Men's Roles and Women's Goals

I am the primary author of this chapter, with intellectual contributions from T. Schmader.

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1 Chapter: Introduction

Imagine you are walking down a busy street: What is one of the first things you notice about the strangers passing by? If you are like most people, you might automatically categorize others based on their gender, age, or ethnic background. These quick categorizations based on simple demographic cues can happen without much effort and often without any conscious awareness at all. Because labeling someone as male or female is one of the earliest social inferences we make when meeting and interacting with others, it is crucial to understand the beliefs and stereotypes that accompany those automatic gender categorizations. The broad goal of this dissertation is to explore the social roles people choose (or expect) to occupy, and how their choices are constrained by traditional gender stereotypes. Specifically, this dissertation contains three separate papers aimed at investigating complementary gender roles stereotypes between men and women, focusing on how men's adherence to traditional roles might affect women. In introducing this dissertation, I will present key social psychological theories underlying gender roles and gender stereotypes, including how they develop, with a particular emphasis on how gender roles and stereotypes have been changing in recent history.

1.1 Traditional gender roles and stereotypes

The characteristics and behaviors that are typically associated with being masculine or feminine are largely informed by cultural stereotypes. One of the seminal theories that takes on the scholarly, psychological examination of traditional gender roles, and their maintenance over time, is social role theory (Eagly & Steffen, 1984). Prior to its development, the predominant theorization surrounding traditional gender roles was rooted in a functionalist perspective from sociological work (Parsons & Bales, 1955). From this perspective, Parsons and Bales (1955) argued that men and women were biologically driven to occupy breadwinning and caregiving

roles, respectively, and further suggested that masculinity and femininity were therefore inherently linked to those roles. At the time when this functionalist perspective was popularized, men and women more exclusively occupied their respective breadwinner and caregiver roles in the Western world, and therefore, this perspective does not allow or account for any possibility of flexibility in those roles.

Building on such thinking, then, social role theory suggests that gender stereotypes are perpetuated by seeing men and women in differential roles performing a division of labor that is directly influenced by the historical context, current climate, and perceptions of sex differences in natural aptitude (Eagly & Wood, 1999, 2011, 2013; Wood & Eagly, 2000, 2002). Simply put, the theory states that because people witness more men than women occupying given roles (e.g., breadwinners, engineers, etc.), the masculine characteristics associated with traditionally-male roles have become stereotypic of men. Similarly, because people see women occupying caregiving and other traditionally-female roles, the feminine characteristics associated with those roles become stereotypic of women (Wood & Eagly, 2007). For example, in one of the original studies demonstrating this phenomenon, the researchers found that both women and men who were described as being homemakers were perceived to be low in agency but high in communion, which suggests that these stereotypes are tied more closely to the roles themselves rather than to the gender of the person in the role (Eagly & Steffen, 1984, Study 3).

There are two core dimensions of human behavior that have becoming associated with gender. Early on in gender research, these stereotypical traits were coined communion and agency and were said to capture the two fundamental “ways of being” that humans are oriented towards, with men being more agentic and women being more communal (Bakan, 1966; Carlson, 1971). The characteristics typically ascribed to men are instrumentality, dominance, and

assertiveness, whereas women are stereotyped as being expressive, warm and concerned for others (Deaux & Lewis, 1984; Deaux & Major, 1987). Scholars originally theorized that these fundamental characteristics lie on a single continuum, but later scholarship began to construe masculinity and femininity as distinct constructs that can move independently of one another (i.e., one can conceivably be high on masculinity and high on femininity, or vice versa; Bem, 1974; Spence, Helmreich, & Stapp, 1975). Related work has also examined similar stereotypes about women and men, albeit packaged slightly differently – as is the case with warmth versus competence (Fiske, Cuddy, Glick, & Xu, 2002). In general, these various theoretical perspectives are all tapping into the same tendency for people to expect men and women to be fundamentally different.

Interestingly, recent studies have shown that women are becoming more agentic over time, more so than men are becoming communal (Twenge, Campbell, & Gentile, 2011; Twenge, 1997). Additionally, social role theory implies a cyclical (and potentially asymmetrical) process such that as the gender representation in a given role begins to change, so too do the stereotypes about the gender category (Diekmann & Eagly, 2000; Eagly & Diekmann, 2003). This is because of subsequent changes in the skillsets that are perceived as necessary in order to occupy said role. Thus, because women's roles have been changing faster than men's during the past 60 years, empirical evidence shows that stereotypes about women are rated as being more malleable than stereotypes about men (Diekmann & Eagly, 2000). This social psychological explanation for how gender role stereotypes can change over time is one key factor underlying my own research. But first I will address a bit of background on how an initial knowledge of gender stereotypes is learned and how that knowledge shapes people's self-perceptions.

Gender stereotypes can convey information about what behaviors are appropriate for men and women to engage in – providing a sort of social acceptability gauge. These behavioral norms and the gender stereotypes that shape them are learned very early in life (Martin, Ruble, & Szkrybalo, 2002). Toddlers as young as two years old are able to recognize behaviors as being gender stereotype-consistent or –inconsistent (Hill & Flom, 2007). Gender stereotypic toy preferences begin to appear as early as nine months of age (Campbell, Shirley, Heywood, & Crook, 2000; Lutchmaya & Baron-Cohen, 2002), and the ability of infants to match toys with the stereotypic gender group has been found by 18 months of age (Serbin, Poulin-Dubois, Colburne, Sen, & Eichstedt, 2001), showing that infants often learn gendered socialization practices before reaching their second birthday (Jadva, Hines, & Golombok, 2010).

Furthermore, socially-based norms about appropriate behavior for boys and girls are internalized during early childhood and become stronger with age (Cherney & London, 2006). Around the time they begin grade school, children rigorously enforce adherence to gendered behavioral norms, particularly when it comes to boys and men (a discrepancy which continues into adulthood; Feinman, 1981). For example, several studies have demonstrated that boys are significantly more likely to be teased or admonished for transgressing gender norms than are girls (Blakemore, 2003; Levy, Taylor, & Gelman, 1995). Similarly, a recent study found that children between 8-9 years old made up sentences implying that girls can be doctors, but that boys can't be nurses (Wilbourn & Kee, 2010a). I will return to this stark distinction in the degree to which girls' gender roles are seemingly more fluid than are boys' in Chapter 2 of this dissertation, when I examine parents' gender stereotypes and behaviors in predicting their children's occupational aspirations.

In addition to being learned at an early age, gender stereotypic beliefs are also easily and automatically activated, often in spite of conscious control or effortful deliberation (Banaji & Hardin, 1995). Notably, measures of automatic or *implicit stereotypes* may or may not correspond to people's self-reported, explicit endorsement of gender stereotypes (Nosek & Smyth, 2007). Because of the lingering pervasiveness of traditional beliefs about the division of labor, even people who hold gender egalitarian attitudes can still have stronger automatic associations between concepts that are traditional and gender-stereotypic (Nosek, Banaji, & Greenwald, 2002; Park, Smith, & Correll, 2010; Rudman & Goodwin, 2004; Rudman, Greenwald, & McGhee, 2001). These strongly ingrained beliefs about oneself as a member of one's gender category also have a considerable influence on how we think about ourselves in the abstract (i.e., our self-schemas).

People's self-schemas are cognitive representations of the self and are informed by a person's past experiences, current context, and future expectations. This is true to the degree that people even exhibit gender-consistent stereotypes about themselves at an implicit or automatic level (Devos, Blanco, Rico, & Dunn, 2008; Devos, Diaz, Viera, & Dunn, 2007; Rudman & Phelan, 2010). Moreover, through processes of identity balance, these implicit associations with one's gender group then shape implicit associations about oneself (Baron, Schmader, Cvencek, & Meltzoff, 2014; Greenwald, Rudman, Farnham, Nosek, & Mellott, 2002). For example, not only do adults exhibit gender-consistent implicit stereotypes about themselves (Devos et al., 2008; Devos, et al., 2007; Rudman & Phelan, 2010), but these gender-stereotypic associations with the self can also show up as early as age eight (see Baron et al., 2014, for a review). Having laid out some evidence of how gender stereotypes can create a gendered self-schema, I will now

shift to a discussion of how these pervasive stereotypes can also shape who people expect themselves to become in the future.

The self-schemas people have for a prospective future version of whom they might eventually become are called *possible selves* (Markus & Nurius, 1986; Smith & Oyserman, 2015). Unlike current self-schemas, possible selves are merely based on anticipated social roles and expectations about future events and environments. That is to say, people's possible selves are often an indirect representation of their stereotypes of a given role or domain. Such stereotypes or other heuristics are more likely to influence people's possible selves the more they are imagining themselves in a future that is distant and therefore necessarily more abstract (Brown & Diekmann, 2010; Trope & Liberman, 2003). I am proposing in this dissertation that the reach of women's and girls' possible selves is constrained not only by their stereotypes of women's gender roles (e.g., Fulcher & Coyle, 2011; Stout, Dasgupta, Hunsinger, & McManus, 2011), but also by their stereotypes of men's gender roles as complementary to their own. In the following sections, I will review evidence that women's roles have changed more over the past century than have men's, and that the slow change of men's roles might place constraints on gender equality.

Up to this point, I have discussed theory and research on how and why men and women tend to end up in gendered roles, but my research is primarily about why women might still feel constrained to choose traditionally-female roles, even though significant change has happened. I first considered broader theories about the gender roles people adopt in order to answer this question. As discussed above, some such theories stem from being socialized to endorse and embrace certain forms of identity. In the next section, I will focus my discussion further to highlight more specialized work showing that women choose roles that are a good fit with their

own values and self-views, and they avoid (or are discouraged if not blocked from adopting) roles that are typically roles held by men. Importantly, this prior work on how women's roles are constrained informs, but is different from, my own research because my work addresses the unique interdependence between men and women and how their roles constrain one another.

1.2 Women's move into agentic roles

Despite having made progress toward gender equality during the past half century, there continue to be gender differences favoring men in career success, advancement, and earning potential (Ceci, Williams, & Barnett, 2009; Ceci & Williams, 2010, 2011; Eccles, 2007). In understanding women's achievement in domains that were once dominated by men, I first briefly review previous social psychological theory and research addressing the ways in which women's stereotypes about their own gender group, as well as the domains in question, and the (lack of) fit between the two, might contribute to persistent workplace inequalities.

According to goal-congruity theory, men and women endorse gender-related goals, which lead them to pursue different occupations that best afford those respective goals (Brown & Diekmann, 2010; Diekmann, Brown, Johnston, & Clark, 2010; Evans & Diekmann, 2009). Specifically, women tend to endorse relatively more communal, other-oriented goals and men tend to endorse relatively more agentic, status-oriented goals. Careers and roles that are highly male-stereotypic (e.g., management, STEM, etc.) are seen as impeding communal goals (Diekmann, Clark, Johnston, Brown, & Steinberg, 2011). People's values and goals aid them in making decisions about what roles to enter, and therefore women are more motivated to enter

domains that satisfy their communal goals, and less likely to enter domains that are seen as being conflict with those goals (Diekmann et al., 2010).

A “sense of fit” or feeling that one belongs in a certain role has also been shown to contribute to determining who enters and stays in a given role (Cheryan, Plaut, Davies, & Steele, 2009; Cheryan, 2011). Information about what types of people belong in certain roles is communicated by stereotypes and observations of current participants in those roles. Past research has shown that women do not feel a sense of belonging when they occupy traditionally male roles (Cheryan & Plaut, 2010). Specifically, women’s lack of interest in computer science as a college major is mediated by their perceived dissimilarity to others in the field (Cheryan & Plaut, 2010). Since computer science is a predominately-male domain, the others in the field are outgroup members from a woman’s perspective, and women are in the minority.

Besides feeling dissimilar to others in the field, women might also feel very isolated by adopting traditionally-male roles. One explanation for this isolation has to do with a lack of same-gender role models or exemplars. Social psychological research has shown that successful ingroup role models can be very effective for encouraging women to enter non-traditional domains that were previously dominated by men (Shaki Asgari, Dasgupta, & Gilbert Cote, 2010b; Stout et al., 2011). For example, exposing women to same-sex experts (advanced peers, professors, professionals) in STEM fields enhances women’s self-concept in, attitude towards, and motivation to pursue STEM careers (Stout et al., 2011). Moreover, this positive effect of learning about successful role models is especially strong to the degree that women perceive the exemplars to be similar to themselves (Asgari, Dasgupta, & Stout, 2012).

In addition to these fairly subtle ways in which gender inequality persists in the workplace, there is still more evidence of blatant discrimination and backlash against women

who do overcome the odds and enter into non-traditional roles. Research shows that women who violate gender roles by succeeding at a counter-stereotypical task often face backlash in the form of sabotage, stigmatization and unfavorable ratings of competence and likability (Rudman, Mescher, & Moss-Racusin, 2012; Rudman & Fairchild, 2004; Rudman & Glick, 1999; Rudman & Phelan, 2008). And when women are successful in male-dominated occupations, people rate female managers as particularly cold and unlikeable (Rudman & Glick, 1999), and are also more likely to perceive them as less competent than male managers after a single mistake (Brescoll, Dawson, & Uhlmann, 2010). Furthermore, women's behavior in the workplace is more likely to be attributed to dispositional characteristics ("she's an emotional person"), whereas men's is more likely to be attributed to contextual circumstances, which leads to women being conferred lower status than men when they display anger at work (Brescoll & Uhlmann, 2008). In general, both men and women express overly negative judgments of women in stereotypically-male roles (Cross & Bagilhole, 2002; Heilman & Wallen, 2010; Rudman & Fairchild, 2004).

As reviewed above, the previous approaches all examine women's role constraints as a result of gender role stereotypes associated with women's own gender category (e.g., female identity) or the traditionally-male domain in question (e.g., computer science). My research explores a novel explanation for women's continued under-representation in some traditionally-male arenas. In my work, I am interested in the impact of stereotypes associated with men and the masculine gender identity in constraining women's own role choices. Given the interpersonal interdependence between men and women when it comes to the necessity of heterosexual romantic relationships (Glick & Fiske, 1996, 2001), I theorize that women's future roles or possible selves may be influenced by their expectations of a long-term partner's potential characteristics. Specifically, I propose that the persistent and rigid gender stereotypes governing

men's behavior will constrain women's potential to adopt non-traditional roles in the future, and directly impact the ways in which their self-views respond to division-of-labor dynamics within long-term romantic relationships.

When considering women's (and men's) expectations for the future, it is not only important to consider schemas they have about themselves, but also the schemas about their future romantic relationships. Indeed, Aron and Aron (1986) theorized that the perception of oneself includes the resources, perspectives, and characteristics of one's close relationship partner. Importantly, romantic relationship schemas are defined not merely by expectations of the self and the partner as individuals, but also by expectations about the dynamics of the relationship between the two, which might include a forecasted division-of-labor. Traditional relationships are those in which the man is primary economic provider and the woman is primary caregiver and the man yields considerably higher status and power in the dyad (Glick & Fiske, 2001). Again, the abstract nature of these future forecasts makes them especially susceptible to one's gender stereotypes and perceptions of changing gender norms. Women's stereotypical expectations about their future relationship partners should therefore inform their own possible selves. These expectations, however, might also be shaped by people's more general beliefs that men (and thus future partners) will continue to exhibit fewer communal traits and behaviors compared to women (Diekmann & Eagly, 2000). When girls and women have a schema that men's roles are stable and unchanging (i.e., that men will continue to be uninterested in adopting domestic roles), they might anticipate constraints on their own careers and be less likely to imagine themselves in a complementary non-traditional role. The following section will set the

stage for my hypothesis that girls and women have stereotype-based expectations of a future romantic partner that could constrain their own future roles.

1.3 Men's (slower) move into communal roles

Just as women continue to be underrepresented in male-dominated roles in the workplace, men are underrepresented in domestic caregiving roles at home. Over the past several decades, gender roles within the family dynamic have both changed and stayed the same. In 1970, almost half of all two parent households had a mother who stayed at home with the children (Pew, 2015). In contrast, recent labor statistics confirm that nearly 70% of families in the United States are now comprised of dual-earner parents and in 46%, both parents work full-time (Pew Research Center, November 4, 2015). Although men still generally out-earn their partners, women are also increasingly becoming the primary breadwinner in the family (Pew, 2013). In this sense, women's roles have been expanding dramatically over the last half-century to include work outside the home in addition to their traditional roles and responsibilities within the household. Conversely, the rigid stereotypes governing men's roles are not experiencing the same levels of newfound flexibility.

In contrast to the fairly quick expansion of women into the workplace and other agentic roles, the degree to which men are free to adopt traditionally-feminine traits and roles remains relatively stagnant. Researchers in other disciplines have been exploring this asymmetrical gender revolution for many years (England, 2010; Sayer, England, & Bianchi, 2009), however, it has been a relatively understudied topic in the field of social psychology. In our recent theoretical model of social psychological barriers to men's interest in communal roles (Croft, Schmader, & Block, 2015), we suggest that gender stereotypes constrain men's communal interest both through internal factors and external factors. Internal factors include processes like

early learning of gendered associations, direct socialization of boys and girls into distinct gendered categories, and (the lack of) exposure to role models that violate traditional gender roles. These processes lead to an internalization of values, traits, and goals that are seemingly at odds with engagement and interest in communal behaviors. External factors include financial costs and backlash from others that accompany men's adoption of communal roles, and prevent them from entering into traditionally-female domains. Although many of these same internal and external barriers also constrain women from adopting traditionally masculine roles, we assert that the lower status given to women relative to men makes these barriers asymmetrically larger for men's entry into communal roles.

Within the context of this systematic review we argue that, "By accepting gender inequality in the home, people tacitly endorse disproportionate barriers to women's advancement in paid work" (Croft et al., 2015, p 2). Thus, an important obstacle to gender equality in salary and career advancement for women, is the relatively slower rate of change in gender roles adopted by men. Because men are less likely to take an active role in childcare and household chores, these responsibilities continue to disproportionately fall to women, even in dual earning couples (Bianchi, Milkie, Sayer, & Robinson, 2000; Coltrane, 2000; Mattingly & Bianchi, 2003). Surprisingly, there is some evidence that even though some couples would actually prefer to divide the domestic labor equally, they often end up with a traditionally gendered distribution of household tasks (Doucet, 2001; Wiesmann, Boeije, van Doorne-Huiskes, & den Dulk, 2008). According to sociologists, this is perhaps because participating in housework is seen as a choice for men, rather than an obligation (Kroska, 2004) and women are more likely to spend time multitasking, thereby accomplishing a greater amount of domestic work than men (Offer & Schneider, 2011). This *second shift* (Hochschild, 1989; Hochschild & Machung, 2012) for

working mothers is a widely documented phenomenon that can lead women to “opt out” of their careers temporarily or permanently once they become mothers (Stone, 2007). For instance, we know that once women have children, they are more likely than men to leave the workforce, reduce their work hours and, as a result, suffer a decrease in income and career advancement (Stone, 2007; Williams & Chen, 2013). On the one hand, many of these women might truly prefer to prioritize family over career. For example, undergraduate women automatically identify with being a parent more than do undergraduate men (Park et al., 2010), even though most are not yet parents. However, twice as many working mothers as working fathers report that parenting responsibilities stand in the way of their career advancement, and this strain on women’s careers is felt more strongly when their husbands are more career-focused than they are (Pew, 2015). Such data suggest that many women might feel that their choices are constrained in a complementary fashion by the roles adopted by their male partners.

The gendered distribution of domestic labor is widely recognized and even anticipated among both men and women, without any real taboo surrounding the blatant gender inequality. Research shows that people perceive mothers as more likely to take on childcare tasks than fathers, regardless of number of hours worked outside the home (Park, Smith & Correll, 2008). Moreover, when thinking about their own futures, young people also tend to concede that they too will fall into similarly gendered patterns after settling down (Brown & Diekmann, 2010; Maines & Hardesty, 1987), no matter how egalitarian their own attitudes are (Ferber & Young, 1997). For example, young heterosexual women report expecting a traditional, gender-based division of labor in their future relationship (Askari, Liss, Erchull, Staebell, & Axelson, 2010; Erchull, Liss, Axelson, Staebell, & Askari, 2010; Park, Smith, & Correll, 2008), and such stereotypical expectations create conflict between women’s work and family roles (Hodges &

Park, 2013). Chinese and American women alike anticipate that they will be the ones to quit their jobs and be caregivers in the future, rather than their male partners (Zhou, 2006). In one qualitative study, women with very strong preferences for egalitarianism in romantic partnerships indicated that those expectations were, at the same time, unrealistic and that they would likely end up having to settle for a partner who will only help out with the domestic tasks to a limited extent (Orrange, 2002). Such findings suggest that women might be, at least on some level, aware of how they are constrained by a male gender role that is rigidly masculine and complementary to theirs.

Despite these striking statistics illustrating a profuse and anticipated traditional distribution of labor at home, there is some evidence that change is in the air. Both popular press writers and researchers in the social sciences have recently begun to pay much needed attention to this topic. For example, even though women without children self-report a stronger parental tenderness motivation than men without children, there are no such gender differences among parents (Buckels et al., 2015). There are blogs, online forums, magazine articles, poll summaries and entire academic journals devoted to discussing issues of contemporary fatherhood (e.g., *Fathering: A Journal of Theory, Research, and Practice about Men as Fathers*, The Father Involvement Research Alliance, The Center for WorkLife Law, athomedad.org, The New York Times, etc.). It seems that the ideas of fatherhood and masculinity are shifting from being purely about men providing for a family to encompassing more involvement in general, including playing an active role in their children's upbringing (Cabrera & Tamis-LeMonda, 2000; Harrington, Deussen, & Jamie, 2010; Johansson, 2011; Yarwood, 2011; but see also Wall & Arnold, 2007). Nowadays, a majority of men are reporting an increased interest in helping out with household tasks and caring for their children. For instance, a recent study by the Boston

College Center for Work & Family found that 53% of the fathers surveyed (N = 963) would consider not working outside the home if it was economically feasible (B. Harrington, Deusen, & Humberd, 2011). Moreover, a recent study found that fathers and mothers are expected to have increasingly similar traits and behaviors over a 100 year period (between 1950 and 2050), with changing patterns especially pronounced for fathers, suggesting a potentially dynamic nature in the perceptions we have about adhering to traditional roles (Banchefsky & Park, 2016).

This change in men's attitudes towards caregiving is also reflected in their actual behavior, albeit to a much lesser extent (Milkie, Bianchi, Mattingly, & Robinson, 2002). Although the percentage of fathers who are choosing to stay at home to take care of their children or other family members is still quite low (3.4%), it has been increasing over the last two decades (Pew, 2014). In Canada, men accounted for 12% of all stay-at-home-parents with children under the age of 16 in 2011 – a substantial increase from just 4% in 1986 (Statistics Canada, 2011). Especially among couples who both work full-time, women and men are now increasingly likely to report sharing many childcare and domestic tasks equally (Pew, 2015). On a larger scale, more countries (e.g., Norway and Canada) are beginning to support fathers' caregiving involvement by endorsing policies of paid paternity leave (Haas & O'Brien, 2010). Some would argue, however, that although men are becoming increasingly involved in childcare, their contributions include more of the fun activities (e.g., playing, reading), which can occur on a flexible time-table compared to the childcare chores that mothers are still more likely to do (e.g., feeding, bathing; Craig, 2006; Gottzen & Kremer-Sadlik, 2012). Furthermore, a large discrepancy remains between the *ideal* and *actual* contribution of fathers in child rearing responsibilities from the perspectives of men and women both, with women saying fathers' actual contributions are less than the ideal and men saying fathers' actual contributions are more

than the ideal (Milkie et al., 2002). This discrepancy serves to highlight my argument that traditional gender stereotypes about men's roles constrain men's communal involvement in this particular domestic role and also underscores how women might, subsequently, feel constrained from adopting more agentic roles themselves. Directly relevant to this dissertation then, is the question of how these modest changes in men's willingness to take on a shared or even primary caregiving role might be incorporated into young girls and women's views of their own future roles.

Given that women recognize the existence of the *second shift* and anticipate having to do the majority of chores at home (e.g., Brown & Dickman, 2010; Maines & Hardesty, 1987; Park et al., 2008), I suggest that they might adjust their future career goals and aspirations accordingly. Other theorizing and qualitative research also proposes that the level of women's responsibility and involvement in their careers is still being dictated by men (Silverstein, 1996), thereby proposing that women are not able to pursue their careers to their full potential (Primeau, 2000a, 2000b). With greater numbers of men contributing to the unpaid work at home and reducing the *second shift*, women might feel more free to pursue time-intensive career roles and feel less pressure to choose between family and career. In Chapter 3, I will describe in further detail a series of empirical studies I ran to test this broad research question.

As mentioned above, the proportion of families with female breadwinners is on the rise, and those women's experiences are vastly improved by the help of a supportive partner (Meisenbach, 2009). Moreover, marriage quality and family dynamics are directly impacted by men's involvement in traditionally feminine chores, and the relationships of couples with more traditional roles fare worse than those whose roles are more balanced (Ickes, 1993). For example, women who feel that their husbands do not help out enough around the house are less satisfied

(Frisco & Williams, 2003; Stevens, Kiger, & Riley, 2001; Wilkie, Ferree, & Ratcliff, 1998), more depressed (Bird, 1999), and more likely to divorce than women who feel they are equally supported in the domestic tasks (Frisco & Williams, 2003). Moving beyond women's possible selves, how might stereotypic expectancies influence the possible mate preferences of modern women? The fourth chapter of my dissertation will focus on the extent to which young women might actually prefer romantic partners who will contribute more to the domestic responsibilities, as opposed to preferring a traditional, career-oriented potential partner.

1.4 Gender roles and mate preferences

Women's tacit understanding of division-of-labor dynamics might not only have implications for the causal influences on their possible selves; it may also have additional implications for their preferences and visions of an ideal mate. In light of the findings I presented in Chapters 2 and 3 on how women's own goals might be constrained by men's rigid roles, I was interested in knowing how women's current motivations to pursue non-traditional roles relate to their long-term mate preferences. Could it be the case that, in this era of change towards greater gender equality, women are beginning to find nontraditional, communal men more desirable than traditional, agentic men? And are women with greater career ambition or those who envision themselves becoming primary breadwinners in the future more attracted to communal men than agentic men? In other words, this set of studies examines whether young women will be looking for someone to balance their own motives and desires within a future romantic relationship dynamic. But first, I will describe what is already known about how people select their romantic partners, and then make the case for how my work seeks to expand this knowledge.

Interpersonal attraction has been studied at length in social psychology, and the field has a fairly stable understanding of the specific variables that lead people who are strangers or merely

acquaintances, to move beyond simple familiarity to more intimate relationships, romantic or otherwise. The most widely documented factor that predicts what will bring people together and cultivate relationships is their physical proximity to one another (Byrne, 1961; Festinger, 1950). The closer people are, the more likely they are to come into contact with and get to know each other beyond a superficial level. Another key factor in interpersonal attraction is similarity – this extends to similarity in personality attributes, beliefs, attitudes, and personal values (Byrne, Clore, Gerald L., & Worchel, 1966; Griffitt & Veitch, 1974; Newcomb, 1956), especially when it comes to romantic relationships (Kalmijn, 1994, 1998; Mare, 1991). But, beyond these attraction factors, there are additional considerations for people choosing with whom to pair up romantically.

Research and theory on mate preferences and selection processes argues in favor of both evolutionary and sociocultural explanations. Although these evolutionary and sociocultural explanations are often pitted against one another, I suspect that these different theoretical approaches explain different parts of the variability in mate selection. For example, evolutionary perspectives posit basic biological processes that explain some of the variation in what people find attractive in the opposite sex for either long-term or short-term mating (Eastwick, Luchies, Finkel, & Hunt, 2014). But, these evolved preferences need not preclude other sociocultural factors from explaining another part of the variation in what people seek out in a romantic partner. I'll briefly review both, with a specific focus on long-term mate selection.

Evolutionary theories of mate selection are rooted in the perpetuation of the species. Theories of this type place their main focus on successful reproduction, with gender differences in mate preference stemming from biological sex (Buss & Kenrick, 1998; Buss & Schmitt, 1993; Gangestad & Simpson, 2000; Trivers, 1972). According to evolutionary theories, due to the traits

necessary for successful reproduction in our ancestral past, men should prefer younger, physically attractive women with caregiving skills to birth and rear healthy offspring. Conversely women should prefer long-term mates who are physically larger men with high status and access to resources (actual and symbolic), by this evolutionary account. The underlying reasoning for these sex-based preferences stems from the relative levels of parental investment contributed by men and women (Kenrick, Sadalla, Groth, & Trost, 1990; Trivers, 1972). In other words, because women must invest the greatest amount of time into reproduction, from gestation to lactation, they should want to ensure that the father of any offspring is well prepared to provide for herself and the child. This provision could be in the form of food, shelter, protection, or other resources needed for survival while she is otherwise occupied with the child rearing.

Alternatively, men need only contribute a single successful ejaculation in order to propagate their genetic line (something most men will do countless times during the course of their adult lives) and, from a biological standpoint, a lengthier commitment is not entirely necessary. Therefore, when choosing a long-term mate, men should look for women who are likely to produce healthy offspring and nurture them to adulthood, whereas women should look for men who are physically and financially capable of providing for them.

Certain individual differences and dispositional characteristics predict a stronger tendency for people to engage in such sex-based mating strategies. For example, traditional gender ideologies, such as the tendency to view women exclusively as caregivers and men exclusively as breadwinners, can exacerbate evolutionary, sex-typed mate preferences (Eastwick et al., 2006). Furthermore, espousing ambivalently sexist attitudes (i.e., attitudes that are simultaneously hostile and benevolent; Glick et al., 1996) toward both men and women is associated with stronger traditional romantic preferences of men seeking physically attractive,

younger (fertile) females and women seeking wealthier, high status males (Sibley & Overall, 2011; Thomae & Houston, 2016) and, in general, those higher in benevolent sexism tend to have stronger preferences for mates who possess some female-stereotypic characteristics (Johannesen-Schmidt & Eagly, 2002). Interestingly, however, when women are looking for a short-term fling, as opposed to a long-term romantic partner, they prefer a mate who is physically attractive just as much as men do (Li & Kenrick, 2006). And still other evidence indicates that, at least for women, these evolutionary-based mating criteria may come online only after potential males meet the threshold on other desirable personality characteristics (Desrochers, 1995). Such findings might indicate that communal men would be viewed by women as weaker, and less masculine, than agentic men, which could lead to their reduced appeal as long-term mates. Other theories, however, have proposed that there is more to the story of what constitutes an attractive romantic partner, including the sociocultural context.

Distinct from evolutionary-based explanations of mate selection strategies, sociocultural perspectives assert that because men's and women's lives are structured by their cultural contexts and daily social interactions, they must take these variables into account when thinking about long-term mates and choosing romantic partners for themselves (Eagly & Wood, 1999; Wood & Eagly, 2002, 2007; Zentner & Eagly, 2015). Thus, although humans in our ancestral past might have started out by using more evolutionarily motivated, sex-based mate selection strategies, current romantic partnership preferences need also take into consideration the contemporary context (Geary, 2000). The more women's earning power increases – as they gain access to financial resources and status – the more they begin to care more about finding a long-term mate who is physically attractive (Eagly & Wood, 1999; Gangestad & Buss, 1993). Also related to this point is research showing that when viable male mate candidates are scarce,

women respond by seeking out higher-earning occupations (Durante, Griskevicius, Simpson, Cantú, & Tybur, 2012). These parallel patterns show how preferences for romantic partners might shift as the social roles people expect to adopt begin to change as well (i.e., as women become like men in terms of their social roles, they become like men in their mate preferences, too).

In line with this theorizing, several studies have shown that people's mate preferences are indeed contingent upon their expected social roles (Barth, Dunlap, & Chappetta, 2016; Eagly, Eastwick, & Johannesen-Schmidt, 2009; Fetterolf & Eagly, 2011; Park, Young, Eastwick, Troisi, & Streamer, in press; Park, Young, Troisi, & Pinkus, 2011). In one study, for example, young adults (both men and women) were instructed to imagine themselves in either breadwinner or homemaker roles before providing ratings of the importance of a potential mate's characteristics (Eagly et al., 2009). The results revealed that people tended to prioritize mate characteristics that were complementary to their own imagined roles – so both men and women who pictured themselves in a homemaker role rated provider qualities in a mate as more important than homemaker qualities, and their preferences shifted toward desiring an older spouse, and vice versa for participants who imagined themselves in a homemaker role (Eagly et al., 2009). Patterns like these, wherein mate preferences can be manipulated through changing social roles, support the argument that communal men might be perceived as highly desirable to the degree that they complement women's imagined possible selves. They also imply that perhaps traditional, sex-based mate selection strategies are less rigid than they seem.

Some studies have hinted at the idea that women might find communal men particularly attractive, although none have directly tested the hypothesis. For instance, one study showed that women negatively evaluate the mate potential of a man ignoring a crying baby, compared to a

man with a happy baby or vacuuming, and more than men who evaluated a woman ignoring a crying baby (Bleske-Rechek, Remiker, Swanson, & Zeug, 2006). Similarly, a field study found that a male confederate obtained more women's phone numbers after playing with a baby, compared to not interacting with the baby (Guéguen, 2014). Building on what prior studies that have found, I theorize that young women's stereotypes about their possible selves and their anticipated division of labor might shape their beliefs about the type of future partner they find desirable. The set of studies I describe in Chapter 4 of this dissertation will add to this rich literature on possible selves and complementary mate selection by corroborating and extending the prior findings. My studies will also attempt to extend past work by combining several of the measures used by various researchers into a single set of studies to provide a more complete assessment of mate preferences predicted by women's career ambitions.

1.5 The present research

My dissertation aims to examine the formerly unexplored possibility that girls' and women's possible selves are linked to and constrained by their stereotypic expectations of men's future likelihood of adopting caregiving roles. To address this broad overarching question, I have included three separate papers that each test individual hypotheses relating to the topic.

Chapter 2 provides initial supporting evidence that girls' possible selves are constrained by men's roles, suggesting that patterns of complementarity may begin at a young age for girls, to the degree that their fathers hold egalitarian beliefs (both implicit and explicit) and contribute more domestically. We collected data from 326 children from ages 7-13 and at least one of their parents. A central aim of measuring parents' beliefs and behaviors was to compare the predictive effects of their domestic behaviors, over and above their implicit and explicit stereotypes, in their children's self-views. Importantly, the findings from Chapter 2 could have important

developmental implications, given that young girls' gender self-concepts develop early in life (McKown & Weinstein, 2003; Wilbourn & Kee, 2010b) and are perhaps responsive to men's values and actions.

To establish a more causal pattern of whether complementary gender roles directly influence young women's possible selves, Chapter 3 describes four experiments that test how manipulating women's perceptions of men's changing gender roles with regard to caregiving might have a complementary effect on their own goals to become a breadwinner of their future family. Findings from these studies suggest that women are significantly more likely to endorse ambitious agentic aspirations (i.e., envisioning themselves as the breadwinner of their future family) when they believe men's roles are changing with time versus remaining traditionally career-oriented.

Going beyond demonstrating the phenomenon of complementary roles and goals, Chapter 4 will next turn to an exploration of the consequences of complementarity for women's mate preferences. Specifically, across four studies, I address the general question of whether communal men are seen by heterosexual women as being more attractive than agentic men, and test the hypothesis that women who envision themselves becoming primary breadwinners in the

future will rate family-oriented men as more desirable potential long-term mates than career-oriented men.

Together, the studies presented in this dissertation provide insight into the complementary gender role stereotypes that may govern young women's expectations for the future, and their motivations in the present.

2 Chapter: Complementarity between fathers' domestic contributions and daughters' possible selves

2.1 Overview of study

Despite progress toward gender equality, women still lag behind men in career advancement, a disparity that becomes most pronounced once women become mothers (Stone, 2007). One factor that blocks women's achievement in the paid labor force is inequality in unpaid domestic labor. Even in heterosexual families where both partners work full-time, wives report doing twice as much housework and childcare as their husbands (e.g., Coltrane, 2000), a phenomenon known as the *second shift* (Hochschild & Machung, 2012). Not only does this discrepancy at home pose a barrier to women's professional advancement, it can also model gender roles to children. The present research tested whether children's professional and family aspirations are predicted by the domestic roles they see their parents enact, as distinct from the explicit beliefs and implicit gender role associations endorsed by their parents.

Role models have been shown to be effective at enabling young women to envision themselves in counterstereotypic roles in leadership (Beaman, Duflo, Pande & Topalova, 2012) and science (Stout, Dasgupta, Hunsinger & McManus, 2011). Moreover, parents provide the earliest models of appropriate behavior for their offspring (Bandura & Bussey, 2004). Indeed, mothers' employment outside of the home predicts their children's attitudes and aspirations (Barak, Feldman, & Noy, 1991; Fulcher & Coyle, 2011; Goldberg, Prause, Lucas-Thompson, & Himself, 2008; Riggio & Desrochers, 2006). But even if mothers are role models for their daughters' perceptions of women at work, children can more directly observe the tasks parents perform in the home. Consequently, efforts to model women's success at work might have limited effectiveness in changing young girls' aspirations if they still observe and come to

assume inequality at home. Although fathers presumably also serve as gender role models, less is known about whether fathers' contribution to or attitudes about domestic labor also predicts their children's aspirations (but see Fulcher, Sutfin & Patterson, 2008).

Much of the research documenting the transmission of gender role beliefs from parents to children has used self-reported measures, revealing a moderate but significant relationship between the beliefs of parents and children (Tenenbaum & Leaper, 2002). However, parents' explicitly reported gender role beliefs are only weakly predictive of children's self-views and aspirations (Tenenbaum & Leaper, 2002, Fulcher et al., 2008; Fulcher, 2011). One reason for these relatively weak effects could be that children receive conflicting information about gender roles. Given evidence that normative pressures and egalitarian values can lead to self-reported beliefs about gender equality that are distinct from implicit associations and actual behavior (Devos, Blanco, Rico & Dunn, 2008; Nosek, 2005; Rudman, Greenwald & McGhee, 2001), parents might report more egalitarian beliefs about domestic labor than their actual behavior or implicit associations support. For example, even couples who are motivated to divide domestic labor equally still report a traditionally-gendered distribution of household tasks (Doucet, 2001; Wiesmann, Boeije, van Doorne-Huiskes & den Dulk, 2008).

Furthermore, research on implicit cognition has revealed that implicit stereotypic associations between social groups can predict biased behavior even among egalitarian-minded individuals (Greenwald, Poehlman, Uhlmann & Banaji, 2009). For example, undergraduates' implicit associations of "dad" with "work" and "mom" with "home" predict how they expect to resolve work-family conflict (Park, Smith & Correll, 2010). Based on such findings, we hypothesized that parents' implicit gender role associations and observable behaviors would

independently predict children's developing aspirations, irrespective of parents' explicit gender beliefs.

To test these hypotheses, we measured parents' explicit beliefs and implicit associations about gender roles, their implicit and explicit self-stereotypes, and their self-reported work and domestic contributions. We tested these as predictors of their children's beliefs about domestic gender roles, self-stereotyping, and self-reported occupational aspirations. Replicating past findings (Tenenbaum & Leaper, 2002), we expected children's gender role beliefs to be predicted by their parents' explicit gender role beliefs. In contrast, we expected that children's future aspirations would be predicted by parents' implicit gender role associations, self-stereotyping, and contribution to domestic labor, independently of parents' work hours and explicit gender role beliefs.

We also tested child gender as a moderator of how mother and father variables predict their children's outcomes. Although we had no clear *a priori* hypothesis based on the current literature, we considered several theoretically derived alternatives. For example, if children model themselves after their same-sex parent, we might observe a higher correspondence of beliefs between mothers and daughters and between fathers and sons (Bandura, Ross & Ross, 1961; Fulcher & Coyle, 2011). Alternatively, if women are the power brokers at home (Williams & Chen, 2013), then women's beliefs and behaviors might best predict both sons' and daughters' beliefs when it comes to domestic stereotypes. A third prediction, however, is that men's higher status in society (e.g., Conway, Pizzamiglio & Mount, 1996; Ridgeway, 1991) gives fathers a

gatekeeping role whereby their beliefs, implicit associations, and behaviors could be uniquely powerful in shaping their daughters' aspirations.

2.2 Method

2.2.1 Participants and procedure

We recruited 326 children ages 7 to 13 (172 boys, 154 girls, $M_{age} = 9.34$, $SD_{age} = 1.72$) and at least one of their parents (204 mothers, $M_{age} = 42.30$, $SD_{age} = 11.17$, 52% Caucasian; 140 fathers, $M_{age} = 43.64$, $SD_{age} = 5.97$, 66% Caucasian) at a local science center. Our initial goal was to collect usable data from 300 to 400 children. Data collection took place December, 2011 through August, 2012 and was stopped when our sample was within that range and a turnover in research staff during the summer would have required substantial training of new staff. Degrees of freedom for some analyses are reduced due to missing data on one or more parent or child measures. In addition, data from 38 additional children were excluded from analyses because neither parent participated in the study. Because we had data from both parents for only 27% of the children ($n = 87$), data were analyzed as two distinct samples of parent-child dyads: a sample of 140 fathers with 170 children (83 daughters, 87 sons) and a sample of 204 mothers with 243 children (115 daughters, 128 sons). Note that distinguishability tests (Kenny, Kashy, & Cook, 2006) confirmed assumptions that predictor variables had significantly distinct patterns of covariation among male and female parents, justifying our approach to divide our parent sample based on gender. Also, each sample included some children who were siblings of each other: 35% in the father sample and 32% in the mother sample. See Table 2.1 for sample

information and Appendix A for additional analyses suggesting that these sibling dependencies in the data do not affect any of the conclusions of the study.

Families were recruited from a free-play area and brought to a sound-proof testing room. After obtaining consent, a research assistant described all tasks to the child participant individually to ensure comprehension. Parents completed computerized measures in an adjacent room or online at home. The measures relevant to the focal hypotheses are summarized below; an expanded method section is provided in Appendix A.

2.2.2 Measures

2.2.2.1 Explicit gender role beliefs

Both parents and children answered five items asking which person in a heterosexual couple would do more of a given household task (dishes, cleaning, childcare, cooking, and laundry). For each item, participants heard (child) or read (parent) about a couple and the specific household task and indicated their response by sliding a scale toward either the person on the left (-100) or the right (+100), where zero represented 50/50 sharing between the couple. Participants' scores were averaged and recoded so that positive numbers indicated a belief that women do more housework than men.

2.2.2.2 Parents' explicit self-stereotypes

On two items, parents rated their relative similarity to two targets, matched to their own gender (see Appendix for screenshots). Both items contrasted a person who works full-time against someone who stays home caring for their children. For each item, participants rated, "Who are you more similar to?" using the same slider scale as above. Scores on the two items

were averaged ($r = .56, p < .001$) and recoded so that higher numbers reflect greater self-stereotyping (i.e., greater work-orientation in males; greater family-orientation in females).

2.2.2.3 Parents' implicit gender role associations and self-stereotypes

Two Implicit Association Tests (IAT; Greenwald, McGhee, & Schwartz, 1998) were used to assess parents' automatic associations of gender categories (*gender-role IAT*) and the self (*self-stereotype IAT*) with work vs. home roles. In the *gender-role IAT*, the target categories (male or female) included pictures of male and female faces (see Stout et al., 2011), and the attribute categories ("home" or "work") included pictures of household (e.g., laundry basket) and office-related items (e.g., office desk).

In the *self-stereotype IAT*, the target categories were represented by the words, "self" (e.g., Me) or "other" (e.g., They), while the attribute categories were "work" (e.g., person giving a business presentation) or "home" images (e.g., person doing laundry). The self-stereotyping stimuli were always gender-matched to participants. Participants completed 20 stereotype-congruent (e.g., female = home) and 20 stereotype-incongruent (e.g., male = home) trials, and data were coded following standard procedures (Greenwald, Nosek, and Banaji, 2003). Higher scores on these measures represent more stereotypic gender role associations (women = home/men = work) and self-stereotypes (self = home among women; self = work among men).

2.2.2.4 Parents' work and domestic labor

Parents reported the number of paid hours they work per week and indicated their relative contribution to housework and childcare tasks on scales from -100 (spouse does it all) to +100 (I do it all). Responses to housework and childcare items were converted to a 0-100% scale and

combined ($r = .58, p < .001$) to form a measure of parents' *domestic contribution* ($M = 57.57\%$, $SD = 20.04\%$, $range = 3.25 - 100\%$).

2.2.2.5 Children's aspirations

We assessed children's aspirations in two ways. First, each child completed the same two-item *explicit self-stereotyping* measure completed by their parents. Importantly, children were asked which of the two adults (matched to the child's gender) they believed they would be more like when they grow up. The questions used the same slider scales ranging from -100 (more like the career-focused adult) to +100 (more like the family-focused adult), $r = .25; p < .001$. In addition, children were asked what they wanted to be when they grow up (*occupational aspirations*). Children's free-response to this question was coded as being stereotypically feminine (a rating of 1), gender-neutral (2), or stereotypically masculine (3) based on ratings by two independent coders (*Krippendorff's* $\alpha = .70$). Both measures were recoded such that higher numbers indicated more stereotypic aspirations given the child's gender. Children's self-stereotypes and future occupations were uncorrelated, $r = -.01$.

2.3 Results

2.3.1 Descriptive statistics

2.3.1.1 Parent data

Parents exhibited a traditional division of domestic labor (see Table 2.2). Fathers reported twice as many hours of paid work as did mothers, $t(341) = 12.07, p < .001$, *Cohen's d* = 1.31, while mothers reported doing significantly more domestic labor than did fathers, $t(342) = -15.36, p < .001$, *Cohen's d* = 1.66; a difference that was significant even when controlling for gender differences in paid work, $F(1, 341) = 97.81, p < .001$, *Cohen's d* = 1.06. Additionally, mothers

exhibited stronger explicit gender role beliefs than did fathers, indicating that they assume that women do more of the domestic workload, $t(334) = -4.70, p < .001$, *Cohen's d* = .51, although implicit gender role associations were not different by gender, $F = 0$. Furthermore, whereas there were no overall gender differences in parents' tendency to explicitly self-stereotype, women implicitly self-stereotyped more strongly than did men, meaning that they automatically associated self with home more strongly than men automatically associated self with work, $t(293) = -7.08, p < .001$, *Cohen's d* = .83. These patterns were largely similar among parents who participated in dyads vs. alone (see Appendix A).

Finally, correlations among parent variables pointed to the convergent and divergent validity of the measures (see Table 2.2). For example, parents' self-reported behaviors correlated positively with their explicit gender-role beliefs (among moms) and self-stereotypes (among moms and dads) in intuitive ways. Additionally, parents' implicit gender-role associations were significantly correlated with their implicit self-stereotypes, and fathers' implicit self-stereotypes correlated with their reported number of work hours.

2.3.1.2 Child data

Descriptive data for children is provided in Table 2.3. Similar to their parents, girls showed more stereotypical gender role beliefs, meaning they were more likely than boys to believe that women do more domestic work, $t(315) = -3.86, p < .001$, *Cohen's d* = .43, and girls self-stereotyped more than boys, reporting greater similarity to a family-focused female than boys did to a work-focused male, $t(315) = -3.04, p = .003$, *Cohen's d* = .34. However, when it came to nominating a future occupation, boys' responses were more male-stereotypic than girls' responses were female-stereotypic, $t(283) = 5.84, p < .001$, *Cohen's d* = .69. Note that among

children, measures of gender role beliefs, self-stereotypes, and future occupations were not correlated with one another, suggesting that each might operate independently from the others.¹

2.3.2 Primary analyses

2.3.2.1 Analytic strategy

Our primary objective was to test whether parents' implicit associations and behaviors predicted children's gender role beliefs and aspirations, above and beyond any predictive effects of parents' explicit gender role beliefs. Thus, in a series of hierarchical regression analyses controlling for child gender, we tested parents' explicit gender role beliefs and self-stereotypes (on Step 1), implicit gender role associations and self-stereotypes (on Step 2), and reported work hours and domestic contribution (on Step 3) as predictors of three outcomes: a) children's explicit gender role beliefs, b) children's explicit self-stereotypes, and c) stereotypicality of children's occupational aspirations. Additional analyses tested whether any individual predictor was moderated by child's gender (i.e., predictor-gender interactions tested on Step 4). Significant interactions were followed by simple slopes analyses. One set of analyses examined mothers'

¹ Additional analyses confirmed mean levels on all variables (for both parents and children) were unaffected by whether data collection occurred with one or both parents present, $ps > .20$. The only exception was that parents who participated alone reported doing more domestic work ($M = 14.38$) than those who participated with their spouse ($M = 5.05$, $F(1, 344) = 7.32$, $p < .01$).

variables as predictors and a second set of analyses examined fathers' variables as predictors. Results are summarized in Tables 2.4 – 2.6, and significant effects are described below.

2.3.2.2 Children's gender role beliefs

In the first set of analyses, children's gender role beliefs were predicted only by child gender and mothers' explicit gender role beliefs. Mothers' implicit gender role beliefs and behaviors were not significant predictors of children's gender role beliefs and no effects were significantly moderated by child gender (see Table 2.4). In contrast, fathers' explicit gender role beliefs did not predict children's explicit gender role beliefs. However, the more fathers explicitly self-stereotyped (i.e., identified as work-oriented), the stronger their children's gender role beliefs. No other predictors for fathers were significant. In sum, when mothers explicitly believed that women are more likely than men to handle domestic tasks, and when fathers explicitly self-stereotyped as work-oriented, boys and girls both reported stereotypic beliefs about the gender distribution of domestic labor. These findings replicate existing evidence of stereotype transmission from parents to children (Tenenbaum & Leaper, 2002), but are the first to focus on domestic gender role beliefs.

2.3.2.3 Children's self-stereotypes

Analyses of children's tendency to self-stereotype yielded evidence that parents' gender role beliefs and behaviors independently predicted how children (especially daughters) envision their futures (see Table 2.5). When asked to choose who they would be more similar to when they grow up, children were more likely to select the gender-typical exemplar (for daughters, the adult female who is the primary caregiver) to the degree that their mothers reported doing more domestic tasks. This effect of mothers' domestic behavior was not moderated by child gender. In

addition, a significant mothers' explicit self-stereotyping by child gender interaction (see Figure 2.1) suggested that mothers' self-stereotyping was marginally positively related to self-stereotyping for girls, $\beta = .25, p = .089$, but not for boys, $\beta = -.06, p = .62$. Examined differently, when mothers explicitly self-stereotype as more family-oriented (1 SD above the mean), girls tended to self-stereotype more than boys did ($\beta = .18, p = .081$). But when mothers were low in self-stereotyping (1 SD below the mean), this gender difference was not significant, ($\beta = -.10, p = .30$). No other main effects or interactions were significant, all $ps > .12$.

In addition to the effects of mothers, analyses of the father sample revealed a significant interaction between fathers' explicit gender role beliefs and child gender (see Figure 2.2). Simple slopes analyses revealed that daughters self-stereotyped as more family-oriented and less work-oriented to the degree that their fathers had more traditional gender role beliefs ($\beta = .30, p = .046$). Similar to the effect with mothers, fathers' explicit gender role beliefs did not predict boys' self-stereotyping ($\beta = -.07, p = .56$). Examined differently, when fathers reported more traditional gender role beliefs (1 SD above the mean), daughters were significantly more likely than sons to self-stereotype ($\beta = .38, p = .01$). In contrast, when fathers reported less traditional gender role beliefs (1 SD below the mean), daughters and sons were equally and relatively unlikely to self-stereotype ($\beta = -.01, p = .94$).

In sum, the more mothers enacted and identified with traditional roles at home, the more their children (especially daughters) envisioned themselves fulfilling gender-stereotypical roles in the future. In addition, fathers with more egalitarian gender role beliefs had daughters and sons who were equally likely to imagine balancing work and family in the future (i.e., child self-stereotyping means near zero). In contrast, fathers with more traditional beliefs about women's

domestic responsibilities had daughters who imagined a future focused more on family than work. This is some of the first evidence suggesting that mothers and fathers' domestic labor beliefs and behaviors predict how stereotypically children envision their own futures.

2.3.2.4 Children's occupational aspirations

Distinct from children's tendency to identify with work or family is their tendency to aspire to a given career. In both the mother-child and the father-child analyses, boys nominated more gender-stereotypic careers than did girls, both $ps < .001$ (see Table 2.6). Although no other effects were significant in the mother-child analysis, within the father-child analysis several effects pointed to the unique role that fathers might play in predicting daughters' occupational aspirations. Specifically, child gender interacted significantly with fathers' explicit gender role beliefs (see Figure 2.3), fathers' implicit gender role associations (see Figure 2.4), and fathers' domestic contribution (see Figure 2.5).

In each case, only daughters' and not sons' aspirations were predicted by their fathers' variables. Daughters reported aspiring toward more stereotypic future occupations to the degree that their fathers: a) explicitly endorsed a traditional division of household tasks, $\beta = .43, p = .003$, b) had stronger implicit associations of women with home and men with work, $\beta = .30, p = .016$, and c) reported contributing less to household tasks and childcare, $\beta = -.41, p = .017$. Supplemental analyses revealed that when all three interaction terms were tested simultaneously, the interactions between child gender and fathers' implicit gender role associations, $\beta_{interaction} = .30, p = .017$, and fathers' domestic contribution, $\beta_{interaction} = -.24, p = .040$, remained significant in predicting more stereotypic occupational aspirations for girls but not for boys. The interaction between child gender and fathers' explicit gender role beliefs decreased in magnitude and

became nonsignificant, $\beta_{interaction} = .12, p = .33$, suggesting that fathers' implicit associations and behaviors directly predicted daughters' preferences, over and above their explicitly held gender role beliefs. These findings present the first evidence that fathers' behaviors and implicit associations about domestic tasks play a unique role in predicting their daughter's emerging aspirations.²

2.4 Discussion

This study examined how children's developing gender role beliefs and occupational aspirations are predicted by their parents' own beliefs, implicit associations, and reported contribution to domestic labor. Several notable findings emerged. Extending previous research (Tenebaum & Leaper, 2002), children's explicit beliefs about gender differences in domestic labor were predicted by the same beliefs held by their mothers, as well as by their fathers' tendency to self-stereotype as more work-oriented. But for daughters, in particular, a tendency to self-stereotype as more family- than work-oriented in the future was uniquely predicted by their parents' beliefs and behaviors. Specifically, girls were more likely to envision themselves as working outside the home when their fathers reported more gender egalitarian beliefs about domestic labor, but also when their mothers reported doing relatively less domestic work and self-stereotyped as more work-oriented.

Over and above explicit gender role beliefs, however, fathers' actual division of labor and implicit gender role associations played a key role in predicting daughters' occupational

² In Appendix A, analyses were repeated using multilevel modeling nesting participants within families (to control for dependencies of sibling data). Notably, the effects remain largely unchanged across all studies, with the exception that the main effect of fathers' explicit self-views on children's explicit gender role beliefs becomes non-significant.

aspirations. Girls nominated less stereotypic occupations to the extent that their fathers, a) reported more egalitarian gender role beliefs about domestic labor, b) had a weaker implicit association of women with home, and c) performed more domestic tasks at home. Importantly, when testing these relationships simultaneously, fathers' implicit associations and reported domestic contribution significantly predicted daughters' occupational aspirations over and above the role played by fathers' explicit beliefs. Such findings suggest that, even when parents explicitly endorse gender equality at home, a traditional division of labor in daily life and implicitly held stereotypical attitudes can send a less egalitarian message to young girls.

It is noteworthy that mothers and fathers both appear to convey stereotype-relevant information to their sons and daughters. We considered several hypotheses regarding the ways in which gender could moderate the transmission of gender roles. Children could model their aspirations on the behavior of their same-sex parent (Bandura, Ross & Ross, 1961; Fulcher & Coyle, 2011) or on the behavior of their primary caregivers, with whom they have most contact. Our data suggest neither of these possibilities can explain the entire process of gender-role transmission. First, although sons' gender role beliefs were predicted by their fathers' tendency to self-stereotype, there was little evidence that boys develop a personal interest in a more family-oriented future from their fathers' domestic beliefs and behaviors. Instead, we observed that fathers' gender role beliefs, self-stereotypes, and domestic behaviors were particularly predictive of their daughters' occupational aspirations, despite fathers being of a different gender and mothers more often serving as the primary caregiver and having control over the domestic sphere (Williams & Chen, 2013). There are several possible explanations for these findings between fathers and their daughters. Fathers could be modeling future potential mates, signaling to their daughters that they can expect men to help at home, thereby allowing women more time

for work. Alternatively, those fathers who contribute more at home might have more opportunities to suggest masculine pursuits that their daughters to then adopt. This enables them to be gatekeepers to their daughters' interest in counter-stereotypic roles and activities.

One open question is why boys' self-identification with gendered roles and career aspirations were not similarly predicted by parents' beliefs or behaviors. More specifically, when fathers enact and espouse more egalitarian gender roles at home, why don't their sons internalize these roles? One possibility is that, by being more attuned to social information (Blakemore, Berenbaum, & Liben, 2009), girls are simply more likely to internalize any social norm cues. Alternatively, boys' gender roles might be less malleable than girls'. Because stereotypes governing men's behavior are more rigid than those for women (Eagly, Wood & Diekmann, 2000), boys' occupational options might simply be more constrained. Efforts to encourage girls to enter into traditionally male-dominated careers have not been matched by similar efforts to encourage boys to enter female-dominated careers. As a result, boys' occupational aspirations in particular might be less flexible. In our data, for example, the stereotypicality ratings for boys' occupations were nearly at ceiling. Future research could examine this possibility by investigating whether parents may exert an influence on boys much earlier in development than in the present sample.

We acknowledge that these data are correlational, and although our analyses have assumed a causal model whereby parents shape their children's gender cognitions, it is possible that parents adapt some of their own beliefs to the preferences their children exhibit. Another plausible alternative is the existence of third variables, such as one's surrounding community or social class, which could underlie the observed associations between parents and children. Furthermore, although we have reason to believe that mean levels of education and income in

our sample are representative of national averages (based on SES measured in other research samples from the same site), the recruitment from a science center could lead to some restriction of range in these variables and in gender stereotypic biases that could plausibly reduce our estimates of true effect sizes.

Finally, it's worth mentioning that the most relevant third variable explanation for the relationships observed among dads and their daughters are the beliefs and behaviors of mothers in these families. For example, dads who engage in more household work may be married to women who work more outside the home or who endorse more counter-stereotypical beliefs about gender roles. Although we were unable to collect enough data from both parents to properly examine these possibilities, analysis of the subsample of 68 parent dyads in our dataset, revealed only modest covariation among gender role variables (see Appendix A) and mothers' variables did not strongly predict daughters' occupational aspirations. While future research is surely needed, these aspects of our data speak against the possibility that the findings among our father sample are better explained by the beliefs or behaviors of their wives.

In conclusion, the present findings suggest that even in our current, progressive society where explicit (verbal) messages of gender equality are encouraged, young girls' developing beliefs about gender roles may very well be shaped by more subtle and indirect cues from their mothers and fathers' behaviors. Although research often considers how women and girls are constrained by gender stereotypes about women and work, the present study reveals the importance of considering gender stereotypes regarding domestic tasks. If our assumed causal model is accurate, fathers likely play an important role in modeling a more egalitarian future for their daughters by their contributions at home. Our results suggest that when fathers espouse and

enact a more equal distribution of domestic work, their daughters more easily envision balancing work with family and having a less gender-stereotypic career.

Table 2.1. Raw cell counts (*ns*) of child participants by sibling status, parent participation, and child sex.

	Fathers Only		Mothers Only		Both Parents		Total:
	Sons	Daughters	Sons	Daughters	Sons	Daughters	
Solo child	32	31	65	53	21	26	228
First Sibling	6	4	10	9	11	9	49
Second Sibling	5	4	10	9	10	7	45
Third Sibling	1	0	0	0	1	2	4
Total:	44	39	85	71	43	44	326
<u>% of sample:</u>	13%	12%	26%	22%	13%	13%	

Table 2.2. Means (SDs) and correlations between main variables measured among parents.

	EGB	IGA	ESS	ISS	Domestic	Workhours
<i>Correlations</i>						
EGB	.35**	-.01	.30**	.08	.45***	-.17*
IGA	.09	.18	.11	.27***	.09	-.12†
ESS	.09	.00	-.05	.10	.45***	-.74***
ISS	.13	.24**	.08	-.08	.12	-.05
Domestic	-.25**	.03	-.29**	-.02	-.31*	-.40***
Workhours	-.05	-.04	.40**	.26**	-.26**	-.12
<i>Means (SDs)</i>						
Mothers	27.10 _a (31.87)	.42 _a (.45)	29.49 _a (63.89)	.35 _a (.50)	68.21 _a (15.69)	21.45 _a (17.35)
Fathers	11.39 _b (27.17)	.42 _a (.54)	20.33 _a (53.42)	-.07 _b (.50)	42.16 _b (15.08)	42.01 _b (12.32)

Notes: Bivariate correlations for mothers above diagonal, fathers below diagonal, and between the subsample of married mothers and fathers along the diagonal. In the bottom portion of the table, means in the same column with different subscripts are significantly different from each other at $p < .05$. EGB: explicit gender role beliefs; IGA: implicit gender role associations; ESS: explicit self-stereotypes; ISS: implicit self-stereotypes.

† $p < .10$, * $p < .05$, ** $p < .01$, *** $p < .001$

Table 2.3. Means (SDs) and correlations between main variables for children.

	EGB	ESS	Occupation
EGS		.02	.09
ESS	.10		.05
Occupation	-.06	.08	
<i>Means (SDs)</i>			
Girls	29.96 _a (27.73)	16.95 _a (48.01)	2.33 _a (.60)
Boys	18.28 _b (26.17)	1.53 _b (42.25)	2.72 _b (.50)

Notes: Bivariate correlations for girls above diagonal, boys below diagonal; means in the same column with different subscripts are significantly different from each other.

EGS: explicit gender role beliefs; ESS: explicit self-stereotypes.

† p < .1, *p > .05, ** p < .01

Table 2.4. Summary of regression analyses predicting children's explicit gender role beliefs from parent variables.

	Mothers' Variables					Fathers' Variables				
	β	t	p	ΔR^2	df	β	t	p	ΔR^2	df
Block 1										
Child gender	.19	2.78	.006	.07	192	.24	2.86	.005	.10	126
Parent EGB	.18	2.44	.015			.09	1.04	.30		
Parent ESS	.01	.10	.92			.19	2.28	.024		
Block 2										
Parent IGA	.09	1.21	.23	.01	190	-.10	-1.09	.28	.01	124
Parent ISS	.04	.58	.56			-.03	-.30	.77		
Block 3										
Parent domestic	.06	.72	.47	.003	188	-.04	-.37	.71	.02	122
Parent work hours	-.02	-.14	.89			.15	1.54	.13		
Block 4										
Parent EGB X child gender	-.10	-1.03	.30	.01	187	.07	.63	.53	.003	121
Block 4										
Parent ESS X child gender	.12	1.19	.24	.01	187	-.21	-1.64	.11	.02	121
Block 4										
Parent IGA X child gender	.21	1.81	.069	.02	187	.17	1.35	.18	.01	121
Block 4										
Parent ISS X child gender	-.01	-.10	.92	< .001	187	.11	.92	.36	.01	121
Block 4										
Parent domestic X child gender	-.07	-.70	.48	.002	187	.02	.18	.86	< .001	121
Block 4										
Parent work hours X child gender	-.08	-.77	.44	.003	187	-.01	-.10	.92	< .001	121

Note. To conserve degrees of freedom, each interaction term was tested in a separate model where only that term was entered on Block 4. Results are similar when all interaction terms are included together in the same model.

Table 2.5. Summary of regression analyses predicting children's explicit self-stereotypes from parent variables.

	Mothers' Variables					Fathers' Variables				
	β	t	p	ΔR^2	df	B	t	p	ΔR^2	df
Block 1										
Child gender	.05	.72	.47	.01	192	.15	1.75	.083	.04	126
Parent EGB	-.04	-.47	.64			.07	.85	.40		
Parent ESS	.06	.84	.41			.09	1.01	.32		
Block 2										
Parent IGA	.05	.62	.54	.004	190	.01	.09	.93	.01	124
Parent ISS	-.06	-.75	.46			-.08	-.84	.40		
Block 3										
Parent domestic	.17	1.97	.051	.02	188	-.02	-.24	.81	.001	122
Parent work hours	.07	.66	.51			-.02	-.21	.83		
Block 4										
Parent EGB X child gender	-.05	-.54	.59	.001	187	.24	1.99	.049	.03	121
Block 4										
Parent ESS X child gender	.21	2.11	.036	.02	187	.08	.60	.55	.003	121
Block 4										
Parent IGA X child gender	.08	.70	.49	.003	187	.14	1.12	.27	.01	121
Block 4										
Parent ISS X child gender	-.05	-.49	.63	.001	187	-.18	-1.45	.15	.02	121
Block 4										
Parent domestic X child gender	.03	.30	.77	< .001	187	.15	1.39	.17	.02	121
Block 4										
Parent work hours X child gender	-.17	-1.64	.10	.01	187	-.15	-1.06	.29	.01	121

Note. To conserve degrees of freedom, each interaction term was tested in a separate model where only that term was entered on Block 4. Results are similar when all interaction terms are included together in the same model.

Table 2.6. Summary of regression analyses predicting children's occupational aspirations from parent variables.

	Mothers' Variables					Fathers' Variables				
	β	t	p	ΔR^2	df	β	t	p	ΔR^2	df
Block 1										
Child gender	-.36	-5.09	< .001	.13	176	-.42	-4.89	< .001	.19	113
Parent EGB	-.08	-1.07	.28			.17	1.96	.053		
Parent ESS	.08	1.04	.30			-.06	-.70	.49		
Block 2										
Parent IGA	.09	1.19	.24	.02	174	.08	.98	.33	.03	111
Parent ISS	.08	1.02	.31			.14	1.66	.10		
Block 3										
Parent domestic	.05	.54	.59	.002	172	-.06	-.59	.56	.02	109
Parent work hours	.03	.30	.76			.12	1.22	.23		
Block 4										
Parent EGB X child gender	.09	.95	.35	.004	171	.28	2.55	.012	.04	108
Block 4										
Parent ESS X child gender	.11	1.11	.27	.01	171	.07	.57	.57	.002	108
Block 4										
Parent IGA X child gender	.02	.15	.88	< .001	171	.29	2.34	.021	.04	108
Block 4										
Parent ISS X child gender	-.11	-1.11	.27	.01	171	.10	.80	.43	.004	108
Block 4										
Parent domestic X child gender	.18	1.76	.081	.02	171	-.26	-2.51	.014	.04	108
Block 4										
Parent work hours X child gender	-.12	-1.17	.24	.01	171	.06	.47	.64	.002	108

Note. To conserve degrees of freedom, each interaction term was tested in a separate model where only that term was entered on Block 4. Results are similar when all interaction terms are included together in the same model.

Figure 2.1. Interaction between mothers' explicit self-stereotypes and child gender child self-stereotypes (positive numbers indicate greater identification with a gender stereotypic same-sex adult).

Figure 2.2. Interaction between fathers' explicit gender role beliefs and child gender predicting child self-stereotypes (positive numbers indicate greater identification with a gender stereotypic same-sex adult).

Figure 2.3. Interaction between fathers' explicit gender role beliefs and child gender predicting children's occupational aspirations (3 = stereotypic of own gender, 2 = stereotype neutral, 1 = stereotypical of other gender).

Figure 2.4. Interaction between fathers' implicit gender role associations and child gender predicting children's occupational aspirations (3 = stereotypic of own gender, 2 = stereotype neutral, 1 = stereotypical of other gender).

Figure 2.5. Interaction between fathers' domestic contribution and child gender predicting children's occupational aspirations (3 = stereotypic of own gender, 2 = stereotype neutral, 1 = stereotypical of other gender).

3 Chapter: Complementarity between men's perceived caregiving and women's possible selves

3.1 Overview of studies

Everyone knows that marriage is the biggest personal decision you make, but it's the biggest career decision you can make. ... Partner with the right person because you cannot have a full career and a full life at home with the children if you are also doing all the housework and childcare. - Sheryl Sandberg (2013)

Despite progress toward gender equality during the past half century, there continue to be gender differences favoring men in career success, advancement, and earning potential (Zentner & Mitura, 2012). In understanding why women still have not achieved gender parity at work, especially when obvious barriers to their success have been removed, social psychological research has focused primarily on the ways in which gender stereotypes about women explicitly or implicitly constrain women's career decisions and advancement (Brown & Diekmann, 2010; Ceci & Williams, 2011; Eagly & Wood, 2011; B. Park et al., 2010; Stout et al., 2011). But as the above quote by Facebook C.O.O. Sheryl Sandberg suggests, the dynamics in heterosexual couples also impact women's ability to maintain a successful career while having a family. Although there is an active literature on the gender distribution in domestic labor in sociology and economics (Baxter, 2002; England, 2010; Haddock, Zimmerman, Lyness, & Ziemba, 2006; Kroska, 2004; Offer & Schneider, 2011; Wiesmann et al., 2008) almost no research in social psychology has examined the possibility that women's stereotypic assumptions about men's role

preferences might pose important constraints for women's ability to imagine themselves in higher earning career roles that demand more of their time.

Across four experiments and a meta-analysis of those effects, we tested a *complementarity hypothesis*, whereby women's ability to imagine themselves as the primary breadwinner of their future family (i.e., a more agentic role for themselves) is causally predicted by their perception that men are becoming more involved in childcare (i.e., a more communal role for men). Evidence obtained from these experiments is important as it might help to explain why young women sometimes "leave before they leave" more time-intensive careers and opportunities, because they anticipate having to shoulder the majority of domestic responsibilities in the future (Sandberg, 2013). Such evidence might also suggest that as perceptions of men's roles change to incorporate more communal involvement, young women will feel the freedom to pursue more demanding (and traditionally-male) career paths.

3.1.1 The division of domestic labor and asymmetrically changing gender roles

Over the past several decades, gender roles have both changed and stayed the same. In 1970, almost half of all two parent households had a mother who stayed at home with the children (Pew, 2015). In contrast, recent labor statistics confirm that nearly 70% of families in the United States are now comprised of dual-earner parents and in 46%, both parents work full-time (Pew Research Center, November 4, 2015). Although men still generally out-earn their partners, women are also increasingly becoming the primary breadwinner in the family (Pew, 2013). In this sense, women's roles have been expanding dramatically over the last half-century.

Yet we also know that once women have children, they are more likely than men to leave the workforce, reduce their work hours and, as a result, suffer a decrease in income and career advancement (Stone, 2007; Williams & Chen, 2013). On the one hand, many of these women

might truly prefer to prioritize family over career. For example, undergraduate women automatically identify with being a parent more than do undergraduate men (B. Park et al., 2010), even though most are not yet parents. However, twice as many working mothers as working fathers report that parenting responsibilities stand in the way of their career advancement, and this strain on women's careers is felt more strongly when their husbands are more career-focused than they are (Pew, 2015). Such data suggest that many women might feel that their choices are constrained in a complementary fashion by the roles adopted by their male partners.

An important obstacle to gender equality in salary and career advancement, then, is the relatively slower rate of change in gender roles adopted by men (Croft et al., 2015). That is, to the extent that men are less likely to take an active role in childcare and household chores, these responsibilities continue to disproportionately fall to women (Bianchi et al., 2000; Coltrane, 2000; Milkie et al., 2002). This *second shift* (Hochschild & Machung, 2012) for working mothers is a widely documented phenomenon that can lead women to “opt out” of their careers temporarily or permanently once they become mothers (Stone, 2007). However, it is also important to note that fathers are beginning to play an increasing role in childcare. Although the percentage of fathers who are choosing to stay at home to take care of their children or other family members is still quite low (3.4%), it has been increasing over the last two decades (Pew, 2014). Especially among couples who both work full-time, women and men are now increasingly likely to report sharing many childcare and domestic tasks equally (Pew, 2015).

How are these albeit modest changes in men's willingness to take on a shared or even primary caregiving role incorporated into how young women view their own future?

It is not surprising that women, once parents, might make a rational decision trade-off to prioritize their time on family more than their career. Our concern, rather, is that women might *anticipate* this trade-off far in advance of being in the situation of having to juggle and negotiate work and family responsibilities with a partner. For example, young heterosexual women report expecting a traditional, gender-based division of labor in their future relationship (Askari et al., 2010; Erchull et al., 2010; Park, Smith, & Correll, 2008a), and such stereotypical expectations create conflict between women's work and family roles (Hodges & Park, 2013). Such findings suggest that women might be, at least on some level, aware of how they are constrained by a male gender role that is complementary to theirs. Extrapolating from this evidence, we sought to understand whether women's own ability to imagine themselves as the breadwinner in their future family would have a complementary relationship with their perception of men's general likelihood of taking on primary caregiving roles.

3.1.2 Schemas of the self, others, and relationships

Understanding the concept of self-schemas can shed some light on the ways in which young women can envision their future roles. People's self-schemas are cognitive representations of the self and are informed by a person's past experiences, current context, and future expectations. The self-schemas people have for a prospective future version of whom they might eventually become are called *possible selves* (Markus & Nurius, 1986; Smith & Oyserman, 2015). Unlike current self-schemas, possible selves are uniquely based on anticipated social roles and expectations about future events and environments. That is to say, people's possible selves are often an indirect representation of their stereotypes of a given role or domain. Such

stereotypes or other heuristics are more likely to influence people's possible selves the more they are imagining themselves in a future that is distant and therefore necessarily more abstract. For example, there is a notable gender difference in the family-related possible selves (as rated by judges) of college students who imagine their lives in 10-15 years, but there is no such difference when imagining themselves only one year in the future (Brown & Diekmann, 2010). This observed pattern suggests these possible selves in the distant future could be more a function of women's and men's stereotypical expectations for their future roles, as opposed to true gender differences in career self-efficacy or ambition or unconstrained desires to balance both career and family.

When considering women's (and men's) expectations for the future, it is not only important to consider schemas they have about themselves, but also the schemas about their future romantic relationships. Indeed, Aron and Aron (1986) theorized that the perception of oneself includes the resources, perspectives, and characteristics of one's close relationship partner. Importantly, romantic relationship schemas are defined not merely by expectations of the self and the partner as individuals, but also by expectations about the dynamics of the relationship between the two, which might include a forecasted division-of-labor. Again, the abstract nature of these future forecasts makes them especially susceptible to one's gender stereotypes and perceptions of changing gender norms. Women's stereotypical expectations about their future relationship partners – men – should therefore inform their own possible selves. These expectations, however, might also be shaped by people's more general beliefs that men (and thus future partners) will continue to exhibit fewer communal traits and behaviours compared to women (Diekmann & Eagly, 2000). When women have a schema that men's roles are stable and unchanging (i.e., that men will continue to be uninterested in caregiving roles),

women might anticipate constraints on their career and be less likely to imagine themselves becoming the breadwinner of their family. In turn, women, in a complementary fashion, might more readily imagine a breadwinning, career-oriented future self after encountering evidence that men are becoming more willing to adopt a non-traditional role within a relationship

Secondary to women's anticipated adoption of breadwinning roles, we also considered their anticipation of adopting a traditional female role as the primary caregiver of their children. On the one hand, women's expectations that men are becoming more involved in caregiving might lead women to feel less of an expectation that they would need to be the primary caregiver in their future family. However, we also recognize that social pressures and individual expectations surrounding motherhood can be quite strong. For example, even when fathers play a more active role in caring for children and the household, women often find it difficult to relinquish the title of primary caregiver and still oversee and manage how caregiving tasks are done (Allen & Hawkins, 1999; Schoppe-Sullivan, Brown, Cannon, Mangelsdorf, & Sokolowski, 2008). The role of primary caregiver might be difficult for women's to ignore given that evidence that women's need for power can be satisfied by taking on a dominant role in the domestic sphere (Williams & Chen, 2013). Thus, we examined separate measures of women's anticipated likelihood of becoming the primary breadwinner and the primary caregiver of their future families.

3.1.3 Overview of the current research

Four studies (total $N = 363$) provide a test of the complementarity hypothesis – stating that the likelihood that women anticipate assuming a non-traditional, breadwinning role in their future families is at least partly contingent upon expectations about their potential romantic partners' willingness to adopt a caregiving role for their family. In Study 1, we used counter-

stereotypical male exemplars to prime female participants with thoughts of family-oriented men (vs. career-oriented men) prior to measuring their career- and family-related possible selves. In Studies 2-4, we sought to broaden the ecological validity of the hypothesis and manipulation by providing participants with normative messages (like those they might read in the news) indicating that men are increasingly assuming caregiving roles (as opposed to staying more career-focused). Additionally, in Study 4, we tested a potentially relevant moderator of the complementarity effect – women’s career ambition – in order to better understand the parameters of the effect. We hypothesized that normative beliefs about men’s interest in childcare should be particularly influential among highly ambitious women, who are more likely to become breadwinners of their future families. These women with more ambitious goals are the ones who might be most cognizant and concerned about the conflict between juggling family with a successful career. They therefore might be most sensitive to information about changing norms that could reduce this conflict and enable their own goals. Finally, we present summary data in which we meta-analyzed the main effects of our manipulation across all four studies and report an estimated average effect size for gender role complementarity.

3.2 Study 1

Past research has employed exemplars of successful women to inspire young female undergraduates to adopt counter-stereotypic roles (Asgari, Dasgupta, & Stout, 2012; Shaki Asgari, Dasgupta, & Gilbert Cote, 2010). In this initial exploratory study, we used a similar technique by showing participants a set of profiles of men who were either career-oriented, family-oriented, or career-family balanced. We originally designed this study to examine how exposure to these male role models might influence men’s expected roles. Although we observed no clear and consistent findings among men, this first study revealed interesting effects for

women that then inspired the current program of research. The analyses reported here thus provided preliminary exploratory evidence that women primed with more counter-stereotypic (family-oriented) male exemplars see themselves, complementarily, in more agentic roles (i.e., as the primary economic provider) in their future families, as compared with those who viewed stereotypic male exemplars (career-oriented).

3.2.1 Method

3.2.1.1 Participants and design

A sample of 74 heterosexual undergraduate women³ under 25 years old participated in this study for course credit (62% East Asian/23% white). These participants were randomly assigned to one of three male exemplar prime conditions in a between-subjects design. This study was run in Spring of 2011, before widespread discussion of the need for larger samples. The sample size was planned based on recommendations at that time (Simmons, Nelson, & Simonsohn, 2011).

3.2.1.2 Procedure

Participants were told that the study was comprised of two distinct parts aimed at exploring people's life narratives. First, they were asked to read and rate life narratives of other people as part of an ostensible pilot study to help us select stimuli for future research. These profiles contained our independent variable, as participants were randomly assigned to rate five similar profiles of men who were all either: a) career-oriented, b) family-oriented or c) career-

³ This is a subsample of a larger study that also included 69 men. As mentioned, an original goal was to test the effects of the male communal exemplars on men's communal ambitions (see Asgari et al., 2010; 2012), but men showed no consistent patterns in response to the exemplar primes and their data will not be discussed further.

family balanced. After viewing each profile, participants answered a set of questions that included the manipulation checks.

During an ostensibly unrelated second part of the study, participants reflected on their own life narrative by imagining and making ratings of what their lives would be like 15 years in the future. Because of the exploratory nature of this first study, many variables were assessed (see Additional Measures listed below), but among these were the relevant dependent variables for this study, such as whether participants believed they would be married/have a long-term partner, have children, and what their occupations would be (if any), and most importantly, their perceived likelihood of being the primary breadwinner and/or primary caregiver in their future family. All tasks were completed on computers via Media Lab Experiment Software.

3.2.1.3 Materials and measures

3.2.1.3.1 Exemplar primes

The male exemplar profiles were created by modifying stimuli used by Stout et al., 2011 (Study 2) and were pilot tested on a sample of 25 undergraduates to ensure that they accurately depicted men who focused primarily on their career, their family, or maintained a balance between the two roles. In the family-oriented condition the men took time off from their successful careers (as women often do) to raise small children, whereas in the career condition the men worked full-time (as men often do). In the balanced condition, the exemplars were portrayed as having thriving careers paired with flexible schedules, which allowed them to spend more time with their families (see Appendix B).

Pilot data revealed that these three distinct types of exemplars were perceived accurately. According to a 7-point Likert type scale (1 = family-oriented; 4 = balanced; 7 = career-oriented), the career-focused exemplars were rated as significantly more career-oriented ($M = 5.96$) than

the family-oriented exemplars ($M = 2.19$), and both were significantly different from the balanced exemplars ($M = 4.14$), all $ps < .001$. Importantly, across the three conditions, the profiles mentioned the same facts about the men's children and their wives' careers, so that this information was held constant across condition.

3.2.1.3.2 Ratings of exemplars

After viewing each profile, participants rated the exemplars' degree of career-family balance on a seven-point scale (1 = family; 4 = balanced; 7 = career). Participants' ratings of all five profiles were combined to create an average rating of the exemplars' career-family balance ($\alpha = .84$). Participants also provided masculinity ($\alpha = .89$) and femininity ($\alpha = .89$) ratings of the exemplars using the Personal Attribute Questionnaire (PAQ; Spence, Helmreich & Stapp, 1975), which contains 16 traits rated on a scale from 1 (not at all descriptive) to 5 (very descriptive). Average ratings of the eight masculine and eight feminine traits were aggregated across each of the five exemplars, producing mean masculinity and femininity ratings for each participant.

3.2.1.3.3 Participants' possible selves

Participants first provided basic demographic information for their future life expectations (15 years from now). Specifically, they indicated whether or not (yes or no) and rated how likely they are (from 1 = not at all likely to 7 = extremely likely) to be married and have children, the highest level of education anticipated for self and their spouse, and their projected annual household and personal income. To assess participants' perceptions of their future roles, they were asked to rate the likelihood that they would become the *primary economic provider* and *primary caregiver* of their future families on two seven-point scales ranging from 0 (not at all likely) to 6 (extremely likely). Participants then read a list of common daily activities

(e.g., working, taking care of children, etc.) for which they had to allot a percentage of their total waking hours they would spend on each task. Lastly, participants completed an adapted Day Reconstruction Method (Kahneman, Krueger, Schkade, Schwarz & Stone, 2004), using the standard template to create a typical Wednesday in their lives 15 years in the future (see Appendix B). These anticipated daily schedules were then manually tallied for the number of hours to be spent at work and on domestic tasks (i.e., taking care of children and doing housework). Participants' estimated percentage of time and number of hours (based on the day reconstruction task) were standardized and averaged together to create two separate concrete task outcomes: average time working, $r(67) = .69, p < .001$, and average time doing childcare, $r(67) = .36, p = .003$.

3.2.1.3.4 Additional measures

Several other measures included in this exploratory study are not discussed as they were unrelated to the hypothesis tested here or were not retained in follow-up studies. These included additional ratings of the exemplars' representativeness to the average male, similarity to participants, and both physical and long-term attractiveness as a potential mate to someone of the opposite sex (data on these last items will be reported in Chapter 4). Also included (after reading and rating the profiles) was a Go/No Go Association Task (GNAT; Nosek & Banaji, 2001) originally designed to measure participants' implicit associations between self/other and career/family. Other measures collected in the Future Life Narrative part of the study included: expected age of oldest or only child; expected number of people living in household; anticipated

job satisfaction and job success; flexibility of work schedule; and ratings of overall life satisfaction (also broken down into work and family life separately).

3.2.2 Results and discussion

3.2.2.1 Ratings of exemplars

A one-way ANOVA on the manipulation check of the participants' perceptions of the exemplars' lifestyles revealed that participants accurately perceived the career-family balance of the male exemplars they saw, $F(2, 68) = 69.42, p < .001, \eta_p^2 = .67$ (see Table 3.1).⁴ Post hoc comparisons indicated that participants in each of the three conditions rated the exemplars as appropriately career-oriented, family-oriented, or career-family balanced, all $ps < .001$.

Similar patterns resulted from ANOVAs on the masculinity, $F(2, 68) = 18.63, p < .001, \eta_p^2 = .35$, and femininity ratings of the exemplars, $F(2, 68) = 9.83, p < .001, \eta_p^2 = .22$.

Specifically, the career-oriented exemplars were rated as significantly more masculine ($M = 4.03, SD = .33$) and less feminine ($M = 3.15, SD = .52$) than both the family-oriented and balanced exemplars, both $ps < .001$. The family-oriented and balanced exemplars were rated as similarly masculine ($M_{family} = 3.22, SD = .57; M_{balance} = 3.43, SD = .48$) and feminine ($M_{family} = 3.82, SD = .65; M_{balance} = 3.82, SD = .61$) to one another, both $ps > .12$.

3.2.2.2 Effects on possible selves

3.2.2.2.1 Descriptives

Initial analyses of women's ratings of their futures 15 years forward revealed that most expected to be married (96% selected that categorical response, with an average likelihood of $M = 6.03, SD = 1.25$) and to have children (89% likelihood of having one or more children, an

⁴ Degrees of freedom are reduced due to missing data for three participants.

average of three children). Most participants planned to obtain a graduate degree (63% giving modal response) and expected to have a husband who has also obtained a graduate degree (64% giving modal response). On average, they expected to be earning between \$60-70,000 a year personally and \$110-120,000 a year as a household. In sum, our sample consisted largely of aspiring professional women who expect to be in a dual earning couple. None of these variables were affected by the manipulations, all F s < 1.

3.2.2.2.2 Future roles

The complementarity hypothesis (developed based on the results of this study) suggests that women's perceptions of their future roles might be shaped by their perceptions of men's interest and engagement in childcare. A one-way ANOVA on women's anticipated likelihood of becoming the primary economic provider yielded a significant effect of condition, $F(2, 70) = 3.61, p = .03, \eta_p^2 = .09$ (see Figure 3.1). Follow-up comparisons revealed that women who viewed the family-oriented male exemplars were significantly more likely to anticipate becoming the primary provider than those who viewed either the career-oriented exemplars, $d = .64, p = .03$, or the balanced exemplars, $d = .73, p = .02$ (see Table 3.2). The manipulation had no significant effect on women's expectations of future caregiving, $F(2, 70) = 1.41, p = .25, \eta_p^2 = .04$.

Because there was no relationship between women's anticipated likelihood of caregiving versus breadwinning roles ($r = -.08, p = .52$), we also directly compared them in a 2 (role: breadwinner, caregiver) x 3 (exemplar prime: career, balanced, family) mixed model ANOVA with the first variable as a within-subjects factor. A marginal interaction, $F(2, 70) = 2.40, p = .098, \eta_p^2 = .06$ (see Figure 3.1) qualified a main effect of role type, $F(1, 70) = 15.75, p < .001, \eta_p^2 = .18$. In general, women were more likely to envision themselves as the primary caregiver than

the primary breadwinner of their future family. However, this simple effect of role was only significant after women had viewed career-focused, $d = 1.18$, $p < .001$, and balanced male exemplars, $d = .66$, $p = .02$, but was smaller and not significant among women who viewed family-oriented male exemplars, $d = .22$, $p = .48$.

3.2.2.2.3 Concrete tasks

Unlike women's anticipation of adopting the roles of breadwinner and caregiver in the future, their concrete expectations for how they would spend their time on a daily basis was not sensitive to the manipulation of men's roles. Specifically, there were no significant differences between conditions in the amount of time women expected to spend working, $F(2, 71) = .92$, $p = .40$, $\eta_p^2 = .03$, or taking care of their children, $F(2, 71) = .22$, $p = .80$, $\eta_p^2 = .01$ (see Table 3.3). Because these concrete percentage and time measures were generally unrelated to women's expected likelihood of becoming the primary breadwinner and caregiver (see Table 3.4), we speculated that stereotypes about men's roles could have more of an effect in shaping women's abstract perceptions of the self and their future role than their specific daily activities. However, given the small sample size, we also included in these measures in Studies 2 and 3 in an effort to replicate these patterns.

The patterns from this exploratory study provided some initial suggestion that women's abstract possible selves might be contingent upon the extent to which they perceive men (i.e., potential mates) as willing to take on the caregiving responsibilities that must ultimately be negotiated between parents. Importantly, these effects were specific to women's likelihood of becoming providers; there was no significant effect of the manipulation on women's rated likelihood of becoming primary caregivers. From these data, we formulated the complementarity hypothesis, whereby a prime of men's caregiving behavior would not lead women to simply

mimic that behavior, but would instead have effects on a complementary behavior (i.e., breadwinning) among dyadic couples. Given the exploratory nature of this initial study, we next sought to conceptually replicate these patterns using a more general manipulation of changing male norms.

3.3 Study 2

The findings of Study 1 suggested that women's own possible selves might shift in complementary ways to the expectations primed about future male partners. However, since our first study was not specifically designed with this hypothesis in mind, we developed a new paradigm that we reasoned might provide a more focused test of the complementarity hypothesis. Because the effects of exemplar primes can be weakened if people categorize the exemplars as "exceptions to the rule," rather than perceiving them as evidence of broader patterns of group behavior (Erickson & Kruschke, 1998), we decided against a direct replication of the exemplar paradigm. Instead, we chose to harness the powers of normative social influence to provide participants with normative information that explicitly indicated a general role change among men (vs. not).

In Study 2, female participants viewed graphs presented as general statistical information about the degree to which men's roles as caregivers are changing rapidly or slowly before completing the same future life measures used in Study 1. We tested the complementary hypothesis that when women believe that men's roles are changing rapidly and will continue to change towards more domestic involvement, women will be more likely to anticipate adopting a

counter-stereotypic role as the primary breadwinner in their future family. We again tested for parallel effects on becoming the primary caregiver and other concrete future behaviors.

3.3.1 Method

3.3.1.1 Participants and design

A sample of 37 heterosexual undergraduate women under 25 years of age participated in this study for course credit (44% East Asian/25% white). After conducting Study 1, we reasoned that our complementarity hypothesis should only apply to women who expect that they will have a romantic partner and children in the future. Thus, four participants were excluded from analyses for indicating on the categorical measures that they did not plan to have a spouse/partner ($n = 2$) or children ($n = 2$) fifteen years in the future.⁵ Participants were randomly assigned to one of two conditions in a between-subjects design. As this study was run in Spring 2013, sample size was determined based on what were then considered adequately sized samples to test these effects (Simmons et al., 2011). We recognize that this is a small sample by today's changing conventions, a limitation we try to remedy with our meta-analysis described later.

3.3.1.2 Procedure

The procedure for this study largely mirrored that of Study 1, but used normative trend primes depicting graphs of changing roles, instead of exemplar primes during the first part of the session. Participants were told that the researchers were examining the effect of changing trends on people's own life narratives, and that they should study a laminated page depicting four graphs for five minutes while thinking about how the statistics and information presented are

⁵ Results are unchanged when all participants are included in analyses. This will be addressed directly in the meta-analysis and more information can be found in SOM.

relevant to their own lives.⁶ One of these four graphs depicted an increasing percentage of stay-at-home dads over time, but depending on condition, this graph presented the change as rapid or slow. The other filler graphs were designed to mask the focus on gender and depicted information about rates of fruit and vegetable consumption, trends in precipitation in Canada, and the decline in smoking rates. Finally, as in Study 1, participants completed the dependent measures.

3.3.1.3 Materials and measures

3.3.1.3.1 Graph primes

The graphs used to manipulate changing gender roles depicted real data on the rate of change in the number of stay-at-home-dads in Canada between 1986 and 2010 (Statistics Canada, 2010). However, the graph itself was manipulated by changing the y-axis and modifying the figure caption to present these data as evidence that roles are changing rapidly or that roles are changing slowly (see Appendix B). In the slow change condition, the graph was represented with a y-axis ranging from 0-100% and the figure caption described that the percentage of stay-at-home-parents who are fathers has only risen from 4% to 12% between 1986 and 2010, and is projected to remain relatively low in the coming years. Conversely, in the rapid change condition, the same graph was represented with an inflated y-axis, creating a visually steep

⁶ Note, that an initial pilot test of this paradigm did not include the instruction to consider the graphs in relation to one's own life and revealed no effects of the graph manipulation on participants' possible selves. We speculated that vague instructions about time perspective, which served as our cover story, prevented participants from processing the abstract information about these trends deeply enough to change their own normative beliefs. However, our failure to include a manipulation check also prevented us from having clear evidence of this. The current paradigm thus sought to have participants process the normative information in more self-relevant ways and included a check on the manipulation's success. Details on this pilot test are available from the first author.

positive slope, and the figure caption described that the number of stay-at-home-dads has tripled over the past few decades and is projected to increase at a similar rate in the coming years.

3.3.1.3.2 Manipulation checks

As part of a final questionnaire, participants rated what the graph had depicted in terms of the speed of men's changing roles, on a scale from 1 (very slowly) to 7 (very rapidly). They also indicated the extent to which they personally believed that men's roles are changing rapidly, on a scale from 1 (strongly disagree) to 7 (strongly agree).

3.3.1.3.3 Participants' possible selves

As in Study 1, we measured basic future demographic information and the likelihood that participants would see themselves becoming the primary economic provider and the primary caregiver according to a seven-point scale ranging from 0 (not at all likely) to 6 (extremely likely). We also included the task percentage measure and future day reconstruction of a typical day, once again creating combined measures of average anticipated time working, $r(31) = .30$, $p = .10$, and doing childcare tasks, $r(29) = .37$, $p = .05$.

3.3.1.3.4 Additional measures

As in Study 1, our primary dependent measures were embedded within a larger questionnaire containing other measures and filler items that are listed in the SOM.

3.3.2 Results and discussion

3.3.2.1 Manipulation checks

An independent groups *t-test* on the attention check question revealed that participants accurately recalled the information from the graphs; women in the rapid change condition recalled a graph indicating men's roles changing more rapidly than did women in the slow

change condition, $t(31) = 6.48, p < .001, d = 2.25$ (see Table 3.1). Importantly, analyses also revealed that women internalized these data into their own normative beliefs. Women in the rapid change condition agreed more strongly with the personal belief that men's roles are rapidly changing than did participants in the slow change condition, $t(31) = 2.45, p = .02, d = .85$. These two manipulation checks were correlated, $r(33) = .62, p < .001$.

3.3.2.2 Effects on possible selves

3.3.2.2.1 Descriptives

As noted, our exclusion criteria led to a sample where 100% envisioned being married and having children ($M_{\text{children}} = 2.12, SD = .74$). Two-thirds (67%) of participants also planned to obtain graduate degrees and marry a partner who had also obtained a graduate degree (55%). On average, they expected to earn between \$70-80,000 a year personally, and over \$150,000 a year combined as a household. None of these variables were affected by the manipulation of men's changing roles, all $ps > .31$.

3.3.2.2.2 Future roles

Independent samples t-tests performed separately on each primary outcome measure yielded the expected effect of condition on women's anticipated likelihood of becoming a breadwinner, $t(31) = 2.60, p = .01, d = .90$, but no significant effect on their anticipated caregiver likelihood, $t < 1, d = -.24$ (see Table 3.2). Similar to Study 1, these results suggest that women who were given information indicating that men were becoming more family-oriented were more likely to anticipate adopting a non-traditional, breadwinning role compared to women who were given information indicating that men are remaining relatively uninvolved in caregiving. Again,

women's anticipated likelihood of these two roles was uncorrelated, $r = -.01$, $p = .98$ (see Table 3.4).

Also replicating the pattern in Study 1, a 2 (condition) x 2 (role type: provider vs. caregiver) mixed ANOVA (with role type as a within-subjects variable) revealed a significant main effect of role, $F(1, 31) = 25.35$, $p < .001$, which was qualified by a significant interaction, $F(1, 31) = 6.26$, $p = .02$, $\eta_p^2 = .17$ (see Figure 3.2). Simple effects tests revealed a stereotypic role pattern in the slow change condition, such that women reported greater likelihood of becoming caregivers than providers, $F(1, 31) = 27.56$, $p < .001$, $d = -1.49$, but that difference was smaller and only marginally significant in the rapid change condition, $F(1, 31) = 3.31$, $p = .08$, $d = -.79$.

3.3.2.2.3 Concrete tasks

Another set of independent samples t-test revealed that women in both conditions anticipated spending the same percentage of their time working, $t(31) = .36$, $p = .72$, $d = .12$, but women in the rapid change condition expected to do a marginally smaller proportion of childcare during their days than women in the slow change condition, $t(31) = -1.84$, $p = .08$, $d = -.64$ (see Table 3.3).

Study 2 thus provided further evidence that women's expectation of becoming primary providers in their future family might be complementary to knowledge about men's changing roles. This effect mirrors the trade-offs and compromises that women very likely have to make as they strive for balance at home while simultaneously pursuing career goals. Again, we observed that men's changing roles do not significantly diminish women's anticipated likelihood of becoming the primary caregiver. At the same time, however, women in the rapid change condition were somewhat less likely to anticipate spending as much of their concrete time in the future on caregiving tasks. Though these findings are intriguing, a key limitation of Study 2 is

the inability of the design to test whether the effect of condition on women's likelihood of becoming the primary provider is being driven by an increase resulting from the idea of rapid change in men's roles or a decrease resulting from the idea that men's roles are changing slowly. Thus, we conducted Study 3 as a direct replication of Study 2 with the inclusion of a control condition and with a much larger sample size in light of contemporary discussions about underpowered studies leading to unstable effect sizes (Cumming, 2014).

3.4 Study 3

3.4.1 Method

3.4.1.1 Participants and procedure

Participants were 136 heterosexual undergraduate women under the age of 25 who completed the study for either course credit or payment (47% East Asian, 23% white). Three of these women indicated that they planned to be single in 15 years, and another 12 of them indicated that they would not have any children. After excluding these 15 women (11%) from analyses, we were left with a final sample of 121 women.⁷ This study was run in Spring 2014 and the sample size was determined by doubling the number of participants in each condition compared to the number we had per condition in the Study 2.

This study followed the same procedures as in Study 2 in that we manipulated men's changing roles using graphs depicting either slow or rapid change. In Study 3, however, we

⁷ Patterns of effects are similar but the effect of condition is weaker when analyses are run on the complete sample, which is consistent with our theorizing that women who want partners and kids are most likely to be affected by our manipulation. See meta-analysis for more information.

included a third, no information control condition where participants only viewed the three filler graphs.

3.4.1.2 Measures

The measures used in Study 3 were largely the same as those used in Study 2, with the exception of the manipulation check questions. Instead of reporting whether or not the graph had depicted men's roles as changing (which was vague, especially for the control participants who saw no such graph), participants in this study indicated whether the graphs showed that men are "becoming more family-oriented" or "becoming more career-oriented", on a scale from 1-7, with a midpoint response of 4 = "staying the same". An option for "N/A, I did not see this graph" was also provided. All participants (including those in the control condition) also indicated their own beliefs about men's roles on a separate question using the same anchors. Partway through running the study, we thought to measure work hours, so for a subsample of participants in this study ($n = 72$), we also collected an open-ended measure of how many hours per week they plan to work.

3.4.2 Results and discussion

3.4.2.1 Manipulation checks

An independent samples t-test comparing participants' reports of what they had learned from the graphs between the rapid and slow change conditions yielded a significant effect, $t(73) = -4.19, p < .001, d = -.97$ (see Table 3.1). Women in the rapid change condition were more likely to recall the graph as having depicted men becoming more family-oriented than were women in the slow change condition. Moreover, a one sample t-test comparing each condition separately to the midpoint of the scale (4 = men's roles staying the same) showed that indeed

women in the rapid change condition rated men as significantly different from the midpoint, $t(35) = -7.79, p < .001$, whereas women's ratings in the slow change condition were statistically similar to the midpoint, $t(38) = -1.21, p = .23$.

A one-way ANOVA on participants' personal beliefs about men's roles across all three conditions also yielded the expected effect of our manipulation, $F(2, 118) = .12, p < .001, \eta_p^2 = .04$ (see Table 3.1). Women in the rapid change condition were marginally more likely than women in either the slow change or control conditions to believe that men are becoming more family-oriented, both $ps = .07$ (note, that an independent groups t-test of just the rapid and slow change conditions is significant, $t(74) = -1.99, p = .05, d = -.46$). Thus, women accurately perceived the manipulation, and internalized it to some extent, though perhaps not as strongly as in the prior study. This is an issue we will return to in Study 4.

3.4.2.2 Effects on possible selves

3.4.2.2.1 Descriptives

Again, our exclusions ensured that all women in this sample anticipated getting married and having an average of two children. The majority also planned for themselves (63%) and their spouses (56%) to obtain graduate degrees, and women (in the subsample that included this measure) anticipated working 37 hours per week, on average. Finally, women expect to earn between \$80-90,000 a year personally, and between \$140-150,000 a year combined.

3.4.2.2.2 Future roles

One-way ANOVAs conducted on the anticipated breadwinner and caregiver variables replicated our earlier studies, but now with a larger sample, $F(2, 118) = 3.05, p = .05, \eta_p^2 = .05$ (see Table 3.2). Again, women who saw graphs portraying rapid change in men's roles

anticipated a significantly greater likelihood of becoming primary economic providers than did women who saw graphs portraying men's roles changing slowly ($d = .58$). The anticipated likelihood of becoming the primary provider among women in the control condition fell in between the two treatment conditions but did not differ significantly from either (control vs. rapid change $p = .09$, $d = .43$; control vs. slow change $p = .43$, $d = -.16$).

With respect to women's anticipated likelihood of becoming the primary caregiver, we also observed an effect of condition, $F(2, 118) = 3.16$, $p = .05$, $\eta_p^2 = .05$. Specifically, women in the slow change condition anticipated a significantly greater likelihood of becoming the primary caregiver than did women in the control condition, $p = .02$, $d = .48$; and a marginally greater likelihood than did women in the rapid change condition, $p = .08$, $d = -.44$. Women in the rapid change and control conditions did not differ significantly in their expected likelihoods of becoming primary caregivers, $p = .61$, $d = .11$.

Although women's anticipated likelihood of becoming primary breadwinners and caregivers were negatively correlated in this sample (see Table 3.4), we ran the mixed model analysis for consistency in reporting between studies. As predicted, a 3 (condition: rapid change, slow change, control) x 2 (role: provider vs. caregiver) mixed model ANOVA (with role as a within subjects variable) revealed a significant main effect of role wherein women reported a greater likelihood of becoming the primary caregiver more than the primary provider, $F(1,118) = 62.00$, $p < .001$, $\eta_p^2 = .34$, that was again qualified by a significant interaction, $F(2,118) = 3.95$, $p = .02$, $\eta_p^2 = .06$ (see Figure 3.3). Follow-up comparisons suggested that a traditional gender role expectation of women as caregivers rather than breadwinners was significant in all three groups, but was markedly stronger when women were primed to think of men's roles as changing slowly

($d_{slow} = -1.53$) as compared to either the rapid change ($d_{rapid} = -.91$) or control condition ($d_{control} = -.94$).

3.4.2.2.3 Concrete tasks

With this larger sample, we were able to more confidently examine condition differences in how women expect to be spending their time. There was a significant effect of condition on women's anticipated amount of time spent working (aggregated percent of time and day reconstruction task, $r(119) = .47, p < .001$), $F(2, 118) = 5.38, p = .01, \eta_p^2 = .08$ (see Table 3.3). Follow-up tests revealed that women in the slow change condition expected to work less in the future than women in either the rapid change ($d = .64, p = .004$) or control condition ($d = .57, p = .01$). There were no condition differences in anticipated time spent doing childcare (aggregated percent of time and day reconstruction task, $r(117) = .15, p = .12$), $F(2, 118) = .84, p = .44, \eta_p^2 = .01$ ($d_{rapid \text{ vs. } slow \text{ change}} = -.20, d_{control \text{ vs. } rapid \text{ change}} = -.07, d_{control \text{ vs. } slow \text{ change}} = -.28$).

These findings suggest that by learning that men are becoming more family-oriented, and are therefore taking on more traditionally female tasks, women were more able to envision themselves taking on a more non-traditional role as the primary breadwinner of their future families. Importantly, we also learned from this study that if women are given information indicating that men's role are changing quite slowly, they might feel more constrained by traditional gender roles than would occur by default in a control condition. However, we have not observed consistent evidence across studies that as the likelihood of adopting one role increases (becoming a breadwinner), the other will necessarily decrease (becoming a caregiver), and even in this larger sample, the size of the effects on women's breadwinning expectations (d

= .58) and anticipated work time ($d = .64$) were consistently larger than the effects on their ratings of being a primary caregiver ($d = -.44$) and anticipated time spent caregiving ($d = -.20$).

3.5 Study 4

The goal of Study 4 was to investigate important parameters of the complementarity effect.⁸ Our prior three studies revealed that women who perceive men's roles as changing are more likely to envision becoming primary breadwinners than women who perceive men's roles as relatively stable. At the same time, these women do not necessarily see themselves as less likely to become primary caregivers. One explanation for this pattern might be that women are anticipating filling the breadwinner role out of necessity when they learn that men are taking a greater interest in caregiving roles (i.e., they are feeling *forced* to adopt non-traditional roles to fill the resulting void in breadwinning). Alternatively, women might be anticipating taking on the previously-male role of breadwinning out of a newfound sense of freedom, in complement to information about men's changing roles (i.e., they are feeling *enabled* to adopt a non-traditional role as the breadwinner of the family).

We reasoned that if women are feeling forced to pick up the economic slack when anticipating caregiving husbands, then any individual differences related to their own goals and preferences would be irrelevant to these effects. Just as strong situations might mute the potential for individual differences to predict behavior (Cooper & Withey, 2009; Mischel, 1977), if

⁸ Note that we ran a previous iteration of Study 4 just prior to the one reported here. After data were collected, it came to our attention that half of the study's participants had considerably less time to view the graphs (due to experimenter error). Because we did not know which participants had been affected, we had concerns about the validity of the data from this study. For example, there were no condition differences in the internalization of information presented in the graphs, suggesting that the manipulation was ineffective in changing normative beliefs about men in this sample. Thus, Study 4 is a repeat of this study.

perceived economic necessity drives these effects, we would expect the complementarity effect to be observed when men's roles are changing rapidly regardless of women's own career goals or ambitions. However, if rapidly changing male norms *enable* women to envision non-traditional possible selves, then their own career ambitions might be more strongly predictive of their perceptions of becoming the breadwinner in their future family in this condition. Therefore, in Study 4, we measured women's career ambition and tested whether individual differences on this dimension would moderate the effect that information about men's roles has on women's possible selves.

3.5.1 Method

3.5.1.1 Participants

Participants in this study were 116 heterosexual undergraduate women under age 25 ($M_{age} = 20.02$ years; 42% white, 36% East Asian). Women were only eligible to participate in this study if they indicated on a pre-screening survey that they expected to have a spouse/long-term partner and children in the future. Data from two participants were excluded from analyses due to technical or logistical issues during the experimental session (final $N = 114$). This study was run in Fall 2014, and sample size was determined based on recommendations from Cumming (2014). We had planned to collect data from 100 participants (50 in each condition) and simply continued running the study until the end of the school term, thus finishing with 16 additional data points.

3.5.1.2 Procedure

The procedure in this study was the same as that used in Studies 2 and 3. However, to further refine the methodology to detect effects by fostering internalization of the normative

information, we instructed participants to study the fact sheet of graphs for two minutes, and then to spend three minutes writing about the fourth graph (which always depicted men's changing roles). Specifically, they were told, "In your own words, what is this graph saying about current trends and their predicted patterns for the future?" Immediately following this writing period, participants rated the degree to which they personally believed that men's roles are changing using the same measure as in Study 3.

Participants completed a version of the same future life questionnaire from the prior studies, although the day reconstruction task was omitted to save time, and afterward, completed measures of career ambition and gender role beliefs (in random, counterbalanced order).⁹ These moderator measures were included at the end in order to keep participants blind to our explicit interest in gender roles. Finally, participants were asked about the graphs they had viewed using the manipulation check questions from Study 2 (did the graph show rapid vs. slow change in men's roles?) and Study 3 (did the graph portray men as becoming family- vs. career-oriented?).

3.5.1.3 Measures

3.5.1.3.1 Career ambition measure

We measured career ambition using a 12 item scale ($\alpha = .89$, Appendix 4) we adapted by combining questions from Desrochers and Dahir's (2000) Professional Ambition Scale and Cassidy and Lynn's (1989) Status aspiration subscale of Achievement Motivation Scale (e.g., "I have ambitious career goals"). Participants indicated their agreement with each item on a scale

⁹ We hypothesized that women with more traditional gender role beliefs might also exhibit weaker effects of our manipulation. We found no evidence that this measure moderated effects and thus do not summarize those data here.

from 1 (strongly disagree) to 9 (strongly agree). These 12 items were found to be the most reliable based on a pilot test with a sample of 60 undergraduates.

3.5.2 Results and discussion

3.5.2.1 Manipulation check analyses

A series of independent samples *t*-tests confirmed that participants in this study accurately recalled the graphs they had seen. Women in the rapid change condition were more likely to recall the graph as saying that men's roles are changing more rapidly ($M = 4.95$) than were women in the slow change condition ($M = 1.85$), $t(107) = 12.85$, $p < .001$, $d = 2.52$, and they correctly recalled the graph suggesting that men are becoming more family-oriented in the rapid change condition ($M = 1.72$) compared to the slow change condition ($M = 2.79$), $t(108) = -4.74$, $p < .001$, $d = -.90$ (see Table 3.1).¹⁰

As in previous studies, there was also evidence that women internalized this normative information into their personal beliefs. Women in the rapid change condition reported a stronger belief that men are becoming more family-oriented ($M = 3.12$) than did women in the slow

¹⁰ An unexpected ambition x condition interaction on both graph recall measures suggested weaker recall effects for highly as compared to less ambitious women. However this same interaction did not occur on the measure of beliefs in men's changing roles and should only make it more difficult to test the prediction that highly ambitious women show a stronger complementarity effect in response to the manipulation.

change condition ($M = 3.67$), $t(112) = -2.19$, $p = .03$, $d = -.41$. This measure of personal belief was sensibly related to participants' recollections of what the graph had said, $r = .34$, $p < .001$.

3.5.2.2 Effects on possible selves

3.5.2.2.1 Descriptives

Again, our recruitment criteria ensured that 100% of women in the sample planned to marry and have children (two children on average). The majority of participants planned to obtain a graduate degree (61%) and for their partners to obtain a graduate degree (42%) in the next 15 years. They expected to earn between \$70-80,000 a year personally, and \$140-150,000 a year combined with a partner. Women in this sample anticipated working an average of 35.32 hours per week ($SD = 10.50$ hours) outside the home, with the majority of participants (55%) expecting to work 40 hours or more per week. Lastly, participants were, on average, highly career ambitious ($M = 6.90$, $SD = 1.20$), significantly more than the scale midpoint, $t(113) = 16.84$, $p < .001$. None of these variables were affected by our manipulation, all $ps > .27$.

3.5.2.2.2 Moderation analyses on future roles

To examine whether women's career ambition moderated the effect of condition on their possible selves, we submitted the dummy coded condition variable (0 = slow increase; 1 = rapid increase), the standardized ambition variable, and their interaction term to a moderated regression analysis predicting likelihood of becoming a breadwinner using Hayes' (2012) PROCESS macro for SPSS. The analysis yielded a marginally significant interaction, $\beta = .39$, $t(110) = -1.70$, $p = .09$, $\Delta R^2 = .02$ (see Figure 3.4). Unexpectedly, the main effect of condition was not significant in this study, $\beta = .14$, $t(113) = .60$, $p = .55$, $d = .13$ (see Table 3.2), and there was no main effect of career ambition, $\beta = .19$, $t(113) = .121$, $p = .23$. Although the predicted

interaction was only marginally significant, simple slopes analyses revealed that, as expected, higher career ambition was related to imagining oneself as more likely to become a breadwinner when women were primed to believe in a rapid change in men's roles, $\beta = .58, p < .001$, but this relationship became nonsignificant for those primed to believe that men's roles are changing slowly, $\beta = .19, p = .23$. Furthermore, although neither simple slope of condition was significant, the effect was in the predicted direction, and of similar magnitude as in prior studies, among women high in career ambition (+1 SD from the mean), $\beta = .53, p = .11$; but was much smaller and reversed among women low in career ambition (-1 SD from the mean), $\beta = -.25, p = .44$.

There were no significant main or interactive effects when we ran the same moderated regression analysis using the caregiver outcome measure, all $ps > .20$.

3.5.2.2.3 Moderation analyses on concrete tasks

The same moderated regression analysis as above was used to predict the percentage of time women anticipated spending at work, and doing childcare and housework, separately. There was a sensible, yet marginal, main effect of career ambition predicting women's expected amount of time at work, $\beta = .23, t(113) = 1.82, p = .07$ (see Table 3.3). No other main or interactive effects emerged for women's expected involvement in caring for their children, $ps > .16$. We will now turn to examining these patterns across samples in order to draw more firm conclusions.

3.6 Meta-analysis across studies

As we have described, several of the studies reported here were run before recent discussions of the need for larger samples to estimate effects. To gain a more precise estimate of the complementarity effect, we meta-analyzed the breadwinner and the caregiver effects, as well as participants' anticipated time spent working and doing childcare tasks, found across the four

studies using Cumming's (2013) meta-analysis module in the Exploratory Software for Confidence Intervals, using a random effects model (as suggested by Lakens, 2015). In studies with more than two conditions, we selected the effect size between the two groups that we had *a priori* predicted to observe the largest difference between means on the key dependent measures (see Table 1 for further comparison details).

The total number of participants across the four samples in these focal conditions was $N = 272$ ($n = 136$ participants in each condition). The results of the meta-analyses on the main effect of condition yielded an average mean difference of $d = .48$, $CI_{.95} [.16, .80]$ on the likelihood of becoming the primary breadwinner (see Figure 3.5). Such an effect size is considered a medium sized effect, and meaningful both in conceptual guidelines (Cohen, 1988) and in past quantitative summaries of effects in social psychology (Richard, Bond, & Stokes-Zoota, 2003). Importantly, the average estimated effect is reduced but remains statistically significant even when we include all participants in the sample (i.e., those who were excluded for not wanting a partner/children), $d = .38$, $CI_{.95} [.15, .61]$.

The estimated effect size for the likelihood of becoming the primary caregiver was $d = -.26$, $CI_{.95} [-.50, -.03]$, which suggests a smaller but still meaningful effect (see Figure 3.6). Again, the average effect size was reduced but still significant, when analyses include women who do not expect to have partners and/or children, $d = -.22$, $CI_{.95} [-.45, -.01]$. These findings suggest that each individual study may have been underpowered to detect the small effect that information about men's roles can have on women's anticipated caregiving role. Although we are hesitant to draw equally firm conclusions for the caregiver effects as for the breadwinner effects, it seems likely that, across four studies using different methods varying in strength of manipulation, providing women with information about the degree to which men's roles are

changing rapidly versus slowly does indeed lead to a small to moderate difference in their own imagined breadwinning (and caregiving) roles for the future.

In meta-analyzing the findings for the concrete task measures across all four studies, we found a similarly small average estimated effect for women's anticipated time spent doing childcare tasks, $d = -.26$, $CI_{.95} [-.50, -.03]$ (see Figure 3.8), but a nonsignificant effect for women's anticipated time spent working, $d = .11$, $CI_{.95} [-.31, .52]$ (see Figure 3.7). These findings suggest that, indeed, our manipulation appears to be stronger when women are envisioning their abstract future roles as breadwinner and caregiver within a romantic partnership, compared to their day-to-day future tasks. However, the fact that the average effect size of anticipated time spent caring for children is so similar to women's anticipated likelihood of becoming primary caregivers implies that, to some degree, women are internalizing our manipulation about men taking on more of the caregiving responsibilities in the future – and this is leading them to anticipate spending less time in that role and on such tasks.

3.7 General discussion

The current paper describes four studies testing the hypothesis that young women's expectations of their future roles are uniquely tied to their perceptions of what roles they could expect their potential partners to take on. The four studies presented here suggest that women's beliefs about the likelihood that their future life will break the mold of traditional gender roles is, complementarily, tied to their expectations of men's own changing gender roles. Women who are led to expect that men are increasingly willing to take on a substantial portion of childcare and household duties envision a less gender-stereotypical future for themselves. Studies 1-3 showed that priming women to think about men as primary caregivers, either through exemplars or normative trend information, could lead women to more readily envision themselves

becoming the primary economic providers of their future families. Conversely, if primed to believe that men are very slow to take up caregiving roles in the family, women themselves expected a more traditional future where they would be much more likely to be the primary caregiver of their future family than the primary breadwinner. It's worth noting that these effects were found with samples of women where the majority expect to earn a graduate degree and work full time. Taken together, these studies provide the first causal evidence that women's expected future roles, and especially their involvement in economic providing, are complementary to what they believe men's expected roles will be. Such findings are in line those reported in Chapter 2, showing that grade-school-aged girls' aspired to less female-stereotypic careers when their fathers reported contributing more to the childcare and housework (Croft, Schmader, Block, & Baron, 2014).

There are several plausible explanations for this dependency of women's future roles on their expectations for men. One possibility is that women who are primed with information about men's increasing interest in caregiving are simply responding to a realistic need to fill the role of breadwinner in the family. Perhaps women primed with the idea of stay-at-home-dads simply surmise that they will be required to take care of the monetary needs of the family. We suspect that this is not the best explanation for complementarity effects for a few reasons. First, the manipulation of changing roles had a markedly smaller effect on women's expectations of caregiving compared to breadwinning, and these two measures were at best weakly related. This suggests that women's increased likelihood of becoming a breadwinner is not directly the result of a decreased likelihood of being the primary caregiver. Secondly, whereas the above-described reasoning might lead us to expect all women, regardless of their own ambitions, to show this

same complementary effect if they are forced to earn more for the family, we instead found some evidence that moderation by career ambition might exist.

Thus, in contrast to the idea that women feel *forced* to fill the breadwinning role for their family, these findings instead suggest that women feel *enabled* to pursue this non-traditional role as a more work-oriented breadwinner when primed to think that men might take up caregiving roles in the family. Specifically, the results in Study 4 provide some evidence that information about men's changing roles have their largest effect with more career ambitious women.

Although this interaction was only marginally significant, the size of the complementary effect was larger and in the predicted direction among the 59 women above the median in career ambition ($d = .42$) compared to the 55 women below the median ($d = -.20$), women who are arguably more like the audience that Sheryl Sandberg is targeting with her book *Lean In*. Put another way, the manipulation of men's changing roles tended to alter the relationship of women's ambition to their anticipation of becoming a breadwinner. This relationship was strong and significant when women were primed to think that men might begin to embrace caregiving roles, but was weaker and non-significant when primed to think that men's roles are changing very slowly. This pattern leads us to propose that as expectations of men's gender roles truly begin to change, those women who are motivated to pursue a career in the first place might feel freer to do so. That said, this pattern should be replicated in a larger sample.

Although our primary focus was on women's more abstract vision of their future roles, these studies also assessed their concrete estimates of time on tasks related to those roles. We had some belief that changing perceptions of men's roles might have a stronger effect on abstract notions of possible selves than on concrete estimates of time. Effects on these time estimates did vary more from study to study, perhaps because the meta-analysis revealed those effects to be

relatively small. However, the meta-analysis suggested some interesting patterns. Across the studies, when women believe men's roles are changing rapidly, their greater likelihood of becoming the breadwinner does not seem to translate into working longer hours, but they exhibit a similarly sized smaller reduction in being the primary caregiver and time spent on caregiving tasks. Taken together, this pattern might suggest that men's changing gender roles could potentially expand women's possible selves to provide greater balance between breadwinning and caregiving roles, and reduce the anticipated second shift so that women who expect to work full-time no longer expect to also shoulder a disproportionate amount of childcare responsibilities.

3.7.1 Possible mechanisms underlying complementarity effects

Changing perceptions of men's roles might free up women to pursue their career ambitions in several ways. One explanation focuses on a possible reduction of work-family conflict that a change in men's roles could provide, while a second explanation focuses on the possibility that an observed change in men's roles could signal to women that broadly defined gender expectations have also shifted. First, it is plausible that an increase in men's participation in the domestic sphere would lead women to believe that a possible future partner is more likely to participate in household chores himself. To date, many women feel the constraints that their family life puts on their career advancement more strongly than do men (Hochschild & Machung, 2012). Thus, women's expectations of a more involved partner could reduce potential career-family conflict and free up women's resources to dedicate to breadwinning. We did include a rough measure of this mechanism in Study 4 but were unable to get reliable traction on women's anticipated conflict experiences. Future research is needed to determine whether college-aged women actually do forecast the tension they might experience between work and

family responsibilities. Then additional research could test this mechanism more formally by manipulating women's expectations of career-family conflict and/or testing a measure of anticipated conflict as a mediator of complementarity effects.

Alternatively, it is possible that being presented with evidence of counter-stereotypical male roles made women feel more comfortable with being counter-stereotypical themselves. In line with this reasoning, signaling to women that men's roles are changing may be a powerful indicator that traditional gender norms are breaking down, more generally. In the case of complementarity, women could be perceiving our manipulations as representative indicators of the degree to which stereotypes about men are becoming malleable. From there, women's assumptions about what their own potential romantic partners will be like reflects broader systemic change. Future research could examine this explanation by simply asking participants about their stereotypic perceptions of men (and women) in 15 years, and then testing which of these is a better predictor of change in women's anticipated roles.

3.7.2 Implications of complementarity: What makes these studies novel and important?

Regardless of what mechanisms drive the complementarity effect, we maintain that the observed complementarity between men and women's role expectations has important implications for women's career paths. Our findings are particularly interesting in light of the often discussed phenomenon that women tend to "leave before they leave" – the observation that young women often choose to opt out of demanding career tracks before there is the realistic need to do so because of a family (Sandberg, 2013). Recent research suggests, for example, that while men and women see leadership positions as similarly attainable, women perceive more issues with taking on such high-powered careers (Gino, Wilmut, & Brooks, 2015). Specifically, women rate taking a promotion less desirable than do men, to the degree that they expect more

negative outcomes, such as time constraints and career-family conflict. Findings like these suggest that women are uniquely worried about the downsides of being primarily work-focused and might elect not to pursue leadership and management roles in the first place.

We propose that complementarity processes could set off a chain reaction that ultimately contributes to women's underrepresentation in leadership and management positions. Our findings indicate that undergraduate women are relying on complementary stereotypes about men and women when envisioning their futures, long before there is a practical need to negotiate the trade-offs of career and home life with a partner. Perceptions that men's roles remain stagnant and traditional led these women to see a career-focused lifestyle as a breadwinner as less likely. Because these women seem to be making these inferences about their future roles in the absence of any concrete responsibility negotiations, the effects of complementary gender roles might have implications for their current behaviors, motivations, and decisions. For instance, if a woman stereotypically expects men to be breadwinners, she might expect herself to fill a complementary role in the household and therefore (consciously or not) follow a lower paying career trajectory (e.g., passing on leadership and promotion opportunities) while still in the early stages of her career, prior to having children or even a long-term partner. Future studies using longitudinal designs could explore this possibility more systematically.

3.7.3 Limitations and future directions

Although complementarity effects on women's breadwinning expectations appeared robust in our studies, we acknowledge that important questions remain. One limitation of the current set of studies is the reliance on a manipulation that is very focused on men becoming stay-at-home-dads. As discussed in the introduction, it is becoming increasingly common for contemporary couples and families to favor distributing the workload (both paid and unpaid)

equally between partners. Whether or not this preferred equal division of labor exists in practice is a separate issue, but future research would add value by investigating the downstream complementarity consequences of expectations of equality in a romantic partnership. Study 1 of this paper hints at the possibility that telling women about men's proclivity to balance career and family responsibilities is not much different from telling them about traditional, career-oriented men. On a related note, the key measures we used in this study (likelihood of becoming primary breadwinner and caregiver) could be preventing more nuanced effects from emerging. Specifically, future studies could employ ratings of participants expected degrees of breadwinning and caregiving relative to a future partner – thereby giving them the option to select that both partners will contribute equally (this was missing from the current paradigm).

A second limitation of these complementarity studies is the degree to which these findings will or will not generalize beyond our specific sample demographics. Specifically, the majority of our studies were run prior to a time when sampling norms led researchers to recruit a much larger number of participants per condition. In an effort to respond to this particular limitation, we have provided all relevant study materials in the hopes that other researchers will replicate our findings, and we meta-analyzed results across studies to gain more reliable estimates of the average effect sizes of complementarity. Moreover, our samples consisted of particularly ambitious and highly educated women, but women (and couples) with lower socioeconomic status must also contend with the *second shift* and complementary gender stereotypes. Because of our restricted sample demographics, however, we cannot be certain that these types of patterns would exist beyond women high in socioeconomic status. The results of Study 4 indicate that complementarity restrictions are particularly relevant for ambitious women,

but that is not to say women from various backgrounds are not similarly constrained by men's lack of involvement in childcare. Future studies should examine these questions more directly.

In conclusion, the studies presented here support the complementarity hypothesis – the proposition that the rigidity of men's roles can place constraints on women's freedom to step into non-traditional roles within heterosexual couples. These patterns suggest that women's stereotypes about men's roles in the *future* may constrain the decisions they are making in the *present*. To extent that women believe that men continue to stick to traditional breadwinning roles, they may feel constrained from considering such roles for themselves. At the same time, our data also suggest that as men's roles are starting to change, women might become more empowered to pursue roles that have traditionally been occupied by men.

Table 3.1. Manipulation check results for all studies, broken down by attention checks (recall of manipulation about men's roles) and personal beliefs about men's roles.

Study	Conditions	n	Attention check anchors	Mean (sd) Attention	<i>Cohen's d</i> Attention	Personal beliefs anchors	Mean (sd) Beliefs	<i>Cohen's d</i> Beliefs	
1	family	24	1 (family-oriented);	3.23 (0.55)	-3.40***	---	---	---	
	career	25	4 (balanced);	5.17 (0.59)					
	balanced	24	7 (career-oriented)	4.08 (0.55)					
2	rapid change	17	1 (very slowly) to	5.82 (1.33)	2.25***	1 (completely disagree) to 7 (completely agree)	5.24 (1.20)	.85*	
	slow change	16	7 (very rapidly)	2.69 (1.45)			4.00 (1.67)		
3				2.19 (1.39)	-.97***	1 (more family focus) to 7 (more career focus); 4 = staying the same	3.25 (1.23)	-.46*	
	Rapid change	36	Same as above	3.68 (1.66)					
	Slow change	40							
	control	45					---		3.87 (1.67)
4	rapid change	59	Same as above	1.72 (1.25)	-.90***	Same as above	3.12 (1.27)	-.41*	
	slow change	55		2.79 (1.12)			3.67 (1.43)		

Note: † = $p < .10$; * = $p < .05$; ** = $p < .01$; *** = $p < .001$. Text in **bold** denotes comparison groups for *Cohen's d* calculations. All *Cohen's d* were calculated using <http://www.uccs.edu/~lbecker/>.

Table 3.2. Descriptive statistics and estimates of effect size for future role measures in all studies.

Study	Conditions	n (with exclusions after Study 1)	Means (sd) Provider	<i>Cohen's d</i> Provider	Means (sd) Caregiver	<i>Cohen's d</i> Caregiver
1	family	24	3.25 (1.29)	.64	3.58 (1.71)	-.33
	career	25	2.36 (1.50)		4.12 (1.48)	
	balanced	24	2.25 (1.45)		3.33 (1.83)	
2	rapid change	17	3.71 (0.85)	.90	4.29 (0.59)	-.24
	slow change	16	2.75 (1.24)		4.50 (1.10)	
3	rapid change	36	3.28 (0.88)	.58	4.08 (0.87)	-.44
	slow change	40	2.65 (1.27)		4.55 (1.22)	
	control	45	2.91 (1.17)		3.96 (1.22)	
4	rapid change	59	2.93 (1.29)	.13 [†]	4.07 (1.19)	-.13
	slow change	55	2.76 (1.26)		4.22 (1.05)	

Note: Text in **bold** denotes comparison groups for *Cohen's d* calculations. All *Cohen's d* calculated using <http://www.uccs.edu/~lbecker/>. [†] Given the interaction with career ambition in this study, note that the effect sizes of the manipulation are higher among the half of sample that is above the median in ambition ($Md = 7.08$, $d_{provider} = .42$; $d_{caregiver} = -.42$) compared to those below the median in ambition ($d_{provider} = .20$; $d_{caregiver} = -.20$).

Table 3.3. Descriptive statistics and estimates of effect size for concrete task measures in all studies.

Study	Conditions	n (with exclusions after Study 1)	Means (sd) Time Working	<i>Cohen's d</i> Time Working	Means (sd) Time Caregiving	<i>Cohen's d</i> Time Caregiving
1	family	24	-.21 (.98)	-.39	-.01 (.94)	-.12
	career	25	.16 (.90)		.10 (.89)	
	balanced	24	-.07 (1.04)		-.05 (.65)	
2	rapid change	17	.02 (.81)	.12	-.20 (.79)	-.64
	slow change	16	-.08 (.85)		.33 (.86)	
3	rapid change	36	.20 (.71)	.64**	-.04 (.80)	-.20
	slow change	40	-.35 (.98)		.12 (.76)	
	control	45	.15 (.75)		-.09 (.73)	
4	rapid change	59	.002 (1.06)	.01	-.12 (.91)	-.27
	slow change	55	-.003 (.94)		.14 (1.08)	

Note: Text in **bold** denotes comparison groups for *Cohen's d* calculations. All *Cohen's d* calculated using <http://www.uccs.edu/~lbecker/>.

Table 3.4. Correlations between anticipated future roles and concrete task measures for all studies.

	Study 1	Study 2	Study 3	Study 4
Primary breadwinner and primary caregiver	-.08	-.01	-.25**	-.04
Primary breadwinner and anticipated time working	.03	.42*	.40***	.36***
Primary breadwinner and time doing childcare tasks	.02	-.42*	-.30**	-.08
Primary caregiver and time working	-.14	.30†	-.29**	-.21*
Primary caregiver and time doing childcare tasks	.40**	-.01	.21*	.10
Anticipated time working and time doing childcare tasks	-.46***	-.47**	-.39***	-.09

Note: † = $p < .10$, * = $p < .05$, ** = $p < .01$, *** = $p < .001$

Figure 3.1. Study 1: Women’s expected likelihood of becoming the primary economic provider and primary caregiver for their families, 15 years in the future.

Figure 3.2. Study 2: Women’s expected likelihood of becoming the primary economic provider and primary caregiver for their families, 15 years in the future.

Figure 3.3. Study 3: Women's expected likelihood of becoming the primary economic provider and primary caregiver for their families, 15 years in the future.

Figure 3.4. Study 4: Women’s expected likelihood of becoming the primary economic provider, moderated by individual differences in their degrees of career ambition.

Figure 3.5. Meta-analysis: Average estimated effect size of anticipated likelihood of becoming primary breadwinner as a function of men's roles.

Figure 3.6. Meta-analysis: Average estimated effect size of anticipated likelihood of becoming primary caregiver as a function of men's roles.

Figure 3.7. Meta-analysis: Average estimated effect size of anticipated time spent working as a function of men's roles.

Figure 3.8. Meta-analysis: Average estimated effect size of anticipated time spent doing childcare tasks as a function of men's roles.

4 Chapter: The attractiveness of communal men

4.1 Overview of studies

In the previous two chapters, I have presented empirical evidence supporting a complementarity hypothesis, wherein girls and women appear to be constrained in thinking about their own future roles by their paternal models (Chapter 2) or stereotypic expectations (Chapter 3) of men's involvement in caregiving. Grounded in social role theory (Eagly & Steffen, 1984), the complementarity hypothesis posits that as women begin to see men becoming more communal, women themselves should become more agentic, in complement to men's changing roles. We speculate that one implication of complementarity effects is that, as women begin to think about their own future roles as complementary to men's roles, it might lead them to change their current behaviors, motivations, and preferences. In the current chapter, we further examined this hypothesized consequence of complementarity in the context of women's mate preferences. Specifically, I will describe a series of studies in which we measured whether women find communal men more attractive than agentic men, particularly to the extent that those women have ambitious career goals.

The extensive social psychological literature on mate preferences has revealed somewhat mixed results in predicting what women find attractive. Evolutionary psychologists argue that, due to selective mating strategies rooted in humanity's ancestral past, women should seek men with physically masculine features, who are high in social status and have access to financial resources (e.g., Buss & Schmitt, 1993; Kenrick et al., 1990). Importantly, though, men's trait dominance may predict mating success over and above physically masculine features (Hill et al., 2013). But reasons why heterosexual women prefer masculinity or dominance in their mates are likely partially evolutionary and partly culturally determined (Pisanski & Feinberg, 2013). As

women increase their own levels of status and power, they gain some ability to select partners with traits that can balance tradeoffs that working couples with children face. For example, in countries with greater gender equality, women's higher preference for agentic qualities in men (good financial prospects, high social status, ambition) is reduced (Zentner & Mitura, 2012). Furthermore, in some more egalitarian countries (i.e., Finland, Germany, the United States, and Italy), women are significantly more likely than men to indicate a preference for a mate who is a good cook and housekeeper (Zentner & Mitura, 2012).

Sociocultural theorists, in line with the cross-national findings just described, suggest that women's mate preferences are also dependent upon relevant factors in their current context (Eagly & Wood, 2011; Eastwick et al., 2006; Wood & Eagly, 2000). In reality, women's mate preferences are probably determined by some mix of these two perspectives (Geary, 2010), and the number one desire of both men and women is to find a mate who is warm, kind, and similar to him or herself (Buss, 1989). But although this prior research provides some evidence that women are generally interested in men who are kind and warm, surprisingly little research has examined what predicts women seeking out a male partner who they specifically see as having the qualities of a good parent. Researchers have theorized that the drive to parent is a fundamental human motive (Kenrick, Griskevicius, Neuberg, & Schaller, 2010), and that individual differences in this core parenting motivation positively predict preferences for a mate with the qualities of a good parent (Buckels et al., 2015). Importantly, this last relationship was not moderated by participants' gender, which supports the similarity prediction (i.e., attraction to those who are similar to the self) one might expect when merely considering individual beliefs and values (as was the goal in Buckels et al., 2015). Our research is unique in that we seek to explore the conditions under which women consider complementary characteristics in their mate

preferences, when thinking about their roles as part of a future romantic dyad, over and above seeking someone with similar attitudes and priorities to their own.

Of particular interest to our hypotheses is evidence that both women and men have been shown to modify their mate preferences in direct response to anticipated changes in their own social roles. For example, one study found that following an experimental manipulation of men's and women's imagined futures as breadwinners or homemakers, all participants, regardless of their gender, responded by increasing their interest in a romantic partner with complementary qualities (Eagly et al., 2009). Thus, we predict that, to contemporary undergraduate women who imagine having both a future career and family, a more communal, nontraditional mate would be more desirable than a primarily agentic, traditional one.

A secondary goal of the current research is to tease apart the unique contribution of complementary effects versus the desire for similarity in women's mate preferences. As reviewed above, a key factor in interpersonal attraction is espousing similar beliefs and values to each other (Acitelli, Kenny, & Weiner, 2001). We expect that women might try to balance both similarity and complementarity motives: one motive is to seek a mate who falls within an acceptable range of being similar to oneself in attitudes and preferences, but another motive is to find a potential partner who will also complement her goals within an interdependent relationship dyad. This prediction is particularly relevant in contemporary society wherein both members of a couple typically work and thus are increasingly negotiating how daily responsibilities are shared within a partnership. Research has shown that, indeed, women are more deliberate and cautious than men when selecting possible mates (Fletcher, Kerr, Li, & Valentine, 2014), because they also have a markedly higher parental investment quotient to consider (Kenrick et al., 1990). Empirically documenting the individual effects of these

motivational predictors of mate preferences could advance our current understanding of the psychological processes by which women choose who to partner up with in the long-term.

Our theorizing implies that a complementarity hypothesis is not at odds with a similarity hypothesis, but rather that these two processes work independently to explain different pieces of the variance in women's mate preferences. On the one hand, women's currently held beliefs, values, and goals should influence their preferences by leading them to seek out a mate with a similar worldview. At the same time, however, we argue that to the degree that women have certain desired roles or aspirations that are either traditional or non-traditional, they are also aware that a future long-term romantic partner should occupy a complementary social role within that dyad. Indeed, other researchers have suggested that the most well-adjusted romantic couples are those paired with similar gender-related attitudes, but who also engage in complementary roles and behaviors (Aube & Koestner, 1995). Our work extends existing findings by examining how the anticipation of complementary roles in 15 years might come into play when women are construing and selecting their ideal romantic partners.

The current research includes three new studies designed to test two main hypotheses: Firstly, among heterosexual university women, are communal men more desirable as potential mates than agentic men? Secondly, what is the unique contribution of considering complementary roles in women's mate preferences, over and above their desiring a mate with similar beliefs as themselves? Finally, we meta-analyzed the effects across the three studies to

more precisely estimate the degree to which the desire to be a future breadwinner and/or caregiver predicts mate preferences.

4.2 Study 1

4.2.1 Method

4.2.1.1 Participants

One hundred and forty-five heterosexual, undergraduate women completed the study for course credit ($M_{age} = 20.62$, $SD = 2.11$; race/ethnicity data were not collected). Our target sample was 100 participants, but the survey link remained open through the end of the semester and therefore included more participants.

4.2.1.2 Procedure

The study was completed through an online survey. All participants were first asked to provide their demographic information, rate their interest in a list of various possible careers, and report their career goals and personal prioritization of work vs. family. After answering these questions, participants were given the following instruction: “We would now like you to imagine what your life is going to be like in 15 years. Please take the next few moments to really think about and visualize your future life (15 years down the road). To help you in this activity we have provided some questions to guide your thoughts. Please answer the following questions indicating what will MOST LIKELY be the case for you.” Participants were required to confirm that they had read and understood the instructions before proceeding to the questions about their future, possible-selves. Finally, participants were instructed to answer a set of questions measuring their current preferences and beliefs, such as what qualities they value and prioritize

in a long-term potential partner, how desirable they found three prototypical male exemplars,¹¹ and their attitudes towards sexual behavior and gender roles. All participants were required to come to the lab for an in-person debriefing session after completing the online study.

4.2.1.3 Measures

4.2.1.3.1 Demographics

Participants reported their age, gender, year in university (1 to 5+), major and the highest level of education they plan to complete (1 = some high school or less, 2 = high school diploma or equivalent, 3 = some college/university, 4 = college diploma, 5 = university diploma, 6 = some graduate/professional school, 7 = graduate/professional degree).

4.2.1.3.2 Predictor variables

Participants responded to several questions about what they imagine their lives will be like 15 years in the future. Embedded among these questions were our two primary predictor variables: participants' self-reported likelihood of becoming the *primary caregiver* and the *primary provider* of their future families, as indicated by their response on a 1 (not likely) to 7 (very likely) scale for each item separately. As part of this larger questionnaire, women also reported their personal *prioritizations of family versus career goals* based on an aggregate of

¹¹ Exemplar stimuli were the same career-, family-oriented, and balanced men from Chapter 3, Study 1. Importantly, pilot data, based on ratings from that sample, revealed no differences in the ratings of the men's physical attractiveness or similarity to themselves, all $ps > .30$. However, of some relevance to our hypotheses, women perceived the career-oriented men ($M = 4.53$) as less attractive as a potential mate for someone of the opposite sex compared to the balanced ($M = 5.36$) or family-oriented men ($M = 5.28$), $F(2, 68) = 3.70$, $p = .03$. Notably, though, the family-oriented men ($M = 3.58$) were also rated as less representative of the average male than the balanced men ($M = 4.23$) but not significantly less representative than the career-oriented men ($M = 3.91$), $F(2, 68) = 3.86$, $p = .03$. The career-oriented and balanced men were viewed as equally representative.

three items used in previous research ($\alpha = .91$; nine-point scale; Durante et al., 2012) where higher scores represent prioritizing career over family. Lastly, we measured individual variation in participants' *traditional gender role beliefs* according to Larsen and Lang's (1988) Traditional/Egalitarian Sex Role Scale (20 items; $\alpha = .91$; e.g., "Ultimately, a woman should submit to her husband's decision.") on a five-point scale where higher scores represent more traditional beliefs. This measure was included as a control variable, given evidence that some within gender variation in mate preferences is predicted by individual differences in gender role beliefs (Eastwick et al., 2006).

4.2.1.3.3 Outcome variables

After providing the information about their envisioned futures, participants rated the extent to which they valued several potential traits in a future partner. There were two traits, in particular, that were central to our hypotheses: *qualities of a good parent* and *financial resources*. Finally, women rated the *mate desirability* of three sample exemplars who were either career-oriented, family-oriented or career-family balanced on a scale from 1 (very undesirable) to 9 (very desirable).

4.2.2 Results and discussion

4.2.2.1 Descriptives and mean differences

Although women in this sample espoused relatively egalitarian gender role beliefs ($M = 2.66$), they tended to prioritize having a family over pursuing a career ($M = 4.25$, where 9 = prioritize career). Also, consistent with traditional gender role stereotypes, women reported a significantly greater expected likelihood of becoming the primary caregiver ($M = 4.02$) than the primary breadwinner of their future families ($M = 2.90$), $t(144) = -6.37$, $p < .001$. But when

rating potential mate characteristics, participants valued qualities of a good parent ($M = 5.70$) significantly more than financial resources ($M = 4.90$), $t(144) = 5.59$, $p < .001$. Similarly, they rated the balanced exemplar as most desirable ($M = 7.35$), followed by the family-oriented exemplar ($M = 6.36$), with the career-oriented exemplar being rated as the least desirable of the three ($M = 5.95$), $F(1, 144) = 77.25$, $p < .001$, as was the case in the pilot study. See Table 4.1 for bivariate correlations among measures.

4.2.2.2 Analytic strategy

Using separate multiple regression analyses, we predicted women's preferred mate qualities and their mate desirability ratings from their gender role beliefs (step 1), work/family prioritization (step 2), and their imagined future roles (likelihood of becoming primary breadwinner and caregiver; (step 3). We will report the results of this analysis for each of five key outcomes: qualities of a good parent, financial resources, desirability of the career-oriented exemplar, desirability of the balanced exemplar, and desirability of the family-oriented exemplar.

4.2.2.3 Main findings

Preferred qualities in a mate. In line with the complementarity hypothesis, we found patterns of association between women's own career goals and the characteristics they preferred in a potential partner (see Table 4.2). Firstly, women's traditional gender role attitudes were unrelated to valuing parenting qualities in a mate, $\beta = -.05$, $p = .56$, but in line with other research on similarity in romantic relationships (Kalmijn, 1994; 1998; Mare, 1991), women's personal prioritization of career above family predicted less valuing of parenting qualities in a mate, $\beta = -.40$, $p < .001$. However, controlling for these traditional beliefs and personal priorities, women who aspired to be the primary provider for their future family placed a higher value on

qualities of a good parent in a potential mate, $\beta = .26, p = .001$, which was unrelated to their likelihood of becoming the primary caregiver, $\beta = .08, p = .35$. In a similar vein, and again controlling for traditional beliefs, $\beta = .21, p = .01$, and personal priorities, $\beta = -.002, p = .98$, women who anticipated being the primary breadwinner also placed significantly less value on financial resources in a potential mate, $\beta = -.19, p = .04$, but there was no association between that and likelihood of becoming primary caregiver, $\beta = .07, p = .40$.

Desirability of exemplars. The same analysis was repeated predicting women's rated preferences for the family, balanced, and career-oriented men (see Table 4.3). Results revealed that, controlling for traditional beliefs and personal priorities, women who imagined themselves as more likely to be the primary breadwinner rated the family-oriented man as more highly desirable. Patterns for the balanced exemplar were similar to the family-oriented exemplar, albeit not as strong, and there was no association between the predictor variables and ratings of the career-oriented exemplar (see Table 4.3).

In order to directly test whether breadwinning women preferred a family-oriented exemplar over a career-oriented exemplar, we computed a difference score subtracting ratings of the career exemplar from the family exemplar (higher scores represent a preference for the family exemplar). Using the same regression model to predict this relative preference, we found that, controlling for beliefs and personal priorities, women who envision becoming the primary breadwinner have a stronger preference for the family-oriented exemplar over the career-oriented exemplar (see Table 4.4).

These relationships provided initial evidence that complementarity may have implications extending to the mate preferences of women with more career-focused aspirations. After controlling for possible effects of gender role attitudes or seeking a partner with similar

priorities, women who envisioned a breadwinning role for themselves were more attracted to family-oriented men with parenting skills. However, the correlational nature of these data mean that we cannot rule out the alternative explanation that perhaps women who value qualities of a good parent and find family-oriented men particularly attractive might simply have more ambitious career goals that motivated their expectation of being a breadwinner.

In the next study, we aimed to replicate these patterns and also broaden our possible interpretations. Specifically, the breadwinner variable is inherently measuring women's anticipated roles within a future couple dynamic and relates to those negotiation trade-offs. We were interested in exploring whether the broader construct of women's career ambition might also predict their preferences for a less traditional mate. Thus, Study 2 is a replication and extension of this study, which includes a measure of women's career ambition.

4.3 Study 2

4.3.1 Method

4.3.1.1 Participants

Participants were 95 heterosexual undergraduate women who completed the study online for course credit ($M_{age} = 20.75$, $SD = 2.83$; race/ethnicity data were not collected).

4.3.1.2 Procedure and measures

This study was largely identical to Study 1, with one exception. Just prior to evaluating desired qualities in a potential mate, participants responded to a ten-item measure assessing their

career ambition (the same measure used in Chapter 3, Study 4 of this dissertation; $\alpha = .91$). All other measures were identical to those assessed in the prior study.

4.3.2 Results and discussion

4.3.2.1 Descriptives and mean differences

Similar to participants in Study 1, these women generally endorsed egalitarian gender role beliefs ($M = 2.74$), however women in this study gave high priority to their careers over families, on average ($M = 6.22$). Correspondingly, they also reported fairly ambitious career goals ($M = 6.63$), that were significantly higher than the scale midpoint of 5, $t(94) = 12.22, p < .001$. However, women in this sample were still more likely to expect to be the primary caregiver ($M = 3.95$) than the primary breadwinner in their future family ($M = 3.09$), $t(93) = -.23, p < .001$. As in Study 1, participants preferred a mate to have qualities of a good parent ($M = 5.87$) significantly more than financial resources ($M = 4.95$), $t(94) = 5.90, p < .001$. They also significantly preferred the balanced exemplar ($M = 7.05$) over both the family- ($M = 6.01$) and career-oriented exemplars ($M = 6.02$, $F(1, 94) = 53.00, p < .001$), but in this study those two exemplars were rated as similarly desirable.

Correlations between career ambition and all other measures can be seen in Table 4.5. Our measure of career ambition related sensibly to the various other measures included in the study, and shared a striking degree of overlap with the scale of prioritization between family and career ($r = .91$). Because these two measures were likely tapping into the same psychological

construct, that prevented us from examining career ambition as a separate variable. Instead, we shifted our focus with these data to replicate and validate the patterns from Study 1.

4.3.2.2 Replication analyses

We sought to replicate the same analyses reported in Study 1 using regression models to predict women's preferences for certain traits and certain mates from their gender role beliefs, personal priorities, and possible selves. Results did not completely replicate Study 1.

Preferred qualities in a mate. First, in line with a similarity hypothesis, women who envisioned becoming the primary caregiver were most interested in a mate with parenting qualities, $\beta = .31, p = .003$, but counter to complementarity, the likelihood of becoming the breadwinner did not significantly relate to this outcome as it had in Study 1, $\beta = -.11, p = .29$. Personal priorities were not significantly related to preferences of parenting qualities, $\beta = .13, p = .20$, and traditional gender roles predicted marginally less importance placed on this trait, $\beta = -.17, p = .09$. A preference for a mate with financial resources was most strongly predicted by having more traditional gender role beliefs, $\beta = .32, p = .002$, and was marginally higher for women who prioritize their career, $\beta = .16, p = .10$, but marginally lower for those who expect to be a breadwinner, $\beta = -.19, p = .06$. Surprisingly, there was almost no association at all between the importance of financial resources and the likelihood of becoming primary caregiver, $\beta = .06, p = .57$ (see Table 4.6).

Desirability of Exemplars. Parallel analyses on women's ratings of the exemplars yielded only marginal support for the complementarity hypothesis (see Table 4.7). The family exemplars were most desirable to women with less traditional gender role beliefs, $\beta = -.34, p = .001$. Somewhat in line with the complementarity hypothesis although different from Study 1, women reported a marginally stronger preference for the family-oriented exemplar to the degree that

they prioritized their career over family, $\beta = .18, p = .06$. Neither their likelihood of becoming the primary caregiver, $\beta = -.03, p = .79$, nor the primary breadwinner, $\beta = .15, p = .14$, significantly predicted desirability ratings of the family exemplar, although these relationships were similar in magnitude to those reported in Study 1. None of these variables significantly predicted women's desirability ratings of the balanced exemplar, all $ps > .19$. In line with a similarity hypothesis, only their personal prioritization of career over family, $\beta = .26, p = .01$, significantly predicted more positive ratings for the career exemplar, all other $ps > .28$.

As in Study 1, we computed a difference score between women's desirability ratings of the family and career exemplars (higher scores equal greater preference for family exemplar) to directly compare the two. We observed no clear support for the complementarity hypothesis with this difference score (see Table 4.8). Having less traditional gender role beliefs significantly predicted women preferring the family-oriented exemplar over the career-oriented exemplar, $\beta = -.34, p = .001$. But women's personal prioritizations and their anticipated likelihood of becoming the primary caregiver did not predict a preference for either exemplar, both $ps > .71$. Although not statistically significant, the predictive effect of envisioning becoming the primary breadwinner on preference for the family- over the career-oriented exemplar was in the predicted direction, $\beta = .16, p = .11$. The effect size of this relationship was weaker in magnitude than the same result reported in Study 1 ($\beta = .23$).

Given the inconsistent patterns between Studies 1 and 2, we hesitate to draw firm conclusions based on these data alone. Although the results from Study 1 might be more reliable because the data are based on a larger sample ($N = 145$ vs. $N = 95$), the lack of replication in Study 2 leads us to be skeptical about these patterns. We conducted Study 3 to address this issue, and again test whether the relationships found in Study 1 are indeed reliable. We also created a

more controlled test environment by having participants complete the study in the lab context rather than online.

4.4 Study 3

The purpose of this study was to create a more controlled environment in which to test our hypotheses about the attractiveness of communal men to women who envision a future in which they anticipate trying to balance having a family and a career. Because the first two studies, which were conducted online, yielded mixed results, we sought to create a more ecologically valid paradigm in which participants believed they were involved in a study about online dating. We reasoned that if women were to complete this study while in a mate-selection mindset from the beginning, their ratings of attractiveness of potential mates might more accurately represent their preferences. In addition, we reasoned that perhaps the anticipation of high levels of work-life conflict might be necessary to trigger complementarity in mate preferences. Thus, an original goal of this study was to manipulate anticipated conflict to test it as a moderator. Thus, women in the study were primed to believe that it is either difficult or easy to have a full life at home while also maintaining a successful career. This manipulation, however, had no impact on any of our key outcome variables (even though a manipulation check question immediately following the prime suggested it did change women's anticipated conflict), thus I have collapsed across the two conditions and will instead replicate the same analyses reported in Studies 1 and 2.

4.4.1 Method

4.4.1.1 Participants

Heterosexual female undergraduates under 25 years old were invited to participate in this lab study for course credit. We initially collected data from 120 women, and data from 14 of

them were excluded from analyses ($n = 8$ did not intend to have a spouse/partner; $n = 1$ did not intend to have children; $n = 5$ experienced a technological error and were shown the same partner match profile twice). Our final sample was $N = 106$ (61% East Asian/16% Caucasian; $M_{age} = 19.39$, $SD = 1.39$).

4.4.1.2 Procedure

Participants had signed up to complete a study about a new online dating service on campus that would enable “students and alumni to connect with each other and form long lasting relationships”. Upon arriving at the lab, participants were directed to an individual cubicle where they answered a battery of questions on the computer. These initial questions would ostensibly be used by the researchers to create a personal profile for each participant, which would then be entered into an algorithm to provide them with their male partner matches. Embedded within the questionnaire were our key predictor variables (gender role beliefs, prioritization of career over family, and anticipated likelihood of becoming the primary breadwinner and caregiver of their future family), along with other items directly borrowed from real online dating websites.

After answering all the questions, participants viewed a brief article about career-family conflict. The computer randomly assigned participants to one of two conditions: *high* vs. *low conflict*. To activate a greater sense of anticipated conflict in half of our participants, they were shown a bogus statistic and graph stating that most women report a high degree of conflict between work and family roles. The other half of participants saw the same statistic and graph, but the groups were switched such that most women report a low degree of conflict (see Appendix C for screenshots of each condition). To help women internalize the manipulation, they subsequently responded to a prompt about their own anticipated conflict – women in the *high conflict condition* were asked to write a few sentences about “the difficulties they might

face in the future when trying to manage their work and household responsibilities”, and women in the *low conflict condition* were asked to write about the “benefits they might gain in the future...”. Next, everyone completed an eight-item measure of anticipated career-family conflict as a manipulation check, and then they provided their ratings of the importance of various potential mate characteristics (from Studies 1 & 2). At this point, a message popped up on the screen, notifying participants that their potential partner matches were being retrieved.

Following a brief (intentional) delay, all participants were provided with six photos of potential matches. To ensure that the target people for the eventual ratings of interest would be personally appealing, participants were first instructed to select the top three candidates they would like to receive more information about, based on physical appearance alone. Once the top three men were selected, participants were given brief descriptions of each one (similar to the exemplar descriptions in Studies 1 & 2) depicted as being either career-oriented, family-oriented, or career-family balanced (in randomized order, on separate pages – ostensibly in answer to a question about his future plans). Finally, participants answered a set of questions about the attractiveness of each candidate, ranked the men in order of preference, and were debriefed about the study.

4.4.1.3 Measures

4.4.1.3.1 Attractiveness ratings

After reading the description of each potential partner’s future plans (i.e., career, family, balanced), participants responded to a set of eight questions rating each man’s attractiveness as a partner ($\alpha_{career} = .95$; $\alpha_{family} = .95$; $\alpha_{balanced} = .95$). Questions included items such as, “Do you find it easy to imagine a future with this person?” and “How interested are you in meeting this

person?”. Ratings were given on a Likert-type scale from 1 (not at all) to 9 (very much). For the full questionnaire, see Appendix C.

4.4.2 Results and discussion

4.4.2.1 Descriptives and mean differences

Participants in this sample tended toward egalitarianism in their gender role beliefs ($M = 2.62$), and reported fairly high amounts of career ambition ($M = 7.21$), but also slightly prioritized family over career ($M = 3.89$), on average. They anticipated a significantly greater likelihood of becoming the primary caregiver ($M = 5.07$) than the primary breadwinner ($M = 3.77$) in the future, $t(105) = -8.06, p < .001$. As before, qualities of a good parent ($M = 6.45$) were rated as significantly more important than financial resources ($M = 5.46$), $t(105) = 7.52, p < .001$. Similar to Study 1 (but not Study 2), women in this sample rated the career-oriented man ($M = 4.77$) as significantly less attractive than either the balanced man ($M = 5.16$) or the family-oriented man ($M = 5.15$), $F(1, 105) = 4.64, p = .03$. Lastly, results showed that our manipulation of anticipated career-family conflict led to the expected differences between conditions: Women in the high conflict condition ($M = 5.38$) anticipated significantly more future conflict than women in the low conflict condition ($M = 4.59$), $t(104) = -3.48, p = .001$. However, the manipulation had no significant effects on any of the other predictor or outcome variables, all $ps > .20$. Thus, it will not be included in the analyses below.

Correlations between all measures can be found in Table 4.9.

4.4.2.2 Replication analyses

Preferred qualities in a mate. Unlike Studies 1 and 2, neither anticipating becoming the primary caregiver nor the primary breadwinner significantly predicted desiring a mate with

parenting qualities (see Table 4.10). The variables that most strongly predicted women's reported importance of parenting qualities were being less traditional in their gender role beliefs, and prioritizing family over career, suggesting some role for similarity (see Table 4.10).

Interestingly, however, in this sample the strongest predictor of reduced importance of financial resources in a future mate was the likelihood of becoming the primary breadwinner (see Table 4.10).

Desirability of Exemplars. Once again, parallel analyses on women's desirability ratings of each exemplar yielded no support for the complementarity hypothesis (see Table 4.11). The family-oriented exemplar was rated as less attractive to women who envision becoming the primary caregivers of their own future families, which is somewhat consistent with a complementarity hypothesis, but the effect is small and is the only statistically significant relationship across all individual difference variables predicting desirability ratings (see Table 4.11).

As in Studies 1 and 2, we computed a difference score between women's desirability ratings of the family and career exemplars (higher scores equal greater preference for family exemplar) to directly compare the two. Again, we observed no clear support for either the complementarity or the similarity hypothesis with this difference score. Preferring a family-oriented man over a career-oriented one was only significantly predicted by having less traditional/more egalitarian gender role beliefs (see Table 4.12).

The data from this study contribute more information to the inconsistent patterns observed previously in Studies 1 and 2. On the one hand, these results indicate that perhaps the relationships between women's anticipated roles and their desirability ratings of non-traditional men from Study 1 were spurious, because we did not ascertain similar effects in either follow-up

sample using the same measures. Although these studies do not provide strong support for our hypothesis that particularly ambitious women will be attracted to non-traditional men, there are a few patterns that are interesting to note. Namely, this study marks the fourth data set (if we include the pilot data to Study 1) in which men who espouse career-family balance are rated as more attractive than traditional, career-oriented men, and the third data set in which family-oriented men are rated as more attractive than career-oriented men. Similarly, women have placed greater importance on a potential mate's qualities of a good parent than his access to financial resources, in all three studies. Overall, then, the data appear to support our hypothesis about contemporary young women preferring communal characteristics in men over key agentic characteristics studied in past mate preference research. The data are less clear, however, when it comes to parsing the variance in mate preferences that is unique to complementary effects, over and above similarity effects.

4.5 Meta-analysis across studies

Similar to Chapter 3, we found it valuable to conduct a meta-analysis of the patterns observed across all three studies in this chapter (total $N = 346$). We compared the regression coefficients (unstandardized B s) resulting from key analyses across studies using the recommendations of Lipsey & Wilson (2001). Data from all the three studies were meta-analyzed to examine women's preference for becoming a future breadwinner and caregiver predicting for each key outcome variable, separately (see Table 4.13 and Table 4.14).

When considered together, the data from these studies form a few sensible patterns, and generally provide support for complementarity (controlling for similarity in personal beliefs and values). With respect to a similarity hypothesis, the only relevant significant effect was evidence that caregiver likelihood predicted the rated importance of parenting qualities in a potential mate

(see Table 4.14). This positive estimated effect indicates that women who themselves anticipate becoming the primary caregiver for future children would like to have a partner who is similarly warm and nurturing.

The meta-analysis provided greater support of women's desire for complementary roles when examining the breadwinner variable as a predictor (Table 4.13). Women who reported a greater anticipated likelihood of becoming the primary breadwinner placed greater importance on qualities of a good parent and less importance on financial resources in a potential mate. Furthermore, the breadwinner likelihood variable predicted a significant preference for a family-oriented mate over a career-oriented mate, and this effect was driven more by these women's dislike of the traditional exemplars (i.e., lower desirability ratings of career-oriented men). This pattern fits with both our own complementarity hypothesis and comparable results of larger-scale, cross-national studies showing that as women's roles expand to include earning greater amounts of money, they no longer need to depend upon men for financial security, and thus rate financial resources as less important in a potential mate (e.g., Zentner & Mitura, 2012).

4.6 General discussion

The purpose of the studies reported here was to examine whether women are more attracted to a hypothetical romantic partner who is primarily communal, rather than agentic as is more traditional and stereotypical of male behavior. Furthermore, we aimed to identify the unique predictive role of complementary processes (vs. similarity) and to test the prediction that women who see themselves becoming primary breadwinners would be most attracted to these family-oriented partners, based on the assumption that they would enable such women to pursue their career goals while simultaneously having a thriving family. Taken together, the data seem to support both hypotheses we tested. Firstly, women in our samples generally preferred

communal men to agentic men – as was evident by women’s ratings of family-oriented, balanced, and career-oriented exemplars and the importance they placed on relevant mate characteristics. Secondly, women’s envisioned likelihood of becoming the primary breadwinners of their future families predicted complementary mate preferences when patterns were examined in aggregate across the three studies. Importantly, these findings emerged when controlling for preferences for similarity in personal beliefs and values, suggesting that a consideration of complementary role division in a partnership is plausible once general worldview agreement has been satisfied in a potential partner.

Although the pattern of results varied across studies, the meta-analyses of regression coefficients indicated overall support for our hypotheses that a complementary mate preference is especially strong for women who anticipate or aspire to hold non-traditional future roles. Specifically, in Study 1, there was evidence that women who envision becoming breadwinners in the future were more attracted to a mate with parenting qualities or who is family-oriented. That pattern was not replicated as strongly in the subsequent studies but it did emerge in the meta-analysis. The aggregate effects from our meta-analysis also suggested that when women imagined themselves as more likely to become breadwinners, they saw less need for a career-oriented mate with access to financial resources. This preference (i.e., lack of interest in traditional men) also meant that these women rated a family-oriented male exemplar as relatively more desirable, in analyses that directly compared the relative attractiveness of the two types of men.

One possibility for the inconsistent findings we obtained in the individual studies is that teasing apart complementary processes from those involved in similarity might be a more difficult task than these paradigms could capture. Despite the fact that these constructs were not

always correlated across our studies, we suspect that, in the abstract, these variables are quite tightly linked. Therefore it is possible that the tools we had at our disposal (i.e., measures and manipulations we used) were simply not fine-tuned enough to capture the nuances of these competing motivations. Future research could test this idea by employing a more automatic measure of women's mate preferences following a similar conflict manipulation. If women's mate preferences are responsive to such complementary processes via less deliberate and controlled channels, we should find that ambitious women in a high conflict condition respond more positively (automatically) to a communal man than women in a low conflict condition.

On a related note, the fact that desirability ratings of communal men were not moderated by individual differences in participants' career ambition might also mean that complementary mate preferences are not easily represented in one's mind, or feasible to explicitly articulate. Indeed, some research on mate selection indicates that people might believe they have certain preferences in a potential partner, but experience a shift in priorities upon being faced with actual mate options to choose from (Eastwick & Finkel, 2008). This is a plausible alternative explanation for our observed patterns, given evidence that people do not often know or cannot articulate why they made a particular decision (Nisbett & Wilson, 1977). This might also help to explain why some of the samples did not replicate the strong prior patterns of desiring similar attitudes and beliefs as potential mates.

The strongest and most consistent finding from the individual studies was that women generally do not appear to (think they) want a traditional, career-focused male partner in the future in comparison to someone who includes more focus on family. The highly successful career-focused exemplar was consistently rated as the least appealing of the three across every sample we collected (as well as the pilot data). Couched in terms of an evolutionary theory of

mate selection, as women start to desire and seek out men who are more egalitarian and willing to take on communal roles, men should become incentivized to fit this ideal. Men who recognize these changing preferences among women will subsequently have a competitive advantage in the dating pool.

Interpreting the results of our studies using a social role theory framework (Eagly & Steffen, 1984), we will conclude by highlighting some key implications of these findings. Our data indicate that, regardless of any individual differences in beliefs or ambition, young women are more attracted to communal men than agentic men. With such a pattern in women's mate preferences, we might wonder whether as men begin to recognize and appreciate that women are seeking partner with these qualities, these qualities will become more common and valued among men. This shift in the priorities and internalizations of men's family roles could subsequently mean their increased involvement in shared domestic responsibilities. In turn, all of these processes could signal to men that their own roles and values need not be as constrained by the traditional gender role stereotypes of high agency and low communion. And, as I have outlined in Chapter 3, an increase in men's domestic involvement could mean less constraints for women's own roles and career pursuits.

Table 4.1. Study 1. Bivariate correlations between measures.

	2	3	4	5	6	7	8	9
1. Traditional gender role beliefs	-.21*	-.22**	.25*	-.05	.21*	.11	-.11	-.09
2. Prioritize career (vs. family)		.34***	-.34***	-.37***	-.05	-.04	-.27**	-.27**
3. Primary breadwinner			-.19*	.12	-.21*	-.23	.06	.08
4. Primary caregiver				.15†	.13	.07	.09	.11
5. Importance of qualities of a good parent					.27**	-.09	.30***	.32***
6. Importance of financial resources						.15†	-.02	-.08
7. Desirability of Career Exemplar							.21*	.19*
8. Desirability of Balanced Exemplar								.54***
9. Desirability of Family Exemplar								

Note: † = $p < .10$; * = $p < .05$; ** = $p < .01$; *** = $p < .001$.

Table 4.2. Study 1. Regression models predicting importance of qualities of a good parent and financial resources in a potential mate.

	Qualities of a Good Parent					Financial Resources				
	β	t	p	ΔR^2	df	β	t	p	ΔR^2	df
Block 1										
Traditional Gender Role Beliefs	-.05	-.59	.56	.002	143	.21	2.61	.01	.05	143
Block 2										
Personal Prioritization of Career (vs. family)	-.40	-5.04	< .001	.15	142	-.002	-.02	.98	< .001	142
Block 3										
Likelihood of becoming primary caregiver	.08	.95	.35	.06	140	.07	.84	.40	.04	140
Likelihood of becoming primary breadwinner	.26	3.24	.001			-.19	-2.12	.04		

Table 4.3. Study 1. Regression models predicting desirability of exemplars.

		Desirability of Family Exemplar				
		β	t	p	ΔR^2	df
Block 1						
	Traditional Gender Role Beliefs	-.09	-1.02	.31	.01	143
Block 2						
	Personal Prioritization of Career (vs. family)	-.30	-3.73	< .001	.09	142
Block 3						
	Likelihood of becoming primary caregiver	.06	.74	.46	.03	140
	Likelihood of becoming primary breadwinner	.18	2.06	.04		
		Desirability of Balanced Exemplar				
		β	t	p	ΔR^2	df
Block 1						
	Traditional Gender Role Beliefs	-.11	-1.37	.17	.01	143
Block 2						
	Personal Prioritization of Career (vs. family)	-.31	-3.78	< .001	.09	142
Block 3						
	Likelihood of becoming primary caregiver	.04	.48	.63	.02	140
	Likelihood of becoming primary breadwinner	.14	1.64	.10		
		Desirability of Career Exemplar				
		β	t	p	ΔR^2	df
Block 1						
	Traditional Gender Role Beliefs	.11	1.30	.20	.01	143
Block 2						
	Personal Prioritization of Career (vs. family)	-.02	-.27	.79	< .001	142
Block 3						
	Likelihood of becoming primary caregiver	.04	.44	.66	.01	140
	Likelihood of becoming primary breadwinner	-.11	-1.24	.22		

Table 4.4. Study 1. Regression models predicting women's preference for a family-oriented exemplar over a career-oriented exemplar (difference score where higher values represent greater desirability of family exemplar).

	Preference for Family Exemplar				
	β	t	p	ΔR^2	df
Block 1					
Traditional Gender Role Beliefs	-.15	-1.82	.07	.02	143
Block 2					
Personal Prioritization of Career (vs. family)	-.24	-2.88	.005	.05	142
Block 3					
Likelihood of becoming primary caregiver	.02	.27	.79	.05	140
Likelihood of becoming primary breadwinner	.23	2.68	.01		

Table 4.5. Study 2. Bivariate correlations between all variables.

	2	3	4	5	6	7	8	9	10
1. Traditional gender role beliefs	-.05	-.09	.13	-.17†	.32**	.11	-.14	-.33**	-.19†
2. Prioritize career (vs. family)		.23*	.17	.14	.15	.26*	.13	.19†	.91***
3. Primary breadwinner			-.09	-.09	-.18†	-.01	-.03	.22*	.26*
4. Primary caregiver				.30**	.15	-.004	.10	-.07	.09
5. Importance of qualities of a good parent					.37***	.07	.29**	.29**	.17
6. Importance of financial resources						.38***	.10	-.004	.16
7. Desirability of Career Exemplar							.38***	.06	.31**
8. Desirability of Balanced Exemplar								.60***	.20†
9. Desirability of Family Exemplar									.21*
10. Career ambition									

Note: † = $p < .10$; * = $p < .05$; ** = $p < .01$; *** = $p < .001$.

Table 4.6. Study 2. Regression models (replication analyses) predicting importance of qualities of a good parent and financial resources in a potential mate.

	Qualities of a Good Parent					Financial Resources				
	β	t	p	ΔR^2	df	β	t	p	ΔR^2	df
Block 1										
Traditional Gender Role Beliefs	-.17	-1.69	.09	.03	92	.32	3.24	.002	.10	92
Block 2										
Personal Prioritization of Career (vs. family)	.13	1.28	.20	.02	91	.16	1.67	.10	.03	91
Block 3										
Likelihood of becoming primary caregiver	.31	3.05	.003	.11	89	.06	.56	.57	.04	89
Likelihood of becoming primary breadwinner	-.11	-1.07	.29			-.19	-1.92	.06		

Table 4.7. Study 2. Regression models (replication analyses) predicting desirability of exemplars.

		Desirability of Family Exemplar				
		β	t	p	ΔR^2	df
Block 1						
	Traditional Gender Role Beliefs	-.34	-3.42	.001	.11	92
Block 2						
	Personal Prioritization of Career (vs. family)	.18	1.89	.06	.03	91
Block 3						
	Likelihood of becoming primary caregiver	-.03	-.27	.79	.02	89
	Likelihood of becoming primary breadwinner	.15	1.49	.14		
		Desirability of Balanced Exemplar				
		β	t	p	ΔR^2	df
Block 1						
	Traditional Gender Role Beliefs	-.14	-1.32	.19	.02	92
Block 2						
	Personal Prioritization of Career (vs. family)	.13	1.21	.23	.02	91
Block 3						
	Likelihood of becoming primary caregiver	.10	.92	.36	.02	89
	Likelihood of becoming primary breadwinner	-.07	-.61	.54		
		Desirability of Career Exemplar				
		β	t	p	ΔR^2	df
Block 1						
	Traditional Gender Role Beliefs	.11	1.09	.28	.01	92
Block 2						
	Personal Prioritization of Career (vs. family)	.26	2.55	.01	.07	91
Block 3						
	Likelihood of becoming primary caregiver	-.08	-.77	.44	.01	89
	Likelihood of becoming primary breadwinner	-.07	-.68	.50		

Table 4.8. Study 2. Regression models (replication analyses) predicting women's preference for a family-oriented exemplar over a career-oriented exemplar.

	Preference for Family Exemplar				
	β	t	p	ΔR^2	df
Block 1					
Traditional Gender Role Beliefs	-.34	-3.42	.001	.11	92
Block 2					
Personal Prioritization of Career (vs. family)	-.04	-.38	.71	.001	91
Block 3					
Likelihood of becoming primary caregiver	.04	.35	.73	.03	89
Likelihood of becoming primary breadwinner	.16	1.61	.11		

Table 4.9. Study 3. Bivariate correlations between all variables.

	2	3	4	5	6	7	8	9	10
1. Traditional gender role beliefs	-.17†	-.12	.14	-.19*	.15	.11	.02	.10	.03
2. Prioritize career (vs. family)		.11	-.40***	-.16†	.11	-.17†	.10	-.08	.22*
3. Primary breadwinner			-.10	.12	-.32**	-.17†	.07	-.06	.06
4. Primary caregiver				.15	.07	.03	-.07	-.15	.02
5. Importance of qualities of a good parent					.22*	-.16	-.11	-.10	.27**
6. Importance of financial resources						.03	-.05	-.11	.39***
7. Desirability of Career Exemplar							.49***	.51***	-.04
8. Desirability of Balanced Exemplar								.52***	.09
9. Desirability of Family Exemplar									.003
10. Career ambition									

Note: † = $p < .10$; * = $p < .05$; ** = $p < .01$; *** = $p < .001$.

Table 4.10. Study 3. Regression models (replication analyses) predicting importance of qualities of a good parent and financial resources in a potential mate.

	Qualities of a Good Parent					Financial Resources				
	β	t	p	ΔR^2	df	β	t	p	ΔR^2	df
Block 1										
Traditional Gender Role Beliefs	-.19	-1.99	.05	.04	104	.15	1.54	.13	.02	104
Block 2										
Personal Prioritization of Career (vs. family)	-.20	-2.10	.04	.04	103	.14	1.40	.16	.02	103
Block 3										
Likelihood of becoming primary caregiver	.13	1.29	.20	.03	101	.11	1.07	.29	.11	101
Likelihood of becoming primary breadwinner	.12	1.28	.20			-.31	-3.38	.001		

Table 4.11. Study 3. Regression models (replication analyses) predicting desirability of exemplars.

		Desirability of Family Exemplar				
		β	t	p	ΔR^2	df
Block 1						
	Traditional Gender Role Beliefs	-.10	-1.02	.31	.01	104
Block 2						
	Personal Prioritization of Career (vs. family)	-.10	-1.04	.30	.01	103
Block 3						
	Likelihood of becoming primary caregiver	-.21	-1.95	.05	.04	101
	Likelihood of becoming primary breadwinner	-.08	-.79	.43		
		Desirability of Balanced Exemplar				
		β	t	p	ΔR^2	df
Block 1						
	Traditional Gender Role Beliefs	.02	.16	.87	< .001	104
Block 2						
	Personal Prioritization of Career (vs. family)	.11	1.07	.29	.01	103
Block 3						
	Likelihood of becoming primary caregiver	-.04	-.36	.72	.01	101
	Likelihood of becoming primary breadwinner	.06	.63	.53		
		Desirability of Career Exemplar				
		β	t	p	ΔR^2	df
Block 1						
	Traditional Gender Role Beliefs	.11	1.17	.25	.01	104
Block 2						
	Personal Prioritization of Career (vs. family)	-.16	-1.60	.11	.02	103
Block 3						
	Likelihood of becoming primary caregiver	-.07	-.63	.53	.02	101
	Likelihood of becoming primary breadwinner	-.15	-1.50	.14		

Table 4.12. Study 3. Regression models (replication analyses) predicting women's preference for a family-oriented exemplar over a career-oriented exemplar.

	Preference for Family Exemplar				
	β	t	p	ΔR^2	df
Block 1					
Traditional Gender Role Beliefs	-.22	-2.25	.03	.05	104
Block 2					
Personal Prioritization of Career (vs. family)	.05	.51	.61	.002	103
Block 3					
Likelihood of becoming primary caregiver	-.15	-1.39	.17	.02	101
Likelihood of becoming primary breadwinner	.07	.68	.50		

Table 4.13. Meta-analysis of breadwinner effect in Chapter 4. Effect size estimates (unstandardized *b* coefficients) for key outcome variables predicted by women's anticipated likelihood of becoming the primary breadwinner of their future family (controlling for gender role beliefs, personal priorities, and likelihood of becoming the primary caregiver).

Outcome Measure	Study 1	Study 2	Study 3	Avg EF [CI ₉₅]	Support for which hypothesis?
Qualities of a good parent	.32*	-.11	.08	.09 [.003, .19]	Complementarity
Financial resources	-.22*	-.21†	-.35**	-.26 [-.38, -.14]	Complementarity
Family exemplar desirability	.29*	.22	-.12	.14 [-.02, .31]	Neither
Balanced exemplar desirability	.21	-.10	.10	.09 [-.08, .25]	Neither
Career exemplar desirability	-.16	-.09	-.23	-.16 [-.31, .001]	Complementarity
Preference for family over career exemplar	.44*	.31	.10	.27 [.08, .46]	Complementarity

Note. Bolded effects are considered statistically significant given that the 95% confidence interval does not include zero.

Note: † = $p < .10$; * = $p < .05$; ** = $p < .01$; *** = $p < .001$.

Table 4.14. Meta-analysis of caregiver effect in Chapter 4. Effect size estimates (unstandardized *b* coefficients) for key outcome variables predicted by women’s anticipated likelihood of becoming the primary caregiver for their future children (controlling for gender role beliefs, personal priorities, and likelihood of becoming the primary breadwinner).

Outcome Measure	Study 1	Study 2	Study 3	Avg EF [CI ₉₅]	Support for which hypothesis?
Qualities of a good parent	.07	.30**	.09	.13 [.04, .22]	Similarity
Financial resources	.07	.06	.13	.08 [-.03, .19]	Neither
Family exemplar desirability	.08	-.04	-.36*	-.03 [-.18, .12]	Neither
Balanced exemplar desirability	.05	.14	-.07	.05 [-.10, .20]	Neither
Career exemplar desirability	.04	-.10	-.11	-.03 [-.17, .12]	Neither
Preference for family over career exemplar	.04	.06	-.25	-.03 [-.21, .15]	Neither

Note. Bolded effects are considered statistically significant given that the 95% confidence interval does not include zero.

Note: † = $p < .10$; * = $p < .05$; ** = $p < .01$; *** = $p < .001$.

5 Chapter: Conclusions about men's roles and women's goals

In this dissertation I have presented three separate lines of research aimed understanding the psychological relationship between gender stereotypes governing men's social roles and how girls and women think about themselves and their own future roles. This research is the first to systematically ask whether and how women might be constrained by the stereotypes governing men's gender roles. Past research has repeatedly shown that stereotypes about women and male-dominated domains contribute to women's continued under-representation in traditionally male roles (e.g., Ceci & Williams, 2011; Cheryan & Plaut, 2010; Diekmann et al., 2010), but no studies have previously examined the degree to which the rigidity of men's changing gender roles might also be perpetuating traditional role adherence. We hypothesized that because men's roles have remained relatively stagnant, compared to women's roles (Croft et al., 2015; England, 2010), there might be complementary constraints placed on women's anticipated likelihood of adopting nontraditional roles in the future. In Chapter 2, we took a developmental approach to examining this hypothesis, by capturing the relationship between fathers' involvement in the traditionally-female domestic sphere and the gender stereotypicality of their grade-school-aged daughters' own career aspirations. Chapter 3 provided a more causal approach to investigating how men's gender role adherence might directly constrain young adult women's possible selves. Finally, we tested one possible implication of gender role complementarity in measuring whether

young women, especially those with less traditional self-views and goals, are more attracted to communal men than agentic men.

5.1 Summary of key findings

The focus of Chapter 2 was on the dynamics of gender role stereotypes within the family context. Participants were heterosexual cohabiting parents and their 7-13 year old children. All participants reported their gender role beliefs and self-stereotypes, and parents provided information about their division of labor dynamics in terms of paid work hours and domestic contributions, while children nominated their future occupational aspirations. Children's aspirations were coded as being male- or female-stereotypic and then that stereotypicality was predicted from parents' variables. Most relevant to the research question raised in this dissertation, we found that when fathers reported greater involvement in childcare and housework, their daughters nominated less female-stereotypic (i.e., more gender-neutral) career aspirations. Notably, this relationship held above and beyond fathers' implicit and explicit gender stereotypes and self-views, some of which also predicted the degree of their daughters' stereotypicality. Unlike these patterns for girls, however, the occupational aspirations for boys were highly male-stereotypic and not predicted by their parents' beliefs or behaviors, which is an issue I will return to later in this chapter.

The focus of Chapter 3 was to test the hypothesis that the future roles women envision for themselves are constrained by their stereotypic expectations of men's domestic involvement. Across four experiments, we manipulated women's perceptions of the degree to which they can expect men to take on childcare roles in the future, and then measured how they envision their own anticipated division of childcare and breadwinning, and how they think they will spend their

time. In the first three studies, we found that when women are primed to expect men to remain traditional in their roles (i.e., remain career-oriented), women were constrained to imagining possible selves that were also in line with traditional gender stereotypes. Put differently, when women believe that some men are taking an increased interest in caregiving, they respond by increasing their own perceived likelihood of becoming the breadwinner. In a fourth study, we aimed to rule out the explanation that women's complementary role expectations can be interpreted through the lens of necessity or the need to fill a primary breadwinning role simply for functional reasons. Results of this study revealed that it is particularly the women who have ambitious career goals who are the most likely to envision adopting nontraditional roles when given information about men's increased caregiving. Taken together, we conclude that these studies support our hypotheses about the causal impact of gender role stereotypes governing men's roles directly restricting women's roles as well.

The focus of Chapter 4 was to examine whether women would prefer a potential mate who is less male-stereotypic and more communal in comparison with one who is more male-stereotypic and agentic. A second goal of this chapter was to determine whether specific women, such as those who themselves are most non-traditional and those who anticipate greater work-life conflict, would be particularly attracted to these atypical men. In three studies, women provided attractiveness ratings of men who were described as either career-oriented, family-oriented, or career-family balanced. These participants also reported their gender role beliefs, personal prioritization of career and family roles, and the likelihood that they expected to become the primary caregiver and the primary breadwinner in 15 years' time. All samples revealed consistent patterns of rating the traditional, career-focused men as the least attractive types of mates – indicating a strong preference among women for more communal (family-oriented or

balanced) romantic partners and for parenting skills over financial resources. Moreover, meta-analyzed results supported our hypotheses about which women, in particular, might be most attracted to these communal men. Specifically, women who envision themselves as primary breadwinners in the future emphasized greater importance of a potential partner having qualities of a good parent and appeared to care less about a mate having access to financial resources (controlling for their own beliefs and priorities). Additionally, to the degree that women imagined taking on a non-traditional role themselves (i.e., becoming primary breadwinners), they rated a traditional, career-oriented male exemplar as a less desirable potential mate. These lower ratings also corresponded to a relative preference for a more family-oriented mate over a career-oriented one, which is consistent with our predictions about the expected value of complementary roles in a romantic partnership.

5.2 Implications and future directions

My research on men's roles and women's goals expands our understanding of the impact of gender role stereotypes on people's self-views by moving beyond investigation restricted to beliefs about the self and the domain. This work also contributes to the literature on relationships by further highlighting the interdependent nature of romantic dyads in demonstrating women's forecasted stereotypes about men and the complementary possible selves that result. Moreover, these data are broadly applicable to society at large, as they speak to a common set of phenomena that affect most people's everyday lives.

Although not discussed at length here, I would speculate that some of these same psychological processes are at play even among families with a less traditional structure (e.g., single parents, same-sex couples, etc.). For example, single parents can achieve complementarity

between their family and career roles by outsourcing some proportion of the childcare and housework tasks – albeit this is more out of necessity than gender role adherence as getting things accomplished in one’s life is a zero-sum game. Also, there is evidence that gender-related ideologies more strongly predict same-sex couples’ division of household labor than their hours of household employment (Patterson, Sutfin, & Fulcher, 2004). Moreover, children’s gender stereotype development seem to be more a reflection of their parents’ division of labor than their parents’ sexual orientations or gender ideologies (Fulcher, Sutfin, & Patterson, 2008). Such findings indicate that even though same-sex couples may, overall, distribute the domestic labor more evenly, there still exists individual variation among non-traditional families that merits further exploration. And, more importantly, even in non-traditional families, people’s views of themselves in one sphere of life (e.g., as a career-minded breadwinner) can shape and be shaped in a complementary way by what others in their lives are willing to do and interested in doing.

5.2.1 Measurement of possible vs. actual selves

The use of self-report measures and forecasted expectations is a strength of this research because, by definition, it emphasizes the degree to which girls and women rely on stereotyped expectations of the future roles in order to envision at a very explicit level what a possible self might look like (as discussed in Chapter 3). Conversely, this feature of the studies makes it difficult to draw conclusions about the longer-term consequences of complementarity and preferences for non-traditional mates or about actual behavior in the real world. This limitation provides an opportunity for future studies to follow-up these findings using longitudinal paradigms and behavioral outcome variables. Specifically, I recommend designing separate longitudinal studies to examine whether the anticipated roles that girls and women report, do end up playing out over the courses of their lives. Specifically, one multi-wave study could assess

parent's beliefs and behaviors at baseline, then use those variables to predict daughters' occupational aspirations in childhood, their grade point average and subjects taken in high school, their university major (if any), and their actual chosen occupations. According to the complementarity hypothesis, the gender stereotypicality of these outcome measures for girls should relate negatively to their fathers' domestic involvement (and positively to their implicit gender role beliefs). In particular, the complementarity hypothesis would predict that women with more domestically inclined fathers should be more likely to become the family breadwinner as adults, and they should be more willing to adopt leadership roles at work, and generally take on more demanding or time-intensive careers.

A separate multi-wave study could assess the long-term implications of communal romantic partners on women's self-views and roles. Using a similar "future life" paradigm as the studies from Chapter 3, a longitudinal study could initially measure women's role expectations during their first or second year of university. Three more follow-up surveys could take place (once every 5 years) until the women reach age 35, which is the time frame they forecasted to in Wave 1 of the study. Key research questions that could be answered by a study like this would include: At a basic, descriptive level, are these women occupying the roles they had expected (e.g., primary caregiver/breadwinner) and does this reflect their anticipated role likelihoods? How many hours per week do they work outside the home, and is this amount predicted by how much their partners contribute to the domestic responsibilities? Similarly, does their partner involvement at home predict women's position within the professional hierarchy? And, lastly, is it the case that women who reported more ambitious career goals or a desire to "have it all" in Wave 1 of the study end up choosing a romantic partner who is more communal than agentic? One could even go a step farther to examine these patterns for a feedback loop: Do women who

initially reported ambitious career goals and a likelihood of becoming the primary breadwinner partner up with a mate who adopts greater responsibilities in domestic roles, which then leads women to experience more career success and advancement?

Thus, future research employing longitudinal designs and tracking behavior outcomes could go a long way in unpacking the causes and consequences of complementarity effects.

5.2.2 Perceptions of changing gender roles

Sources of men's communal behavior. Despite having learned from this series of studies that men's rigid gender role adherence constrains women's possible selves, little is known about the psychology of the process itself. One way for future research to learn more about this gap in our understanding would be to focus on paradigms that explore women's meta-perceptions of men's motivations for behaving in more or less traditionally stereotypical ways. For example, it might be that when women observe men in communal roles, they are making spontaneous judgements about whether men are engaging in such behavior as a result of internal motivation (e.g., because it is personally important to them) or external motivation (e.g., because of some outside force or to avoid social sanction from others). Importantly, I am suggesting that in making these spontaneous judgements of men's motives for communal behavior, women are also making inferences about men's beliefs, attitudes, and values. In the case of complementarity effects, then, a man's reason for behaving communally might have a differential impact on women's possible selves and on whether or not he is seen as a desirable romantic partner.

On the one hand, men who behave communally for internal reasons may be viewed (accurately) as more warm, nurturing, and selfless than those who behave communally for external reasons. As such, women may interpret the behavior as a stronger signal that gender role change is imminent and that it is more widely accepted (given that men as the higher status

gender have the power to cue the permissibility of amended social norms). On the other hand, if men are perceived as behaving communally for external reasons, that may cause women to doubt the degree to which change is truly in the air, or to simply dismiss the action altogether. As a consequence of men's external motivation, women might not respond in a complementary way, either out of reluctance to interpret the new behavior as a signal that men's roles are truly changing, or out of a failure to perceive men's changed behavior in the first place. In this sense, the source of men's motivation for communal behavior might provide interesting insights into the process of complementarity.

Future research could isolate such a process by manipulating men's motivation (internal vs. external) while holding constant their general values and ambitions, and measuring the degree to which women's possible selves are constrained or unbound following exposure to communal men. Additionally, it would be interesting to measure women's desirability ratings of these men, as I predict that internally motivated communal men might make more attractive future partners than men who behave communally out of obligation or because they believe they should. Furthermore, there is some evidence indicating that when behavior is motivated primarily by external forces, it can lead to negative downstream consequences for both actors and observers in a situation (Croft & Schmader, 2012; Deci, Ryan, & Koestner, 1999).

To approach or avoid? Another avenue for future research would be to examine the patterns and consequences of people's perceptions that traditional gender roles and norms are in fact changing. The asymmetrical gender role change that has been occurring in the Western world for the past 60 years is a major theme underlying this dissertation, but little is known about people's psychological appraisals of such a large scale shift in our social roles. Understanding what people think about gender role change is an important research direction because these

reactions can have robust implications for whether or not these social changes are perpetuated, stalled, or otherwise altered. As a social psychologist in the business of observing and predicting human behavior, I squarely acknowledge that this topic is ripe with rich research questions.

As a starting point for future work in this area, I will consider a few factors that might predict support for or backlash against change in traditional gender roles. Firstly, individual differences in endorsement of sexist ideologies (Glick & Fiske, 1996; 2001) might moderate people's perceptions of changing roles. For example, a person who strongly endorses the belief that men should be dominant over women (and that women should be pure and submissive) might have a particularly negative reaction to the perception that gender roles are becoming increasingly fluid. In fact, several theoretical perspectives (e.g., system-justification theory, Jost & Banaji, 1994; meaning maintenance model, Heine, Proulx, & Vohs, 2006; identity threat theories, Branscombe, Ellemers, Spears, & Doosje, 1999) would suggest that such perceptions could propagate a sense of *personal threat* to such people because they view the status quo as legitimate. This hypothesis could be easily tested in a paradigm involving a manipulation of the perceptions that gender roles (or traits) are converging or relatively stable, and then examining various outcomes that tap into threat responses. Some examples of illuminating outcomes might include intensified gender prescriptions for others, more gender stereotypical future expectations for work-life balance (or prioritizing work over family) for oneself, reduced self-efficacy in cross-role behavior (e.g., men saying they are not skilled at socioemotional tasks), heightened endorsement of maternal gatekeeping, etc. Overall, I hypothesize that indices of psychological

threat in response to idea of changing gender roles will lead to defensive responses and resistance against any social movements aimed at promoting gender equality.

An alternative factor that might influence whether or not people respond positively to the concept of gender role change is their awareness of the asymmetry in said change. Put differently, there are likely to be those who do not support the idea of change in men's roles because they do not actually perceive the current division of labor as unfair or unequal. In preliminary studies in our lab, we have seen that American participants are less supportive of efforts to increase men's inclusion in communal roles than they are of efforts to increase women's inclusion in agentic roles (Mortazavi, Croft, Mortazavi, & Schmader, 2014). Furthermore, delving farther into the patterns of these relationships indicated that people make very different attributions for the underrepresentation of men and women in counterstereotypical gender roles. For men, people assume that the underrepresentation is due to a lack of interest or motivation, whereas for women they assume it's a function of discrimination or a lack of role models. And these differential attributions partially explain the differential support for change in women's (but not men's) roles. Future studies should establish these patterns more firmly and then follow-up with tests of experimental manipulations that could boost support for more equal gender role change. One possible manipulation of this sort could be to simply highlight the interdependent nature of complementarity gender role effects, especially since people seem much more willing to endorse social change that ostensibly benefits women more than men.

5.2.3 Fostering more communality in men

The empirical work I have described in this dissertation highlights some important downstream consequences of men's rigid, traditional gender roles in constraining women's own beliefs and self-views. Thus, a clear goal for future research is to seek out and explore ways of

breaking the constraints that still exist on men's roles, the characteristics they exhibit, and the values they espouse. I recently co-authored a theoretical paper proposing a model of psychological barriers to men's engagement in communal roles (Croft et al., 2015). Working from this theoretical model, I have several ideas for research directions aimed at mitigating the barriers that contribute to asymmetrically changing gender roles for men, which will subsequently have a direct impact on women and girls (given the evidence outlined in this document).

Reinterpreting communal roles. Tackling the underrepresentation of communal men would likely mean increasing the overall value and status that society as a whole, but especially men, place on communal traits and roles (since higher status groups often devalue traits and domains associated with a lower status group because these traits are assumed to have less utility; Schmader, Major, Eccleston, & McCoy, 2001). The most obvious and direct way to increase the value that we perceive as inherent to communal roles would be to reframe the broader significance of communalism and to disassociate these roles from being categorized as uniquely female. Doing so would strengthen the perceived congruity between men's internalized goals and communal roles. For example, efforts to reframe STEM in more communal terms has had success reducing the perceived masculinity of these roles and thus increasing women's stated interest in STEM careers (Diekman et al., 2011). In the past decade, a collective interest in recruiting women in STEM has led to similar large-scale (and sometimes controversial) efforts to advertise science and math to girls at a very early age. For example, GoldieBlox is a new toy company designed by a female engineer to "give girls more choices than dolls and princesses." Similarly, classroom-based interventions to engage girls in science have been shown to be

successful in the short and long-term producing more interest and pursuit of science related fields in females (Fadigan & Hamrich, 2004).

At the time of this writing, no similar programs have similarly tried to increase boys' interest in and engagement with communal activities and roles. Nevertheless, evidence from programs targeting the development of a link between girls and science give us hope that young children's gender-typed aspirations and values are flexible and boys' communal values could be targeted in similar ways. This could take the form of educational programs designed to explicitly disassociate communal skills like empathy, compassion, emotional intelligence from women and reframe these as important human universals, with all the psychological and social benefits we described earlier. Fostering and encouraging boys' interest in communal values, the cultivation of socioemotional skills and communal attitudes at an early stage in their development could be the key to dispelling the harmful message most young boys receive to "be a man." As a consequence, communal goals might become more easily internalized, allowing such roles to feel like a better fit for boys and men. This sort of an intervention could be broad-based and not necessarily targeted at specifically boys, though, since both sexes seem to benefit equally from sensitivity and emotionality training (Schonert-Reichl et al., 2012).

A similar way to make communal men more acceptable and commonplace could be to reframe communal roles in a different light to make them compatible with men's stereotypic, agentic traits and values (as opposed to the prior suggestion of increasing the inherent value of communal activities and traits). Reframing communal roles as affording traditionally masculine goals is one way to do this. For instance, framing childcare as an opportunity for males to pass on their legacy and fulfill their role as the protector of the family or describing the job of a social worker as an opportunity to put one's vision for society to action could allow men to reconcile

communal pursuits with masculinity. There is already some evidence that framing help-seeking as compatible with the male role increases men's likelihood of receiving mental health treatment (Addis & Mahalik, 2003), which provides promising support for future research in this vein. Such reframing might also highlight the fact that moral heroes throughout history (both men and women) are those who integrate agentic behaviors in the pursuit of communal goals (Frimer, Walker, Lee, Riches, & Dunlop, 2012). Initial evidence from self-report surveys in our lab suggests that perhaps framing communal roles in such a way that emphasizes their more competitive aspects (rather than minimizing their communal aspects) might allow men to envision these roles as being more congruent with their existing (masculine/agentic) goals and values. Future studies should aim to identify the conditions under which these distinct types of reframing strategies might function best.

Modeling communal behavior. Men might also find it easier to internalize communal values and roles to the degree that they see other men willingly and successfully embody these roles. As a starting place for this idea, research that has focused on the malleability of gendered associations with science and leadership demonstrates that role models do not only serve as a source of explicit inspiration but that they also help to shift people's implicit associations. For example, women exposed successful women in math and science develop a weaker tendency to associate men with science and leadership and an increased tendency to associate self with math (e.g., Asgari, Dasgupta, Gilbert Cote & Stout, 2010; Stout, Dasgupta, Hunsinger & McManus, 2011).

When considering successful communal role models for men, however, such strategies might be more effective in elevating an interest in these roles among men who do not already strongly endorse status differences between men and women. In making this point, I invite the

reader to recall the data presented in Chapter 2 of this dissertation wherein young boys showed very little variability in the stereotypicality of the occupational aspirations. I argue that this pattern hints that perhaps a role modeling approach would be most poignant for boys prior to 7-years-old. Two distinct types of future studies can be derived from this line of reasoning. First, it's possible that a replication of the correlational study with parents and children (as in Chapter 2) might prove more fruitful in predicting boys' career aspirations from parents' beliefs and behaviors at an earlier age (e.g., 3-5 years). Second, an experimental paradigm in which boys are shown non-traditional (vs. traditional) male exemplars could change boys' perceptions of the social acceptability of adopting or even preferring communal roles. My rationale for these hypotheses is based on prior research showing that the gender stereotypes of younger children are more malleable than older children (Gonzales, Steele, & Baron, in press) and that, once in a classroom context, children's peers tend to engage in strong social policing of gender-relevant behavior, especially for boys (Wilbourn & Kee, 2010b), which could lead to boys to be less willing to nominate seemingly less masculine occupations for themselves. Therefore, younger boys who have not yet attended school might be more strongly attuned to and influenced by either their parents or communal role models (or both).

5.3 Concluding remarks

In conclusion, the research described in this dissertation offers several practical and theoretical contributions. For example, the literature on the underrepresentation of women in traditionally male roles has shown that women's own goals and their stereotypes about various roles can sometimes preclude them from showing interest in male-dominated domains. But the impact of men's anticipated roles and the trade-offs between romantic partners in the domestic sphere had not previously to be examined as potential psychological barriers to women's future

beliefs about themselves and their roles (even before they enter the workforce). The studies I have presented add to the gap in scientific literature on this topic. Practically speaking, the data show that when men are expected to enact a more equal distribution of domestic work, women envision a less traditional or stereotypic future for themselves. Such findings might imply that as men become more willing to accept greater domestic responsibility, more opportunities in the workplace will develop for women.

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Appendices

Appendix A Chapter 2 Supplemental Materials

Expanded Method Section

Participants

We recruited 326 children, between seven and 13 years old (172 boys, 154 girls, $M_{age} = 9.34$, $SD_{age} = 1.72$) and at least one of their parents (204 mothers, $M_{age} = 41.15$, $SD_{age} = 6.71$, 59.3% Caucasian; 141 fathers, $M_{age} = 43.67$, $SD_{age} = 5.92$, 74.3% Caucasian) at a science center. Our initial goal was to collect usable data from 300 to 400 children. Data collection took place December, 2011 through August, 2012 and was stopped when our sample was within that range and a turnover in research staff during the summer would have required substantial training of new staff. Degrees of freedom for some analyses are reduced due to missing data on one or more parent or child measures. In addition, data from 38 additional children were excluded from analyses because neither parent participated in the study. Because we had data from both parents for only 27% of the children ($n = 87$), data were analyzed as two distinct samples of parent-child dyads: a sample of 140 fathers with 170 children (83 daughters, 87 sons) and a sample of 204 mothers with 243 children (115 daughters, 128 sons). Note that distinguishability tests (Kenny, Kashy, & Cook, 2006) confirmed assumptions that predictor variables had significantly distinct patterns of covariation among male and female parents, justifying our approach to divide our parent sample based on gender. Also, each sample included some children who were siblings of each other: 35% in the father sample and 32% in the mother sample. For more detail, see the subsection of Supplementary Analyses below, entitled *Possible Dependencies Among Child Siblings*.

Procedure

Families were recruited from the free-play area of the science center. The study was advertised as “a fun computer task that investigates children’s cognitive development”. Interested families were taken to a sound-proof testing room designated for behavioral research where parents completed a pre-screening questionnaire to select children in the correct age range and who live at home with both a mother and a father. When children or parents did not fit the selection criteria, they were instead run in a different lab study that lacked such inclusion criteria. After obtaining informed consent, child participants worked one-on-one with a research assistant who ensured all tasks were properly understood. Parents completed a similar set of measures with the help of detailed on-screen instructions at a separate computer in an adjacent lab room. When one or both parents were present, one completed the study in the lab room as described while the other was provided instructions to complete the study online from home with a secure password and login that permitted us to link their responses to those of their spouse and child(ren).

All participants completed four stereotype-relevant measures: explicit and implicit measures of their general tendency to associate women (vs. men) with home (i.e., *explicit gender role beliefs* and *implicit gender role associations*), and explicit and implicit measures of their self-identification with a gender-stereotypic role (i.e., *explicit* and *implicit self-stereotyping*). In addition to these four measures, children reported their occupational preferences and parents completed measures assessing the division of labor in their households. While the present report only focuses on predicting children’s explicit measures from parent variables, these supplementary materials present detailed information about all measures collected.

Measures

Explicit gender role beliefs. Gender role stereotypes concerning domestic labor were assessed by five items asking which person in a heterosexual couple would do more of a given household task (dishes, cleaning, childcare, cooking, laundry). For each item, participants heard (child) or read (adult) a vignette describing a couple along with a description of a specific behavior (e.g., cooking) and were asked to indicate whether the male or female partner was more likely to perform that behavior.

Participants provided their responses by sliding a scale on the computer toward the person on the left (-100) or toward the person on the right (+100, where zero represented 50/50 sharing between the couple) using a mouse. Participants moved the cursor from the middle of the scale (representing 50/50 sharing) closer to the picture of the person they believe would do more of the task. Participants' scores were averaged (across all participants, $\alpha = .57$)¹² and recoded as stereotypic domestic beliefs, such that positive numbers indicated a perception that the woman would do more housework than the man (see Screenshot A below). To ensure that children as well as parents understood these questions, we included a practice question. The practice question asked participants to decide, by moving the slider scale, how much work a gardener and a plumber respectively would do on a family's leaky pipe. Adults and children both showed understanding of the slider scale by moving the cursor closer to the plumber than the gardener.

¹² This scale is an example of a formative rather than a reflective scale, meaning that the items themselves cause the construct rather than the reverse (Diamantopoulos & Winklhofer, 2001). One does not expect formative scales to yield a high alpha among scale items. For example, respondents likely assume that couples negotiate some tradeoffs across tasks that would limit the consistency of inter-item correlations across items. Still, the average score across these items forms a face-valid measure of perceived domestic contribution. As shown in Table 2, parents' responses on this measure are correlated in sensible ways with the domestic contribution each parent reports making to their household, providing predictive validity for the measure.

Explicit self-stereotyping. We measured participants' explicit self-identification with work vs. family-oriented roles using the same type of slider scale. In each of two vignettes, parents and children made ratings of perceived similarity to gender-matched targets (see Screenshot B). Both items contrasted a person who spends most of their time working at an office against someone who primarily stays at home caring for their children. For each item, participants rated, "Who are you more similar to?" (for children, "Who will you be like when you grow up?") using the slider scale described above. Scores on the two items were averaged ($r = .56, p < .001$) and recoded so that higher numbers imply greater self-stereotyping (i.e., greater work-orientation in males and greater family-orientation in females).

Implicit measures. Two Implicit Association Tests (IAT; Greenwald, McGhee, & Schwartz, 1998) were used to assess participants' automatic associations of broad gender categories (*gender role IAT*) and the self (*self-stereotyping IAT*) with work vs. home roles. The IAT is a well-established measure of implicit associations (e.g., Greenwald, Poehlman, Uhlmann, & Banaji, 2009), designed to measure implicit, meaning more automatic and not explicitly reported attitudes or stereotypes individuals have towards concepts such as gender or race. More specifically, it is a computerized measure that assesses strength of association between two concepts by measuring relative response latencies when categories are paired in a stereotype congruent manner to when categories are paired in a stereotype incongruent manner.

In the tasks, participants categorize stimuli that are presented one at a time in the middle of the screen. These stimuli belong to one of two sets; one set of the stimuli belongs to the target category (e.g. male/female) and the other set belongs to the attribute category (e.g. office/home). In one block of 20 trials, the category and attribute labels paired at the top of the screen are stereotype congruent (e.g., male and office appear on the left, female and home appear on the

right). In a second block of 20 trials, these labels are paired in a stereotype incongruent manner. Participants categorize each stimulus into one of the categories presented on the left using the 'E' key or one of the categories on the right using the 'I' key. Order of blocks and assignment of labels to response keys were counterbalanced across participants.

We used two different IATs to measure a) implicit gender role stereotypes and b) implicit self-stereotyping in both parents and children (see Screenshot C). In counter-balanced order, participants completed 20 trials for each block (i.e. self/home, other/work or self/work, other/family). To further accommodate the task to children's needs, words were also spoken through headphones, and category reminders were presented as pictures (e.g. a picture of an office to represent the work category) instead of words (Baron, & Banaji, 2006). Although parents made their categorizations using the 'E' and 'I' keys, for children, the response keys were substituted by two large, colored buttons, to facilitate their task understanding (Baron & Banaji, 2006).

Implicit bias scores were created using standard scoring algorithms (Greenwald, Nosek, & Banaji, 2003) that compute the difference in reaction times to 20 stereotype congruent (e.g., male/work) and 20 incongruent (e.g., male/home) trials, with the first trial of each IAT excluded. Higher scores on both implicit measures represent stronger stereotypic associations (women = home/ men = work). Per convention in IAT research, we excluded data of parents who made errors on more than 20% of trials ($n = 35$ across both IATs). Children's implicit associations were not analyzed in the current study and thus the results of these measures will not be reported here. More specific information about both types of IAT is provided below.

Gender role IAT. The broad-based gender role IAT was designed to measure associations between gender (male/female) and home compared to work related tasks. The target category

(male/female) was represented through a set of pictures of five male and five female faces. These stimuli were comprised of ethnically diverse adults previously used by Stout and colleagues (Stout, Dasgupta, Hunsinger & McManus, 2011). The attribute category (“home” vs. “work”) was represented through five pictures of housework related items such as a vacuum and by five pictures of office related items such as an office desk. These picture stimuli were found on the Internet and discussed in depth by the research team to ensure they clearly represented the categories.

Self-stereotyping IAT. The self-stereotyping IAT was designed to measure how strongly participants associated themselves, compared to others, with the concepts of “home” and “office.” Participants had to categorize randomly presented words that fit into the categories “self” (e.g., me) or “other” (e.g., they), while also categorizing pictures of “office” (e.g. an individual holding a business presentation) or “home” (e.g. an individual doing laundry). The gender of the individuals on the photos representing home and work was also matched to the participant's gender. Again, there were five stimuli in each category and pictures were discussed by the research team to ensure representativeness of their category as well as a relatively neutral facial expression of the people in the pictures.

Parent paid and domestic labor. Parents reported the number of paid hours they work per week and indicated their relative contribution to housework and childcare tasks on a scale from -100 (spouse does it all) to +100 (I do it all). Responses to housework and childcare items were converted to a 0-100% scale and combined ($r = .58, p < .001$) to form a measure of parents' *domestic contribution* ($M = 57.57, SD = 20.04, range = 3.25 = 100$).

Additional parent measures. Several other items were included in the survey but were not the focus of the analyses reported in this paper. Specifically, parents were asked to indicate

how much they generally enjoy their paid work, household tasks and childcare tasks (separately) on a seven-point scale (1= Not at all, 7= Very much). Furthermore, parents responded to “How, if at all, would you ideally like the distribution of household work (or childcare tasks, separately) to be changed?” on a seven-point scale (1 = I strongly feel my spouse should do more, 4 = I am satisfied with the way things are, 7 = I strongly feel I should do more). To assess work-family conflict, parents also indicated the extent of their agreement with the following two items on a seven-point scale (1= Not at all, 7= Very often): 1) “I have to miss family activities due to the amount of time I must spend on work responsibilities” and 2) “I have to miss work activities due to the amount of time I must spend on family responsibilities”.

Parents also rated how masculine and feminine they are, compared to others around them, on a seven-point scale (1= Not at all, 7= very much). Moreover, parents indicated how many hours per week their child helped in the household and how many hours of TV per week their child watched. Lastly, parents completed a demographic questionnaire including age, occupation, ethnicity, marital status and number of years they have lived in Canada.

Additional child measures. In addition to the occupational aspiration question included in this study, several other measures were administered for children but were not the focus of our analyses. Specifically, research assistants prompted children to respond to a series of questions and recorded their answers. These questions included the gender of their primary teacher, their favorite toy, their favorite activities, and their favorite TV shows. As described in the report, children’s free-response to the occupational aspiration question was coded as being stereotypically masculine (a rating of 1 or 2), gender-neutral (3), or stereotypically feminine (4 or 5) by two independent coders. These scores were then recoded as either 1 (counter-stereotypical), 2 (neutral) or 3 (stereotypical; *Krippendorff’s* $\alpha = .70$). We also assessed

children's perceived closeness to each of their parents with the help of a modified version of the Inclusion of Self in Other scale (IOS; Aron, Aron, & Smollan, 1992). This scale asks children to choose from 6 images that display two circles with varying degrees of proximity to represent the degree of closeness between them and their parent (see Screenshot D).

Supplementary Analyses

Tests of distinguishability

A key issue in this paper is the analytic strategy of conducting separate analyses for mothers and fathers. A reviewer suggested additional analytic strategies should be conducted to examine mothers and fathers as being empirically distinguishable samples. At issue here is the justification for our assumption that the mothers and fathers sampled might represent quite distinct populations and thus could have distinct effects (due to their gender) on their children.

One way to justify this assumption is through conceptual analysis (Gonzales & Griffin, 1999). For example, prior evidence that mothers' stereotypic beliefs are more strongly predictive of those of their children (Tenenbaum & Leaper, 2002) or the perspective that fathers might be unique gatekeepers of stereotypic role information would suggest that mothers and fathers would not be expected to be interchangeable parents, but rather are distinct in theoretically reasonable ways.

However, Kenny, Kashy, and Cook (2006) explicitly state that an empirical approach is preferred to test assumptions of distinguishability (e.g., when examining dyadic analyses). Although recent data suggest that indeed, men and women might only be quantitatively and not qualitatively different from one another when it comes to many psychological or behavioral constructs (Carothers & Reis, 2014), our measured predictor variables relate specifically to

gender roles. *A priori*, we would anticipate that the stereotypic variables measured would be differentially related to behavior for mothers and fathers. For example, our measure of explicit self-stereotyping *should* covary with hours worked differently for moms and dads, because of the gender roles that define normative behavior differently for men and women. Indeed, in a series of distinguishability tests of our parent dyads (Steiger, 1980) recommended by Kenny et al. (2006) testing all relationships with our two behavior variables and four stereotype measures, 5 out of 8 of these are significant. The *Fisher r-to-z transformations* on the comparable tests for the portion of our male and female parents who represent independent samples yields 3 of 8 significant tests (see Table 1).

The conclusion here is that among parents in our sample (either married dyads or as independent samples), stronger gender stereotypic beliefs relates to *more* domestic contribution for women but *less* contribution for men. And explicitly perceiving oneself as being stereotypic relates to more domestic contribution and fewer work hours for women; but the opposite patterns emerge for men.

Thus, based on these data, it is difficult to conclude that we should instead combine mother and father data to look more generally at parent effects on children. As one can clearly see from these analyses, some of these predictor variables relate quite differently to one another depending upon the sex of the parent. These analyses, we believe, justify the approach to analyze mothers and fathers as distinct samples.

Testing for non-independence in the data

Because data were collected from families, there are two potential sources of non-independence in our data that could have affected conclusions that can be drawn from analyses.

One is possible dependence in variables measured from married spouses (e.g., husbands and wives might have correlated variables). A second is the possible dependence in variables measured from siblings within the same family. In these supplementary analyses, we examined the degree to which such dependencies in the data existed and addressed how, if at all, they limit the conclusions drawn from analyses reported in the manuscript. We also addressed possible questions about sampling differences among parents who participated alone or with their spouses.

Possible dependencies among married parents. We first examined the degree of covariation between the 68 spouse pairs in our sample on the variables of interest (see Table 2). Note that only two of six variables were significantly (but only moderately) correlated with one another: explicit gender role beliefs ($r = .35, p < .01$) and relative domestic contribution ($r = -.31, p < .05$). The latter variable should necessarily be inversely related as each partner is asked to report their contribution relative to their spouse. None of the other variables are related to one another between couples and even these two variables only shared about 10% of their variance in common suggesting that variables measured in our father sample are not redundant (or highly dependent) with variables measured in our mother sample. These analyses indicate that it is a reasonable assumption to treat mothers and fathers as having distinct effects on their children.

Sampling differences between parents participating alone or as a dyad. We further explored the data for sampling differences among the parents who participated on their own or with their partners present by testing the 2 (sex of parent) x 2 (participating alone vs. with spouse) interactions on our key parent predictor variables (see Table 3). These analyses revealed no significant interactions, *all ps* > .21, and each of the gender main effects reported in the

manuscript remained significant. The only significant effect of participating alone vs. with one's spouse was that parents who participated alone tended to report doing more domestic work ($M = 57.19\%$) than those who came into our lab with their spouse ($M = 52.53\%$), $F(1, 344) = 7.32$, $p < .01$. Because this effect did not vary as a function of parent sex and no other interactions were significant, we can assume that parents who participated along with their spouses are not responding in qualitatively different ways from parents who participated alone. This result suggests that the gender differences we report in our parent data are not contingent upon sampling characteristics that might be confounded with gender. In addition, mean levels of children's variables also did not vary as a function of whether they were participating along with their mom, their dad, or both parents, all $ps > .20$. Such comparisons justify merging fathers' data, for example, regardless of whether or not we also obtained data from their wives.

Possible dependencies among child siblings. To examine the extent of dependence in sibling data, we first summarized the reliability between siblings on key outcome variables (Table 4). Note that none of these intraclass correlations are significant, suggesting that the inclusion of sibling data in the analyses reported is unlikely to violate statistical assumptions of non-independence. However, we did conduct supplementary analyses using multilevel modelling in SPSS (see Tables 5-7) to further rule out any possible effect created by the non-independence of siblings in the datasets. The results of these supplementary analyses revealed that when nesting participants within families, the effects remain largely unchanged. All interactions reported in the manuscript remain statistically significant, and no new significant effects emerge. Only the main effect of fathers' explicit self-views on children's explicit gender role beliefs becomes non-significant in these MLM analyses.

Table A.1. Tests of distinguishability between moms and dads, separated by parents who participated in a dyad versus alone.

Relationship	PAIRED PARENTAL DYADS				INDEPENDENT PARENTS				
	<i>n</i>	Moms <i>r</i>	Dads <i>r</i>	<i>Fisher's Z</i>	<i>n</i>	Moms <i>r</i>	<i>n</i>	Dads <i>r</i>	<i>Fisher's Z</i>
EGB-Domestic	85	.29	-.33	4.33***	153	.49	80	-.18	5.12***
ESS-Domestic	82	.33	-.11	2.99**	148	.50	81	-.33	6.35***
IGA-Domestic	79	.21	.10	.73	152	.07	80	-.03	.71
ISS-Domestic	69	-.01	.22	-1.41	137	.14	64	-.10	1.56
EGB-Work	85	-.04	-.05	.06	152	-.17	80	-.07	-.72
ESS-Work	82	-.84	.14	-10.83***	147	-.59	81	.30	-7.02***
IGA-Work	79	-.28	.04	-2.12*	151	-.09	80	-.13	.29
ISS-Work	69	-.10	.33	-2.96**	136	-.11	64	.24	.87

Notes: EGB: explicit gender role beliefs; IGA: implicit gender role associations; ESS: explicit self-stereotypes; ISS: implicit self-stereotypes; domestic: average childcare and housework contribution; work: hours worked per week

Table A.2. Bivariate correlations among married parents on key outcome measures.

		<i>D_EGB</i>	<i>D_IGA</i>	<i>D_ESS</i>	<i>D_ISS</i>	<i>D_domestic</i>	<i>D_work</i>
<i>M_EGB</i>	<i>Pearson Correlation</i>	.35**	-.19	.18	-.08	-.34**	.05
	<i>Sig. (2-tailed)</i>	.004	.14	.15	.56	.006	.72
	<i>N</i>	66	63	65	59	67	67
<i>M_IGA</i>	<i>Pearson Correlation</i>	.11	.18	.002	.27*	-.30*	.07
	<i>Sig. (2-tailed)</i>	.41	.16	.99	.042	.014	.58
	<i>N</i>	64	61	63	57	66	66
<i>M_ESS</i>	<i>Pearson Correlation</i>	.14	-.007	-.05	-.21	-.27*	.02
	<i>Sig. (2-tailed)</i>	.27	.96	.70	.12	.030	.877
	<i>N</i>	65	62	64	58	67	67
<i>M_ISS</i>	<i>Pearson Correlation</i>	.017	-.07	-.004	-.08	-.24	.13
	<i>Sig. (2-tailed)</i>	.90	.62	.98	.57	.065	.34
	<i>N</i>	58	55	57	52	60	60
<i>M_domestic</i>	<i>Pearson Correlation</i>	.21	.02	.10	.16	-.31*	.21
	<i>Sig. (2-tailed)</i>	.084	.88	.44	.24	.011	.08
	<i>N</i>	66	63	65	59	68	68
<i>M_work</i>	<i>Pearson Correlation</i>	-.09	-.06	-.08	.07	.37**	-.12
	<i>Sig. (2-tailed)</i>	.49	.64	.53	.60	.002	.33
	<i>N</i>	66	63	65	59	68	68

Notes: D_: dad; M_: mom; EGB: explicit gender role beliefs; IGS: implicit gender role associations; ESS: explicit self-stereotypes; ISS: implicit self-stereotypes; domestic: average childcare and housework contribution; work: hours worked per week

Table A.3. Means (standard deviations) and correlations between main variables measured among parents

	EGB	IGA	ESS	ISS	Domestic	Workhours
<i>Correlations</i>						
EGB	.35**	-.01	.30**	.08	.45***	-.17*
IGA	.09	.18	.11	.27***	.09	-.12†
ESS	.09	.01	-.05	.10	.45***	-.74***
ISS	.13	.24**	.08	-.08	.12	-.05
Domestic	-.25**	.03	-.29**	-.02	-.31*	-.40***
Workhours	-.05	-.04	.40**	.26**	-.26**	-.12
<i>Means (SD) for unrelated parents (independent samples t-tests)</i>						
Mothers (n = 136)	28.62 _a (33.07)	.45 _a (.51)	29.14 _a (66.68)	.40 _a (.47)	69.34 _a (16.44)	21.56 _a (18.06)
Fathers (n = 72)	11.56 _b (28.13)	.42 _a (.45)	11.72 _b (66.78)	-.05 _b (.54)	45.03 _b (16.45)	40.03 _b (13.23)
<i>Means (SD) for married parents (paired samples t-tests)</i>						
Mothers (n = 68)	23.45 _a (27.85)	.43 _a (.43)	30.40 _a (58.21)	.21 _a (.57)	65.55 _a (63.46)	20.74 _a (16.54)
Fathers (n = 68)	13.49 _b (24.83)	.41 _a (.59)	30.87 _a (48.53)	-.11 _b (.50)	38.55 _b (62.31)	44.00 _b (10.43)

† p < .10, * p < .05, ** p < .01, *** p < .001

Notes: Bivariate correlations for mothers above diagonal, fathers below diagonal; the subsample of married parent dyads along the diagonal; in the bottom portion of the table, means in the same column with different subscripts are significantly different from each other at $p < .05$. EGB: explicit gender role beliefs; IGA: implicit gender role associations; ESS: explicit self-stereotypes; ISS: implicit self-stereotypes.

Table A.4. Intraclass correlations among sibling pairs or groups on key outcome measures.

	EGB	ESS	Occupation
Intraclass correlation coefficient	.44	.10	.25
95% CI	-.06, .70	-.74, .53	-.47, .62

Table A.5. Summary of hierarchical linear modeling analyses predicting children's explicit gender role beliefs from parent variables, controlling for family membership.

	Mothers' Variables					Fathers' Variables				
	β	<i>s.e.</i>	<i>df</i>	<i>t</i>	<i>p</i>	β	<i>s.e.</i>	<i>df</i>	<i>t</i>	<i>p</i>
Child gender	-0.35	0.13	165.65	-2.79	0.01	-0.51	0.15	59.86	-3.40	0.00
Parent EGB	0.14	0.07	137.37	1.98	0.05	0.11	0.11	95.61	1.06	0.29
Parent ESS	-0.02	0.10	123.73	-0.24	0.81	0.16	0.11	88.97	1.46	0.15
Parent IGA	0.08	0.07	109.58	1.13	0.26	-0.06	0.11	89.45	-0.54	0.59
Parent ISS	0.04	0.07	68.04	0.56	0.58	-0.04	0.11	89.80	-0.36	0.72
Parent domestic	0.06	0.08	113.56	0.70	0.48	-0.02	0.11	96.90	-0.19	0.85
Parent work hours	-0.01	0.10	106.60	-0.09	0.93	0.14	0.11	94.33	1.26	0.21
Parent EGB X child gender	0.13	0.13	185.88	1.02	0.31	-0.17	0.17	100.63	-0.97	0.34
Parent ESS X child gender	-0.15	0.12	166.15	-1.19	0.24	0.21	0.16	83.22	1.27	0.21
Parent IGA X child gender	-0.25	0.13	154.50	-1.91	0.06	-0.31	0.17	79.05	-1.85	0.07
Parent ISS X child gender	0.02	0.12	114.01	0.18	0.86	-0.06	0.15	61.33	-0.41	0.68
Parent domestic X child gender	0.09	0.13	183.13	0.72	0.47	0.00	0.19	119.46	-0.02	0.99
Parent work hours X child gender	0.10	0.13	146.49	0.81	0.42	0.09	0.15	64.25	0.61	0.55

Table A.6. Summary of hierarchical linear modeling analyses predicting children's explicit self-stereotypes from parent variables, controlling for family membership.

	Mothers' Variables					Fathers' Variables				
	β	<i>s.e.</i>	<i>df</i>	<i>t</i>	<i>p</i>	β	<i>s.e.</i>	<i>df</i>	<i>t</i>	<i>p</i>
Child gender	-0.08	0.14	189	-0.58	0.57	-0.29	0.17	113.21	-1.74	0.09
Parent EGB	-0.09	0.08	189	-1.14	0.26	0.07	0.09	104.63	0.73	0.47
Parent ESS	0.06	0.11	189	0.50	0.62	0.08	0.09	75.64	0.88	0.38
Parent IGA	0.03	0.08	189	0.45	0.65	0.01	0.09	79.96	0.11	0.91
Parent ISS	-0.06	0.07	189	-0.79	0.43	-0.06	0.09	68.70	-0.70	0.49
Parent domestic	0.17	0.09	189	1.96	0.05	-0.02	0.09	106.22	-0.24	0.82
Parent work hours	0.07	0.11	189	0.67	0.50	-0.02	0.10	83.83	-0.26	0.80
Parent EGB X child gender	0.07	0.14	188	0.49	0.63	-0.38	0.17	119.78	-2.18	0.03
Parent ESS X child gender	-0.30	0.14	188	-2.13	0.03	-0.10	0.17	119.25	-0.56	0.58
Parent IGA X child gender	-0.11	0.15	188	-0.69	0.49	-0.21	0.17	120.97	-1.23	0.22
Parent ISS X child gender	0.07	0.14	188	0.49	0.62	0.26	0.16	112.33	1.60	0.11
Parent domestic X child gender	-0.05	0.14	188	-0.34	0.74	-0.24	0.18	120.26	-1.32	0.19
Parent work hours X child gender	0.24	0.14	188	1.66	0.10	0.18	0.16	111.98	1.11	0.27

Table A.7. Summary of hierarchical linear modeling analyses predicting children's occupational aspirations from parent variables, controlling for family membership.

	Mothers' Variables					Fathers' Variables				
	β	<i>s.e.</i>	<i>df</i>	<i>t</i>	<i>p</i>	β	<i>s.e.</i>	<i>df</i>	<i>t</i>	<i>p</i>
Child gender	0.68	0.13	161.85	5.11	0.00	0.78	0.16	109	4.94	0.00
Parent EGB	-0.09	0.08	158.91	-1.19	0.24	0.15	0.09	109	1.68	0.10
Parent ESS	0.06	0.10	146.22	0.60	0.55	-0.10	0.09	109	-1.22	0.23
Parent IGA	0.08	0.07	134.50	1.11	0.27	0.09	0.08	109	1.08	0.28
Parent ISS	0.07	0.07	116.39	1.01	0.32	0.11	0.08	109	1.31	0.19
Parent domestic	0.05	0.08	145.56	0.53	0.60	-0.05	0.09	109	-0.59	0.56
Parent work hours	0.03	0.10	141.29	0.35	0.73	0.11	0.09	109	1.22	0.23
Parent EGB X child gender	-0.12	0.13	167.32	-0.94	0.35	-0.44	0.17	108	-2.55	0.01
Parent ESS X child gender	-0.15	0.13	162.35	-1.10	0.27	-0.09	0.17	108	-0.57	0.57
Parent IGA X child gender	-0.02	0.14	157.38	-0.16	0.87	-0.39	0.17	108	-2.34	0.02
Parent ISS X child gender	0.16	0.13	143.26	1.19	0.24	-0.13	0.16	108	-0.80	0.43
Parent domestic X child gender	-0.25	0.14	166.97	-1.82	0.07	0.43	0.17	108	2.51	0.01
Parent work hours X child gender	0.16	0.14	158.41	1.15	0.25	-0.07	0.16	108	-0.47	0.64

Screenshot A

Screenshots of slider scales measuring explicit gender role stereotypes about domestic roles.

1

Sam and Susie have a baby that's only 8 months old. It is bed time for the baby.
Who will do more to get the baby ready for bed?

Susie Sam

Finish

1

At Alex and Amanda's house Sunday is laundry day. There is a pile of laundry in the laundry basket.
Who will do more of the laundry?

Amanda Alex

Finish

Screenshot B

Screenshots of slider scales measuring explicit self-stereotyping (identification with exemplars).

1

Here are **Tom** and **Mike**. When they were young, they played a lot together. Now they are adults. Now, **Tom** has job at a marketing company. He likes his job, although, he often has to stay there late and can't look after his kids. **Mike** used to work long hours too but now he only works 3 days a week so he can spend time with his family.

Who are you more similar to?

Tom

Mike

Finish

1

Here are **Clara** and **Carina**. When they were your age they were neighbours, so they saw each other a lot. Now they are all grown up. **Clara** has one child, who goes to daycare during the day so that she can go to her office job. **Carina** now has 2 children and stays at home to take care of them and the house.

One day you will also be all grown up!

When you are grown up, who do you think you will be more like?

Clara

Carina

Finish

Screenshot C

Screenshots of implicit self-stereotyping measure (IAT).

Screenshot D

Screenshots of child ratings of closeness to each parent.

Can you tell us which picture best describes how close you are to your mom?

Can you tell us which picture best describes how close you are to your dad?

Next >>

Appendix B Chapter 3 Supplemental Materials

Sample Descriptions of Male Exemplars (Study 1)

Career-Focused:

Christopher Berry went to The University of Alberta and received a Bachelor's of Science degree in Chemical Engineering. He started out in engineering design at Dow Chemical, a large chemical company where he designed equipment and processes that were used to make chemicals such as plastics and chlorine. In his work he focused on creating a better and more biodegradable form of packaging for food products. Christopher has found this very fulfilling, and despite the amount he has to put into his research, Chris knows he is making a valuable contribution to the environment. He never loses interest in what he is doing, as he feels that all of his hard work will eventually pay off. It is this persistence that makes him such a good chemical engineer. Chris is also married and has a young son.

Career-Family Balanced:

Christopher Berry went to The University of Alberta and received a Bachelor's of Science degree in Chemical Engineering. Chris works as an engineer at Dow Chemical, a large chemical company where he designs equipment and processes that are used to make chemicals such as plastics and chlorine. In addition to his success at work Chris maintains a healthy home life and enjoys spending his time off work with his son and wife. Chris says: "since my son Nathan was born, I try to stick to a regular schedule and go home early to spend time with my family." Although Chris loves being an Engineer and is happy at his workplace he is equally eager to spend time with his family.

Family-focused:

Christopher Berry went to The University of Alberta and received a Bachelor's of Science degree in Chemical Engineering. He started out in engineering design at Dow Chemical, a large chemical company where he designed equipment and processes that were used to make chemicals such as plastics and chlorine. He was very successful within his field, and well-liked by his colleagues. However, Chris's priorities changed when his first son, Nathan, was born. Since then, he has decided to take paternity leave to care for Nathan, while his wife goes back to work to advance her career and support their family. Chris really loves taking care of his son and he is planning to return to work once Nathan is ready to attend kindergarten.

Adapted Day Reconstruction Measure

Instructions:

At this time we would like you to describe a typical weekday of your life 15 years in the future. Please imagine what the average Wednesday of your future life would entail.

Your **day is divided into three parts** – Morning (6am to noon), Afternoon (from noon up until 6pm), and Evening (from 6pm until bedtime). There is room to list **6 episodes for each part of the day**, however you can skip any spaces you don't need. Use the breakdown of your day that makes the most sense to you and best captures what you did.

Begin by giving each "episode" a **short significant title** (such as “Getting ready for going to X”). Note the **time it started and the time it ended**. Then **describe shortly what you did** during this episode (e.g. got dressed, brushed teeth, made breakfast, ate breakfast)

A new episode might be going to a new location, interacting with a different person, or engaging in a new activity. An example of an episode: "Lunch with K. 12:30-13:15. had lunch with co-worker".

Now think ahead to the first "episode" that will occur in your day. Sum it up. When does it start? When will it end?

Morning (Wake up – 12pm)

Episode no.	Episode Name	Time it began	Time it ended	Notes to yourself (what did you do?)
1A				
2A				
3A				
4A				
5A				
6A				

Afternoon (Noon - 6pm)

Episode no.	Episode Name	Time it began	Time it ended	Notes to yourself (What did you do?)
1B				
2B				
3B				
4B				
5B				
6B				

Evening (6pm - bedtime)

Episode no.	Episode Name	Time it began	Time it ended	Notes to yourself (What did you do?)
1C				
2C				
3C				
4C				
5C				
6C				

Manipulation of Men's Changing Roles (Studies 2-4)

Low prevalence of stay at home dads

The number of stay-at-home-fathers in Canada has only risen from 4% to 12% over the past two and a half decades, according to the most recent Labour Force Survey. These numbers are projected to remain relatively low in the next two decades.

Rapidly increasing prevalence of stay at home dads

The number of stay-at-home-fathers in Canada has tripled over the past two and a half decades, according to the most recent Labour Force Survey. These numbers are projected to continue increasing at a similarly rapid rate over the next two decades.

Career Ambition Measure (Study 4)

1. How important is it to you to have a full-time career after you graduate?
2. How likely is it that 10 years after you graduate you will be in a professional environment where you will hold a position of power and responsibility?
3. I have a strong desire to move into senior management in the future
4. I have ambitious career goals
5. I would like an important job where people look up to me
6. I like talking to people who are important
7. I want to be an important person in my field
8. I really admire people who have fought their way to the top
9. If unemployment benefits were really high, I would still prefer to work
10. I like to be admired for my achievements
11. I like to have people come to me for advice
12. I find satisfaction in having influence over others because of my position at work

Appendix C Chapter 4 Supplemental Materials

Career-Family Conflict Manipulation

High Conflict Condition (screenshot)

% of women reporting *very high* vs.
very low degree of work-family conflict

Recent studies throughout North America have reported that more and more women are juggling both family and career responsibilities. Unfortunately, the majority of these women report feeling a very high degree of conflict between these two roles and report that "having it all" is not as easy as it sounds. We'd like to know what you think about such findings! Please imagine what your own life will be like in 15 years and how "having it all" might be tough to accomplish. In the box below, please write a few sentences about the difficulties you might face in the future when trying to manage these things yourself.

Low Conflict Condition (screenshot)

Recent studies throughout North America have reported that more and more women are juggling both family and career responsibilities. Fortunately, the majority of these women report feeling a very low degree of conflict between these two roles and report that "having it all" is definitely as easy as it sounds. We'd like to know what you think about such findings! Please imagine what your own life will be like in 15 years and how "having it all" might be realistic to accomplish. In the box below, please write a few sentences about the benefits you might gain in the future when trying to manage these things yourself:

Anticipated Career-Family Conflict Measure (adapted from Marks, 1997)

Instructions: Please try to imagine what your life will be like in 15 years. Visualize your future and anticipate the extent to which the following statements might be true for you.

	1 = strongly agree	2	3	4	5	6	7	8	9 = strongly agree
Family matters reduce the time I can devote to my job.	1	2	3	4	5	6	7	8	9
Family worries or problems distract me from my work.	1	2	3	4	5	6	7	8	9
Family activities stop me from getting the amount of sleep I need to do my job well.	1	2	3	4	5	6	7	8	9
Family obligations reduce the time I have to relax or be by myself.	1	2	3	4	5	6	7	8	9
My job reduces the amount of time I can spend with my family.	1	2	3	4	5	6	7	8	9
Problems at work make me irritable at home.	1	2	3	4	5	6	7	8	9
My work involves a lot of travel away from home.	1	2	3	4	5	6	7	8	9
My job takes so much energy that I don't feel up to doing things that need attention at home.	1	2	3	4	5	6	7	8	9

Descriptions of Men in Study 3

	Career	Balanced	Family
Law	"After graduation, I plan to pursue a law degree from a top university and eventually make partner at a high-profile law firm in Canada. Ideally, I'd like to have a reputation for being tough in the courtroom, but I also hope to be well liked by my peers. I am prepared to put in the effort and long hours at the beginning of my career, and I think that will pay off in the long-run as I move up the corporate ladder. I imagine myself having a loving, supportive wife and a couple of children too."	"After graduation, I plan to pursue a law degree from a top university and eventually make partner at a high-profile law firm in Canada. Ideally, I'd like to have a reputation for being tough in the courtroom, but I also hope to be well liked by my peers. I am prepared to put in the effort and long hours at the beginning of my career, and after my wife and I have kids, I'll do everything I can to avoid working on nights and weekends. I imagine myself having a good balance between a productive work life and a happy home life."	"After graduation, I plan to pursue a law degree from a top university and eventually make partner at a high-profile law firm in Canada. Ideally, I'd like to have a reputation for being tough in the courtroom, but I also hope to be well liked by my peers. I am prepared to put in the effort and long hours at the beginning of my career, but once I become a dad, I plan to cut back on my hours substantially. I imagine myself becoming a stay-at-home-dad when my kids are small, in order to be more involved in their upbringing."
Chem Eng	"I am currently working toward my Bachelor of Science degree in Chemical Engineering. I hope to work for a large chemical company designing equipment and processes that are used to create better and more biodegradable forms of packaging for food products. I know that my work will be making a valuable contribution to the environment and I think that will pay off in the long-run as I move up the corporate ladder. I believe my life will be made even richer by having a loving, supportive wife and a couple of children too."	"I am currently working toward my Bachelor of Science degree in Chemical Engineering. I hope to work for a large chemical company designing equipment and processes that are used to create better and more biodegradable forms of packaging for food products. I know that my work will be making a valuable contribution to the environment, and after my wife and I have kids, I'll do everything I can to avoid working on nights and weekends. I believe my life will be made even richer by having a good balance between a productive work life and a happy home life."	"I am currently working toward my Bachelor of Science degree in Chemical Engineering. I hope to work for a large chemical company designing equipment and processes that are used to create better and more biodegradable forms of packaging for food products. I know that my work will be making a valuable contribution to the environment, but once I become a dad, I plan to cut back on my hours substantially. I believe my life will be made even richer by becoming a stay-at-home-dad when my kids are small, in order to be more involved in their upbringing."
MBA	"I'm a student in the Sauder School of Business and when I'm done here I intend to pursue my MBA. After that, I could see myself relocating to somewhere like NYC to work as a stock broker on Wall Street. I imagine that I'll be very busy with work, constantly checking my phone for business-related emails and monitoring the unpredictable stock market. I really crave a fast-paced lifestyle and I think that will pay off in the long run as I move up the corporate ladder. I can easily see myself having a loving, supportive wife and a couple of children too."	"I'm a student in the Sauder School of Business and when I'm done here I intend to pursue my MBA. After that, I could see myself relocating to somewhere like NYC to work as a stock broker on Wall Street. I imagine that I'll be very busy with work, constantly checking my phone for business-related emails and monitoring the unpredictable stock market. I really crave a fast-paced lifestyle, and after my wife and I have kids, I'll do everything I can to avoid working on nights and weekends. I can easily see myself having a good balance between a productive work life and a happy home life."	"I'm a student in the Sauder School of Business and when I'm done here I intend to pursue my MBA. After that, I could see myself relocating to somewhere like NYC to work as a stock broker on Wall Street. I imagine that I'll be very busy with work, constantly checking my phone for business-related emails and monitoring the unpredictable stock market. I really crave a fast-paced lifestyle, but once I become a dad, I plan to cut back on my hours substantially. I can easily see myself becoming a stay-at-home-dad when my kids are small, in order to be more involved in their upbringing."

Attractiveness Measure

Instructions: Please rate this person on the following questions, using the scale below.

	1 = not at all	2	3	4	5	6	7	8	9 = very much
How attractive (physically) is this person?	1	2	3	4	5	6	7	8	9
How desirable is this person as your potential romantic partner?	1	2	3	4	5	6	7	8	9
Do you find it easy to imagine a future with this person?	1	2	3	4	5	6	7	8	9
How interested are you in contacting this person?	1	2	3	4	5	6	7	8	9
How interested are you in meeting this person?	1	2	3	4	5	6	7	8	9
How interested are you in dating this person?	1	2	3	4	5	6	7	8	9
Is this person similar to you, in terms of your beliefs and values?	1	2	3	4	5	6	7	8	9
Are you interested in finding out more information about this person?	1	2	3	4	5	6	7	8	9