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Oppositional Identities: Dissimilarities in How Women and Men Experience Parent Versus Professional Roles

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As stereotypes of social groups undergo change, group members gain access to previously denied social and cultural roles. Although such access is desirable, to the extent that the behavior, traits, and attitudes required to succeed in a new role are in opposition to those required to do well in a still-valued old role, conflict in the self-concept may ensue. Specifically, the individual must necessarily fall short in social comparisons of the self to the ideal group member in 1 or both roles, threatening self-integrity. Examining the specific case of oppositional identities between career and mom roles, we argue that women respond to this conflict by shifting back and forth between activation of whichever identity is relevant in a given situational context in a way that men do not. This shifting of self-associations is hypothesized to deplete scarce cognitive resources, interfering with performance on a task that requires executive function capacity. In addition, to the extent the identities are viewed as trading off against one another, failure in 1 domain may be responded to by activating the alternate identity in an effort to restore self-integrity, again in a way that is not true for men. These hypotheses are explored across 4 studies, utilizing both college students in the midst of formulating—and working parents in the midst of negotiating—these identities.

Keywords: identity conflict, stereotype change, affirmation theory, gender roles

A primary human motivation is the need to view the self positively, to establish and maintain a sense of the self as a competent, capable, good, and moral individual (Baumeister, 1998; Steele, 1988). Some argue this need exists in the service of a larger goal, that is, the need to belong, to feel that one is an accepted, valued, and included member of the social world (Baumeister & Leary, 1995). In seeking to fulfill these needs, individuals navigate a variety of social identities (Correll & Park, 2005; Roccas & Brewer, 2002; Tajfel & Turner, 1986; Turner, Oakes, Haslam, & McGarty, 1994). A crucial part of maintaining a positive evaluation of the self is believing that one is successfully living up to or fulfilling expectations prescribed by these identities, that is, comparing favorably with the stereotypically ideal group member. According to Self-Evaluation Maintenance theory (SEM, Tesser, 1988; Tesser & Martin, 1996), one of the two core processes by which self-evaluation is monitored is through social comparisons (Festinger, 1954). Group stereotypes thus establish expectations against which the self is compared in this process of self-evaluation and ultimately provide the standard against which one's own performance is judged.

Importantly, for some combinations of identities, the attributes and behaviors that define the ideal fulfillment of one identity are in direct conflict with those that optimally fulfill a second, also important, identity (Roccas & Brewer, 2002), resulting in what we term *Oppositional Identities*. In this situation, the individual struggles to navigate these conflicting identities (Settles, 2004; Settles, Sellers, & Damas, 2002). A successful social comparison of the self to the ideal group member for one identity necessarily implies a suboptimal comparison of the self to the ideal group member for the conflicting identity, severely challenging the individual's goal of feeling successful and efficacious with respect to both of these group prototypes. To the extent that both identities are highly valued, the individual's sense of self-worth is all the more contingent on satisfying expectations in both roles, further increasing the experienced conflict around the impossible task of doing so (Crocker & Major, 1989; Crocker & Wolfe, 2001).

In this article we explore differences between women and men in how they experience their identities with respect to parent and professional roles. Specifically, we hypothesize that for women these identities are experienced as oppositional in nature, whereas the same is not true for men. We begin with a brief discussion of the organization of identities within the self-concept.

The Integrated Self-Concept: Identities and Organization

Maintaining a positive self-concept requires one to appraise the general self-concept. However, this turns out to be no simple task.

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Baumeister (1998) notes that direct awareness about the self is never available at such an abstract level—it is always situated and context-dependent. A person must gather information from his or her concrete experiences in situations related to his or her various context-dependent self-aspects and integrate that information to construct the self-concept in a more abstract and unified manner (Baumeister, 1998; McConnell & Strain, 2007).

These self-aspects (or identities) are often role-based, reflecting a person's involvement in and self-categorization into various domains (Crocker & Wolfe, 2001; Hogg & Turner, 1987; Linville, 1985; Linville & Carlston, 1994; Stryker & Serpe, 1994). Beginning in childhood, people perceive their existence in different roles and begin to develop identities based around them (see Harter, 2006, for a review). According to Role Theory (Kahn, Wolfe, Quinn, Snoek, & Rosenthal, 1964), roles are the result of expectations of others about appropriate behavior in a particular position. Thus, expectations of others exert pressure on an individual to fulfill a role in a certain manner, and success or failure within these roles is determined according to how well a person meets those expectations. Once children reach adolescence, they can use information about their successes and failures in these roles to understand their own competencies across these self-aspects. It is also at this point that people can begin aggregating this role-based information into their abstract self-view, developing an integrated self-concept whose global self-integrity is contingent upon competence in each domain (Crocker & Wolfe; Harter, 2006; Harter, Bresnick, Bouchey, & Whitesell, 1997). As new identities come on-line over time, these are added to the self-concept. At any given point in time, if two identities exist as part of the self-concept that require diametrically opposed behaviors for successful fulfillment, conflict in the self-concept ensues.

Oppositional Identities

In considering the psychological navigation of conflicting social identities, Hugenberg and Bodenhausen (2004) suggest that when one identity is activated the other is inhibited. In their research, all of the participants shared the social identity of university student, whereas only some also possessed the normatively conflicting identity of membership in a sorority or fraternity. Participants were either primed to think about the social category "Greeks" or not, and participants then completed a lexical decision task in which some words were relevant to the student stereotype and some were relevant to the Greek stereotype. They predicted and found an interaction between prime and word-type only among participants who belonged to the Greek system, such that when their Greek identity was primed (compared to when it was not primed), they were (marginally) faster at identifying Greek words and significantly slower at identifying student words. Among non-Greek students the interaction of prime by word-type was not significant. Hugenberg and Bodenhausen argued that the conflict between these social identities is managed by inhibiting one when the other is active (see also McConnell, 2011; Rydell, McConnell, & Beilock, 2009). Similarly, research on bicultural individuals suggests they navigate multiple, sometimes competing identities by switching cultural frames of reference (Benet-Martínez, Leu, Lee, & Morris, 2002).

Whether two identities are in conflict with one another depends on cultural expectations for what successful performance is in each. One particularly rich example of this phenomenon is the divergent experiences of men and women as they navigate the roles of professional and parent. Over the past 50 years women have made unprecedented inroads into the professional realm and have experienced a concomitant shift in their group stereotype such that they are now viewed as more daring, adventurous, and competitive than in the past (Diekman & Eagly, 2000). At the same time, women continue to value and embrace their identities as mothers. Yet many of the trait attributes and behaviors stereotypically associated with the ideal mom (e.g., affectionate, considerate, giving) are seemingly in direct opposition to those associated with the ideal professional (competitive, independent, ambitious; see Park, Smith, & Correll, 2010). At the extreme, the ideal professional is one who is accessible to his or her company/clients at all times, who can at the drop of a hat make him or herself available as needed. Ironically, the ideal mom is similarly viewed as having unconstrained availability, but in this case, to her children. Obviously, satisfying both expectations is problematic (Blair-Loy, 2003). Consequently, it is difficult for a woman to simultaneously evaluate herself positively in both of these domains because to the extent she compares well with the ideal mom, she necessarily compares poorly with the ideal professional, and vice-versa. Hence, we suggest, women experience the identities of parent and professional in an oppositional manner.

Men, in contrast, do not experience the same degree of opposition largely because the roles of dad and professional share much more in common. Historically dads are expected to be self-reliant, rational, and strong, all characteristics also admired and expected of professionals. Moreover, one of the principal expectations of the ideal dad is that he provides financially for his family, and the best means for doing so is through a job in which he is accorded status and stability. Thus meeting his goal of "successful professional" is one way to substantially meet his obligations as a good father, affording positive self-evaluations. His identity as a dad is nested to some degree under his career identity. Of course there are limits to this. The dad who spends all his time at work is viewed as being aloof and uninvolved in his children's lives. Still, it is entirely possible for a man to spend a significant portion of his waking hours involved in career-related pursuits and have this reflect positively on his self-image as a "good dad." In contrast, it is difficult to imagine a woman reflecting on the hours she has spent in the past week at work thinking, "That really does go to show what a good mom I am." This experienced opposition in identities by women, we suggest, derives from long-standing stereotypes about the ideal mom versus professional, relative to the ideal dad. This hypothesized difference between moms versus dads in the degree to which these roles conflict in content with that of professional is the focus of Study 1.

Consequences of Oppositional Identities

The research presented in this article was designed to explore the hypothesis that there is greater redundancy in dad and professional identities than in mom and professional identities (Study 1), with the consequence that women experience the roles more in opposition to one another than do men. Specifically, we hypothesize the following: (1) Because of the oppositional nature of the roles, even among young people (i.e., undergraduates) still forming these identities, women will activate whichever identity is

relevant to a given context, and they will switch back and forth between the identities depending on the context. Men are expected to activate primarily their career identity, and their parent identity is to some degree subsumed under their career identity (Study 2). (2) This shifting of identities for women is cognitively taxing, using up scarce mental resources, and resulting in depletion of executive functioning capacity (Study 2). (3) The oppositional nature of the identities may have important consequences for how women respond to a failure in the career domain. Specifically, they may turn to their parent identity as a means of affirming the self (Steele, 1988; see Rydell et al., 2009), which, although perhaps helpful in the short run, has the potential to result in disidentification with the career domain over time (Roccas & Brewer, 2002; Steele, 1997). For men, because the two identities are to some degree redundant, a failure in the career domain cannot be assuaged by activating the parent identity; instead we expect men in this circumstance to continue to attend to and process their career identity because this ultimately is the key to restoring self-integrity (Study 3). (4) Finally, we expect to see parallel sorts of effects among an older sample of participants actively involved in the work force, many of whom are parents (Study 4).

Study 1

Although several scholars have noted that the attributes of the ideal mom are more at odds with those of the ideal worker than are the attributes of the ideal dad (Fuegen, Biernat, Haines, & Deaux, 2004; Ridgeway & Correll, 2004; Stone & Lovejoy, 2004; J. C. Williams & Cooper, 2004), we were unable to identify empirical work that speaks directly to this point. Previous research from our lab used an implicit task to assess overlap in the categories or roles of mom, dad, and professional (Park et al., 2010). The results clearly demonstrated stronger implicit associations between the roles *dad* and *professional* than *mom* and *professional*, whereas the roles *mom* and *parent* were more strongly associated than *dad* and *parent.* In this work, the categories were represented by images associated with the roles (e.g., baby bottle and crib versus executive desk and briefcase). While the results are consistent with the argument that the identities of *mom* and *professional* share less in common than those of *dad* and *professional*, the research did not measure the stereotype content of the roles. This is a critical piece of the current argument. It is the opposing *content* of the trait stereotypes of mom and professional roles that results in women experiencing these identities in opposition to one another because of the conflict generated when they engage in social comparison to the ideal prototype for each role. Accordingly, Study 1 examined overlap in the trait attributes judged as characteristic of "moms in general," "dads in general," and "professionals in general."[1]

Method

Participants. Participants were recruited through Amazon's Mechanical Turk marketplace. A total of 310 respondents (195 or 63% females) were randomly assigned to rate one of three target groups—moms, dads, or professionals—or to judge the favorability of the traits. These were distributed into the rating conditions as follows: moms (81 total, 50 females), dads (79 total, 50 females), professionals (74 total, 48 females), and favorability (76 total, 47 females). The mean age of respondents was 33.68 (range = 18 to 81; median = 30). Forty-one percent of the respondents were parents with an average of 2.17 kids (mean age of the youngest child = 13.34, range was 8 months to 50 years). The sample was predominantly White (83%), with 9% African American, 4% Latino, 8.7% Asian, and 1.3% other (participants were allowed to check more than one ethnic group). The highest level of education achieved was distributed as follows: 1% no high school diploma, 11% high school diploma, 33% some college, no degree, 10% an associates degree, 31% a bachelor's degree, and 17% a graduate degree.

Procedure. A total of 145 traits were selected by combing the literature on gender stereotypes (e.g., Diekman & Eagly, 2000; J. E. Williams & Best, 1990), and parent stereotypes (Ganong & Coleman, 1995; Troilo & Coleman, 2008). We included equivalent numbers of positive and negative traits identified in the literature as stereotypic of each of the groups. Eight additional traits that are properties of living beings (e.g., *mortal, human, living*) along with *male* and *female* were included to provide a quality check on the data.[2]

To begin, participants were asked to think about the group they had been randomly assigned to (e.g., "Think about moms in the United States") and to write 3–5 sentences describing the group as they might to someone visiting from a foreign country. Next they were asked to rate the extent to which each of the traits described the "typical or average" group member (1 = *Not at all*, 7 = *Extremely so*). Those assigned to the favorability condition only rated how favorable or unfavorable each trait was (1 = *Very Unfavorable*, 7 = *Very Favorable*). The traits were presented in a different random order for each participant. A set of demographic items was then completed, followed by debriefing and instructions for payment.

Results

For each trait, the favorability ratings were used to test whether it differed from the scale midpoint. Seventy-two traits were rated as significantly positive, and 65 were rated as negative. The mean ratings for eight traits did not differ from the scale midpoint and,

[1] A substantial body of research examines the correspondence between stereotypes of men and women with that of managers (e.g., Schein & Mueller, 1992; Powell, Butterfield, & Parent, 2002). It was essential to the current work, however, to directly assess stereotype overlap of *moms* and *dads* (as opposed to women and men) with professionals. Indeed data we report elsewhere suggests that on key dimensions, dads, moms, and women are perceived similarly to one another (e.g., all three groups are characterized as affectionate, forgiving, and supportive) and distinctly from men (who alone are seen as, for example, boastful, daring, and intimidating; Park, Banchefsky, & Reynolds, 2013). In this work, the correlation in trait profiles of dads was higher with moms ($r(145) = .83$) than with men ($r(145) = .56$). For the present argument then, it was crucial to show that even with high trait overlap between moms and dads, dads still uniquely share more attributes with professionals than do moms.

[2] For participants assigned to rate moms, dads, or professionals, they were eliminated if they failed both of the gender checks for the target group (e.g., rated moms at 3 or below on the "female" trait) *or* incorrectly responded to 4 or more of the 6 "human" items (e.g., rated the group at 3 or below on human, mortal, living, etc.). Only three participants met this criterion. For those assigned to make favorability ratings, we selected 16 traits dispersed throughout the survey with clear valence implications (e.g., *cruel* and *good-natured*). Participants were eliminated if they rated over half of either the negative or the positive of these traits using the wrong half of the scale. Five participants met this criterion for exclusion. Thus, a total of 8 participants (2.5% of the original sample; 5 in the favorability condition, 2 in the professional condition, 1 in the dad condition) failed the data quality checks.

hence, were treated as neutral. Next, the mean rating on each trait for each group was calculated across raters. These mean trait ratings for each of the three target groups were correlated with one another (across traits) to provide a measure of the degree of overlap in the trait profiles. This served as the principle test of the hypothesized difference in the magnitude of trait overlap for moms and professionals relative to dads and professionals. These correlations were computed both across all traits and separately within just the positive and within the negative traits. Also, the mean trait ratings were computed separately based on respondent gender and parental status, and the corresponding correlations were examined in order to test for the generalizability of the findings across these demographic variables (there were too few participants per group to break the data simultaneously on both respondent gender and parental status). The differences in the correlations were tested using the Hotelling-Williams test for two dependent correlations (Steiger, 1980). Table 1 summarizes the correlations and significance tests.

In support of the primary hypothesis, the correlation between dads and professionals, calculated across all traits, was significantly stronger than that between moms and professionals (.71 vs. .59). This difference was due primarily to greater shared overlap in positive traits by dads and professionals than moms and professionals (.49 vs. .12). That is, in particular the positive qualities viewed as characteristic of a dad shared more in common with those viewed as characteristic of a professional than was true of a mom and a professional. To better understand the content of this shared overlap, Figure 1 presents the 25 positive traits rated as most characteristic of each of the three groups and depicts which of those were shared in common. A trait was considered characteristic of a group if its mean rating was significantly higher than the scale midpoint. While dads and professionals shared a great many of the same traits in their top rated 25 (16 total, or 64%), it is clear from Figure 1 that moms and professionals shared many fewer (7 traits, or 28%). Moms and dads shared 14 positive traits (56%).

This greater trait overlap for dads and professionals relative to moms and professionals was not present for negative traits (.72 vs. .68). In general, the correlations in the profiles were much higher for the negative than positive traits. Importantly, most of the negative traits were viewed as *not* characteristic of any of the groups. As Figure 2 shows, only 24 negative traits were rated as significantly above the scale midpoint for any of the three groups. Only 5 of these were rated as characteristic of moms and 6 of dads (with 4 of these shared by all three groups). The magnitude of the correlations for the negative traits are likely driven in part by perceptions of relatively low base-rates for particular traits in the general population. For example, participants rated all three groups as very low on cruel, hostile, and untrustworthy, and it is the *lack* of the presence of these traits that results in the relatively high overlap in the trait profiles between the groups.

Table 1 also presents the correlations broken down by participant gender and, separately, parental status. The results are identical to those reported above for the full sample, suggesting the perceptions generalize across these important demographic characteristics.

Discussion

The results of Study 1 provide evidence that the trait attributes seen as characteristic of professionals share more in common with those seen as characteristic of dads than moms. This was true across all traits, and true looking just within positive traits. No difference was present for negative traits. Importantly, most of the

Table 1
Correlations in Mean Trait Profiles for Moms, Dads, and Professionals (Study 1)

Participant sample	All traits	Positive traits	Negative traits
n (traits)	145	72	65
All participants ($n = 310$)			
Dads & professionals	.71*	.49*	.72*
Moms & professionals	.59*	.12	.68*
t test of difference	3.68*	3.17*	<1
Female participants ($n = 195$)			
Dads & professionals	.68*	.43*	.65*
Moms & professionals	.60*	.14	.66*
t test of difference	2.49*	2.59*	<1
Male participants ($n = 115$)			
Dads & professionals	.74*	.54*	.77*
Moms & professionals	.54*	.08	.66*
t test of difference	4.68*	3.65*	1.76†
Parent participants ($n = 127$)			
Dads & professionals	.71*	.42*	.71*
Moms & professionals	.62*	.12	.64*
t test of difference	3.27*	2.61*	1.17
Nonparent participants ($n = 183$)			
Dads & professionals	.71*	.54*	.71*
Moms & professionals	.55*	.13	.68*
t test of difference	3.75*	3.33*	<1

Note. The difference in the correlations was tested using the Hotelling-Williams test for two dependent correlations (Steiger, 1980; http://psyphz.psych.wisc.edu/~shackman/mediation_moderation_resources.htm).
† $p < .10$. * $p < .01$.

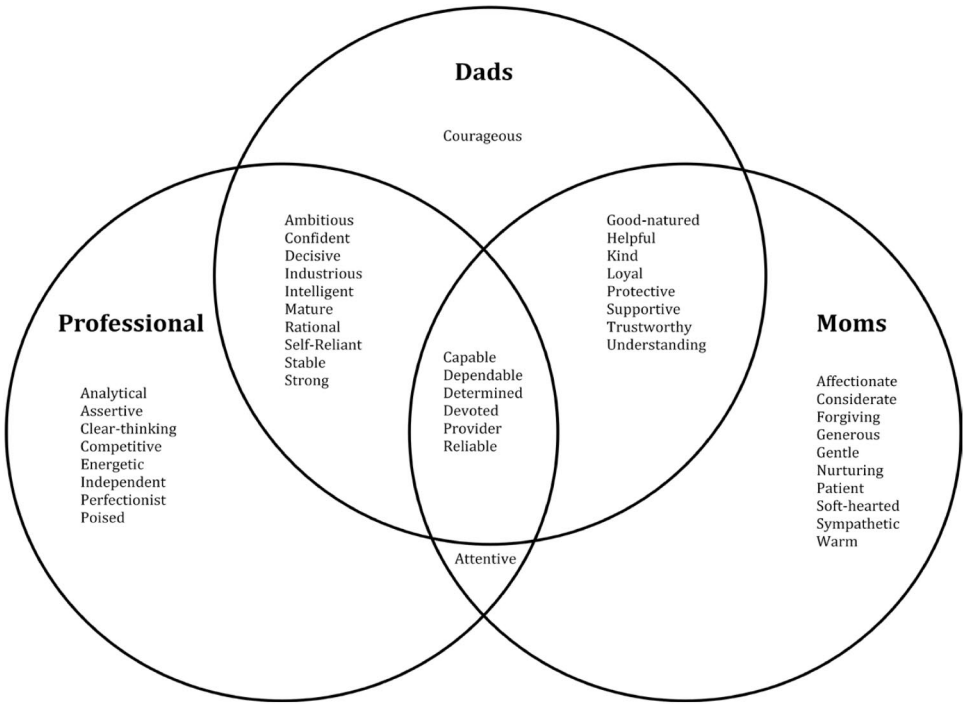

Figure 1. Overlap in the 25 positive traits rated as most characteristic of moms, dads, and professionals (Study 1).

negative traits were viewed as not characteristic of any of the groups. These patterns held across male and female respondents, as well as those who themselves were and were not parents. These data suggest then that men can embody the positive trait characteristics associated with being a dad and at the same time successfully display those of the prototypic professional. A woman, in contrast, must don a different persona in her quest to meet societal expectations for a mom than when she attempts to fulfill her career aspirations. Indeed the only correlation in Table 1 that was not significant was the perceived overlap in positive trait characteristics for moms and professionals, and this was true for every subsample of participants examined.

Study 2

Study 2 tests the hypothesis that college women, more so than college men, experience parent and professional identities in opposition to one another. As such, they are predicted to shift activation of these two aspects of their self-concept as they move back and forth between considering their goals in the two domains. Although perhaps adaptive for producing role-consistent behavior (Markus & Wurf, 1987; Wheeler, DeMarree, & Petty, 2007), this process of shifting self-definitions should also come with a cost. Because experiencing the roles as oppositional is argued to be psychologically taxing, this shifting process was predicted to deplete cognitive resources, resulting in decreased performance on a subsequent task that required executive functioning capacity (similar to ego depletion effects, Baumeister, Bratslavsky, Muraven, & Tice, 1998; Schmeichel, 2007; see Miyake, Friedman, Emerson, Witzki, & Howerter, 2000). Males were not expected to show this shifting pattern or the corresponding cognitive costs.

To test these hypotheses, participants spent time thinking and writing about their goals in both the parent and career domains (in a counterbalanced order) and completed two blocks of a Go/No-Go task (GNAT; Nosek & Banaji, 2001) pairing the self with images representing each of the two domains following each goal prime. The GNAT block matching the just-primed domain was expected to show stronger self-associations (the association between *me* and a baby bottle is stronger having just considered my goals in the parenting domain) than the GNAT block that did not match the just-primed domain (after considering my goals in the parent domain, associations between *me* and a briefcase are relatively weaker). The magnitude of this "Match Effect" reflects activation of the just primed identity relative to the not-primed identity. Females, but not males, were predicted to show strong match effects that were equivalent in size in the two domains. That is, when thinking about their goals in the parent domain, females should activate self-parent associations over self-professional associations, and conversely following consideration of their goals in the career domain, reflecting shifting self-concepts across the two roles. This is the first hypothesis tested in Study 2.

A reverse digit span task was used to assess depletion of executive function capacity (Schmeichel, 2007). In this task, participants view a string of digits one at a time followed by a cue to recall the digits either in the order they were presented (forward) or in a backward order (reverse). Having to report the digit strings in a reverse order requires an updating of working memory, a task that relies on executive control. To the extent that executive function capacity has been reduced by an immediately preceding task, performance on the reverse relative to forward trials should be hampered. Participants completed the reverse digit span task

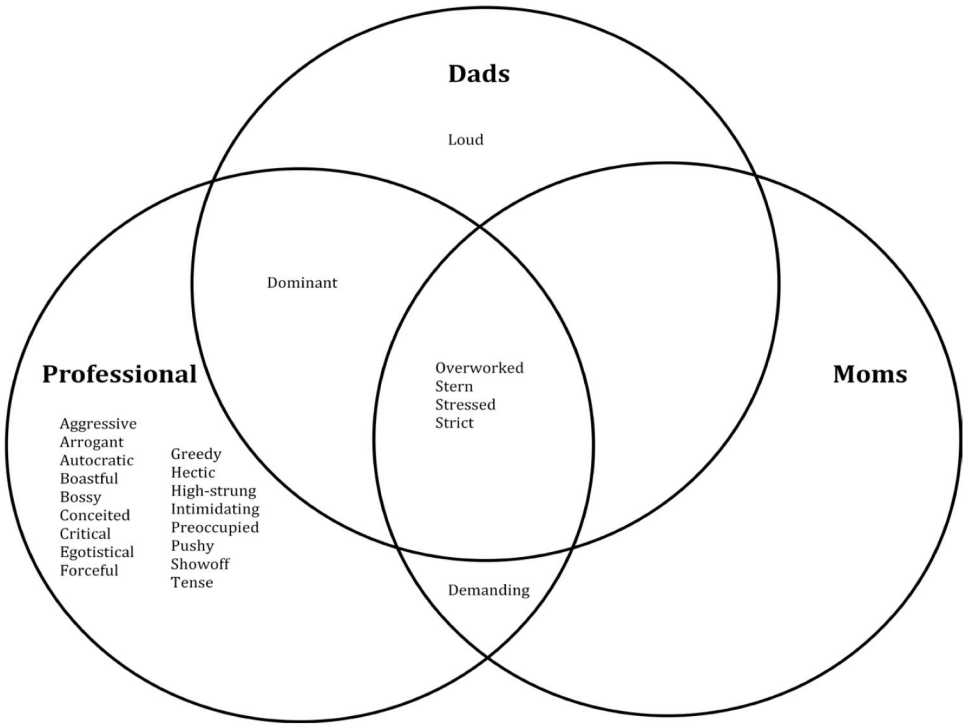

Figure 2. Overlap in the full set of negative traits rated as characteristic of moms, dads, and professionals (Study 1).

either prior to or following the GNAT blocks. We predicted that for female participants, when they first considered their goals in the two domains and completed the GNATs assessing their corresponding self-associations, the experience of having to shift their self-concepts would deplete executive function resources, resulting in poorer performance on the reverse digit span task. This effect was not expected when the digit task was performed prior to the GNATs (because the shifting self-concept task had not yet been performed and hence no depletion should have occurred) or for male participants (who were not predicted to experience shifts in their self-concepts). This is the second hypothesis tested in Study 2.

Method

Participants. A total of 256 college juniors and seniors were recruited for participation in the research (128 females). They were specifically selected from three majors chosen to vary by gender distribution in the major. Eighty-six participants were Psychology majors (41 male, 45 female), 85 participants were Engineering majors (42 male, and 43 females), and 85 participants were Business majors (45 males, and 40 females). Psychology is a major dominated by females (about 78%, National Center for Educational Statistics [NCES], 2004), engineering is dominated by males (about 80%), and business is roughly evenly split. We expected that young women would experience the conflict in parent and professional identities in a similar manner across these disciplines. That is, experiencing these roles as oppositional happens for women because of broader cultural definitions and is not specific to, for example, male dominated fields. Still, it seemed important to directly assess this by including students from majors with distinctly different gender distributions. The study lasted about an hour and participants were compensated $20.

Materials and procedure. Participants completed two primary tasks: (1) GNATs measuring implicit self-associations with each domain once following a prime to reflect on goals in the parent domain and once in the career domain and (2) a reverse digit-span task to measure executive function capacity. Order of completion of the tasks was manipulated between subjects.

GNAT and priming tasks. The priming task asked participants to consider their goals in each of the two domains. Specifically, for the parent role they were asked whether they planned to be a parent, if so to explain why, what it meant to them, how important it was to them, how many children they wanted, and at what age they anticipated starting to have children. To help encourage them to think concretely about their goals in this domain they were asked to imagine "a typical day with your one-year old baby," and to describe "in as much detail as possible—as if a video camera were recording you" what the day would consist of and what activities they would engage in. A parallel set of questions asked about career goals. Participants spent about 5 min completing a given goal priming task.

A GNAT block consisting of 100 trials was constructed sampling 20 items each from the categories *Me* (*Me, I, Myself, Mine*), *Them* (*They, Them, Theirs, Their*; Nosek, Banaji, & Greenwald, 2002), parent images, and professional images (see Figure 3), and 10 items each from names and images of birds as irrelevant distractors (see Park et al., 2010). Stimuli were sampled without replacement until all items in a given category were presented, and then sampling began again. Participants responded to this set of

Figure 3. Parent and professional stimuli used in the go/no-go task (Studies 2, 3, and 4).

items once with instructions to "*Go*" (by pressing the spacebar as quickly as possible) anytime they saw an item from either the *Me* or *Parent* categories and once to "*Go*" anytime they saw an item from either the *Me* or *Professional* categories. These category labels appeared at the top of the presentation screen. These two blocks were performed twice, once following the parent goal prime and once following the career goal prime, for a total of four GNAT blocks. Stimuli were presented for a 500 ms window, during which time a response could be made, with an inter-stimulus interval of 150 ms. Feedback was provided in the form of a large red "X" if the spacebar was pressed to one of the nonfocal stimuli (incorrect go or "false alarm" trials) and two large blue exclamation marks if the spacebar was not pressed within the 500 ms window to focal stimuli (timeout or "miss" trials). Participants began with a training sequence that explained the GNAT and provided practice using bird names and red objects.

Following the first goal prime, participants completed the GNAT block matching the prime, followed by the alternate GNAT. Thus if they first performed the parent goal prime, they then completed the me + parent GNAT followed by the me + professional GNAT. Next they completed the second goal prime, the GNAT block matching that goal, and the alternate GNAT. The GNAT block matching the prime was always completed first in order to examine the immediate effect of the prime on identity activation in that domain, relative to identity activation in the non-primed domain, and the difference between d' on these two GNAT blocks constituted the primary dependent variable (which we refer to as the Match effect). Prime domain (parent vs. career) and GNAT block (me + parent vs. me + professional) were both manipulated within subject. Order of completion of the priming and GNAT blocks (parent first vs. career first) were counterbalanced within all participant gender and academic major combinations.

Reverse digit-span task. In this task participants were presented with single digits for 1.25 s each. After a set of either 5 or 7 digits was presented, a prompt appeared instructing them to recall the string either in the direction presented (forward order) or in the reverse order from presentation. Participants typed their responses one digit at a time into the computer and received accuracy feedback. A total of 16 digit strings were presented, half each of length 5 and 7, with half each being recalled in the forward and half in the reverse direction.

Design. Participants were randomly assigned to task order (GNAT first vs. reverse digit span task first), with equal numbers within all participant gender and academic major combinations. Task order was predicted to matter for performance on the reverse digit-span task (greater depletion only for females who first experienced shifting self-concepts on the GNAT). Task order was not expected to matter on the GNAT blocks (the magnitude of shifting self-concepts should not be different when participants first recalled a series of digit strings in forward or reverse order).

Results

Shifting self-associations. The first hypothesis tested in Study 2 was that, following consideration of their goals in both the parent and career domains, women would show large Match effects reflecting stronger self-associations as indexed by higher d' value on the GNAT block that matched (versus did not match) the just primed domain. The magnitude of these Match effects was predicted to be equivalent in size for women across the career and parent domains, indicating that they have self-concepts relevant to each but that when one is activated, the other is not. Male participants were not expected to show this shifting in identity activation.

Responses from the GNAT blocks were used to calculate d' (proportion of Hits to the focal categories [correct Go response] minus the proportion of False Alarms to the background categories [incorrect Go response], after transforming these proportions to z-scores). The difference in the d' score on the GNAT block that

matched minus mismatched the prime (Match effect) was analyzed as a function of Prime Domain (Career vs. Parent Prime), participant gender (Gender), and academic major. As anticipated, with the exception of one effect (see footnote 3), the results described below did not depend on academic major, all $Fs(1, 245) < 2.07$, $ps > .15$.

Note that each participant provided a set of d' scores following both the first and second goal prime. The primary hypothesis of shifting self-concepts for women was predicted to result from considering their goals in *both* domains; that is, the critical effect was expected to emerge on the second set of GNAT blocks. Performance on the first set of GNATs served as an initial measure of self-associations following consideration of goals in just one of the two domains. The Match effects (i.e., the difference in d' between the GNAT matching versus mismatching the prime) are plotted in Figure 4. Following the first prime, the Match effect was significantly greater than zero, $F(1, 245) = 23.14$, $p < .001$, and its magnitude depended on the interaction of Prime Domain and Gender, $F(1, 245) = 22.66$, $p < .001$. As is clear from the left panel of Figure 4, women showed stronger Match effects in the parent domain, whereas men showed stronger Match effects in the professional domain.

Following the second prime, that is, once participants considered their goals in both domains, women demonstrated a significant Match effect in *both* domains (see the right panel of Figure 4). For men, however, even after both goals were considered, they demonstrated only a Match effect following the career prime. The Match effect following the second prime was significantly different from zero, $F(1, 245) = 115.56$, $p < .001$, and it was significantly larger in the career than parent domain, $F(1, 245) = 8.24$, $p < .005$. Critically, however, this depended on gender, $F(1, 245) = 25.30$, $p < .001$, for the Domain × Gender interaction. Following consideration of their goals in both domains, women demonstrated Match effects, that is, significantly greater activation of the just primed self-concept than of the non-primed self-concept, and they did so in **both** domains. Men, in contrast, demonstrated only an increase in self-associations in the career domain following that prime, and no increase in their self-associations to the parent domain. Indeed, looking within each pair of bars in Figure 4, the Prime Domain effect was always significant (all $Fs > 11.22$, $ps < .002$ *except* for females following the second prime. Here, the Match effects were of equivalent size across the two domains, $F = 2.25$, $p = .14$. Moreover, the Match effect patterns depicted on the left versus right side of Figure 4 were statistically different as evidenced by the Gender × Prime Domain × First versus Second Prime interaction, $F(1, 245) = 5.29$, $p < .03$. No other effects were significant in the analysis of the d' values from the GNATs.[3,4]

Depletion of cognitive resources. The second hypothesis tested in Study 2 was that experiencing these shifts in the self-concept should use up finite cognitive resources for women, resulting in short-term decrements on an executive function task. To assess this, we examined performance on the digit span task. Specifically, recalling digits in a reverse direction relies on executive function capacity to update working memory. Therefore, the difference in performance in recall of digit strings in the forward minus reverse direction is an indicator of depletion of cognitive resources. This "Direction effect" was hypothesized to be greater for women, but *only* when the task was performed after the GNATs. It is the experience of shifting self-concepts activated in the course of considering one's goals in the parent and career domains that is argued to use cognitive resources, resulting in depletion. Consequently if the reverse digit span task was performed prior to the GNATs, no depletion should yet have occurred, and performance should be better than when it followed the GNATs. For men, their goals in the career and family domains are not experienced as opposing one another, and hence thinking about these should not deplete cognitive resources. Thus performance on the reverse digit span task should not be affected by task order.

The Direction effect (correct report of digit strings recalled in the forward minus reverse direction) was thus analyzed as a function of Gender and Task Order. Academic Major was included as a predictor but produced no effects, all $Fs < 1$. The most straightforward result given our predictions would be a Gender × Task Order interaction, but this was not significant, $F < 1$. However, given our theoretical rationale, it may be only those women who do in fact experience a shift in their self-definition over the GNAT blocks that will demonstrate depleted cognitive resources. Although on average women experienced such shifts, there was substantial variation in the extent to which this was true. To explore this, we calculated a measure of shifting self-concepts in the parent and career domains. Because participants completed each type of GNAT (me + parent and me + professional) twice, once following the parent prime and once following the career prime, it was possible to compute shifts in activation of each aspect of the self-concept. Specifically, the difference in the magnitude of the d' to the me + parent GNAT was computed when parent minus career goals were primes (and similarly the d' to the me + professional GNAT when career minus parent goals were primed). These two scores, called Shifting Parent Identity, and Shifting Professional Identity, respectively, were mean centered and entered (in separate regressions) along with Gender, Task Order, and all interactions to predict the Direction effect.

The expected 3-way interaction between Gender × Task Order × Shifting Parent Identity was significant, $F(1, 245) = 6.86$, $p < .01$. This 3-way interaction is depicted in Figure 5. For women, the Task Order × Shifting Parent Identity interaction was significant, $F(1, 122) = 9.55$, $p < .003$. When they performed the GNATs first (experiencing shifting identities), those who experienced the largest shifts in their me + parent identities from the parent to career prime showed the greatest difficulty on the reverse digit span task. The simple slope for Shifting Parent Identity predicting the Direc-

[3] The only effect involving Academic Major across all analyses of the Match effect was for the scores following the first prime. The strength of the Prime Domain × Gender interaction varied by Major, $F(1, 245) = 4.16$, $p = .05$. Directionally it was the same for all three Major groups (higher Match effects in the parent domain for women and in the professional domain for men), but this pattern was strongest for Business and Psychology Majors, and weakest for Engineering Majors. In particular, female Engineering Majors showed the smallest domain difference of all six groups, and male Business Majors showed the largest domain difference.

[4] We also checked to see whether Task Order (completing the GNATs prior to or after the reverse digit span task) mattered for the Match effect scores. No effects involving Task Order emerged for the Match scores following the first prime, all $Fs < 1$. For those following the second prime, the Domain × Task Order interaction approached significance, $F(1, 233) = 2.82$, $p = .10$, but importantly, did not involve Gender. That is, the Domain × Gender interaction (the effect of primary interest) did not depend on Task Order, $F(1, 233) = .40$, $p = .69$.

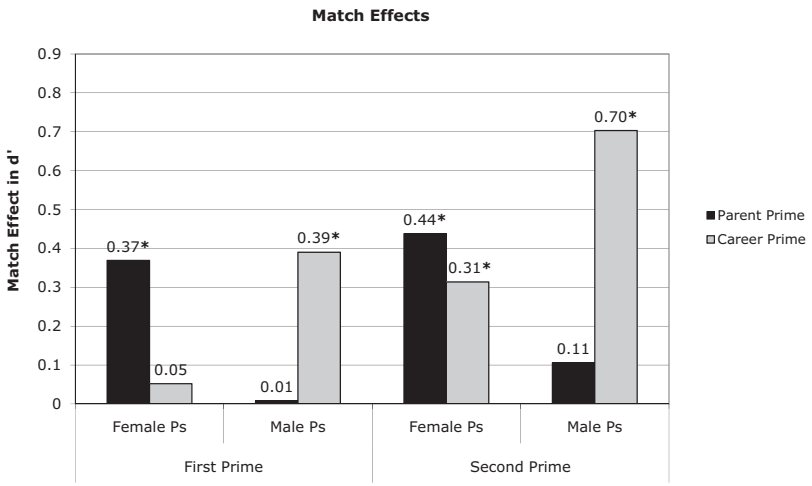

Figure 4. Match effects from the go/no-go task as a function of Prime Domain, First versus Second Prime, and Participant Gender. Match scores reflect the difference in d' to the primed minus nonprimed domain (Study 2). Following the second prime, females show significant and equivalent activation of the just primed self-concept across domains, whereas males show activation only of the professional self-concept following the career prime. Ps = Participants.

tion effect for women in the GNAT-first order was significant, $F(1, 59) = 7.78$, $p < .003$. In contrast, the slope for females who performed the reverse digit span task prior to considering their identities in the two domains did not differ from zero, $F(1, 61) = 1.64$, $p = .21$. For males, the 2-way Task Order × Shifting Parent Identity interaction was not significant, nor were either of the simple slopes, Fs < 1.[5] Unlike shifts in parent identity, the Shifting Professional Identity did not predict depletion of cognitive resources. Our participant sample (juniors and seniors in college) may be more homogenous with respect to their career goals at this point in their college careers; there may be more variance in their parent identities, resulting in shifting parent, but not professional, identities predicting depletion of executive function resources.

Discussion

In Study 2, we predicted that college women would show a pattern of shifting activation of their self-concepts as a function of priming their goals in the career and parent domains. Specifically, we predicted and found that following consideration of their goals both as a parent and in their career, women would show activation of their just primed identity, significantly more so than the unprimed identity. Importantly, this Match effect occurred in both the parent and the career domains. Thus when thinking about their goals in the parent domain, women easily associated themselves with images of baby bottles and cribs, and not with briefcases and laptops. But when asked to think about their goals in the career domain, the exact reverse pattern of activation emerged, suggesting a trade-off in the self-concepts of these young women. Moreover, experiencing these shifting self-concepts, specifically with respect to the parent domain, appeared to result in depletion of executive function resources. Women who first completed the priming task and GNATs subsequently showed greater difficulty in updating working memory to report digit strings in a reverse relative to forward order, the more their self-associations in the parent domain shifted in response to the parent versus career primes. This was not true for women who performed the digit span task prior to experiencing shifting self-concepts.

In contrast, men showed only a pattern of very strong activation of their professional identities following the career prime, and no parallel activation of a parent identity following the parent prime. Their performance on the reverse digit span task was unaffected by task order as well as by the magnitude of shifting identities in either the parent or career domain. We argue this is because the men do not experience the roles of parent and professional as oppositional in nature. Of note, these effects held across three majors with very different gender compositions.

One advantage of the current methodology is that it directly assesses the strength of self-pairings with the primed domain. In the Hugenberg and Bodenhausen (2004) study, the primary measure was better performance on role-congruent words (e.g., *party* or *keg*) in a lexical decision task. While this pattern certainly indicates activation of the primed category (e.g., Greek), and differential activation for those who do versus do not belong to the group, it does not directly assess whether associations of the *self* with the category are differentially active.

The argument that women experience the relationship between their parent and professional identities as oppositional, whereas men do not, suggests that the two genders may react differently to failure feedback regarding performance in one of the domains. Specifically, because women experience the two roles in opposition, following discouraging feedback on a work-related task, they may manage this by turning their focus to the parenting domain, activating this identity and decreasing their current self-associations to the professional domain. Because men do not

[5] The two-way Task Order × Shifting Parent Identity effect was also significant, $F(1, 245) = 5.76$, $p < .02$, but this is subsumed under the 3-way interaction just described.

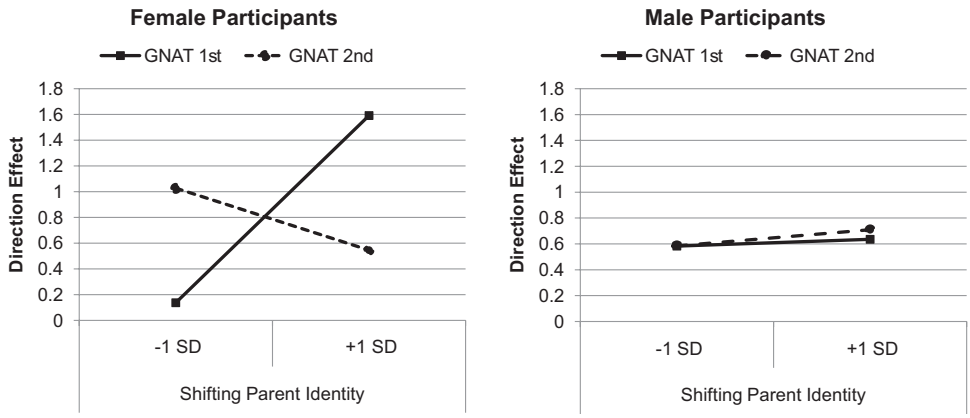

Figure 5. Performance decrement on the reverse digit-span task (# correct on forward minus reverse trials) by Gender and Task Order as a function of Shifting Parent Identity (d' to me + parent GNAT following Parent Prime versus Career Prime). Shifting Parent Identity is plotted at –1 *SD* and + 1 *SD* (Study 2). GNAT = go/no-go task.

experience the roles as conflicting, but rather to some degree as redundant (i.e., if you are succeeding as a professional you are also succeeding as a dad, see Study 1), it is not helpful to respond to failure on a work task by activating the parent identity because failing at work also implies failing as a dad. If the focus remains on just these two roles, and given the stronger professional than parent identity men demonstrated in Study 2, their most probable reaction to a work-relevant failure is further activation of their professional identity, as if redoubling their focus to succeed in this domain. These ideas were the focus of Study 3.

Study 3

When the self experiences failure in a given domain, the "psychological immune system" can promote adaptation through various indirect means including focusing on a positive self-conception in an alternative domain unrelated to that in which the threat was experienced (i.e., self-affirmation, Gilbert, Pinel, Wilson, Blumberg, & Wheatley, 1998; Sherman & Cohen, 2006; Steele, 1988), or strengthening ties with important social groups (Hogg & Abrams, 1993; Turner et al., 1994). Such strategies reduce the threat to one's overall sense of self-integrity by replacing a threatened identity with another positive self-conception, thus reducing the accessibility of the negative information (Koole, Smeets, van Knippenberg, & Dijksterhuis, 1999). These strategies have consistently been shown to effectively restore self-integrity (Sherman & Cohen). Moreover, the psychological immune system is unitary and satisficing, such that a variety of strategies can substitute for one another in the common purpose of restoring self-integrity back above a critical threshold (Tesser & Cornell, 1991; Tesser, Crepaz, Collins, Cornell, & Beach, 2000).

Although in general such processes are beneficial and aid in restoring a positive sense of self, we suggest that when one's performance in two roles is experienced as oppositional, there is a danger that the process will lead to disidentification with the threatened role over time. That is, because mastery and success in one domain competes with perceived mastery in the oppositional domain, activation of the oppositional domain in an effort to affirm the self may result in reduced attachment to the threatened domain. Indeed, a substantial sociological literature documents differential work–family outcomes for women versus men, and their attendant economic and political ramifications (e.g., Bianchi, Casper, & King, 2005; Handelsman et al., 2005; Hirshman, 2005; Jacobs & Madden, 2004; Mason & Goulden, 2004). According to one survey, highly educated women are substantially more likely to report leaving work voluntarily (37%) than their male counterparts (24%), and of those who leave, the most frequent reason given is for "family time" (44% for women vs. 12% for men; Hewlett & Luce, 2005). For a woman given discouraging feedback on a work task, she may turn her energy to the parenting domain, diminishing her attachment to her professional identity (see Aydin, Graupmann, Fischer, Frey, & Fischer, 2011, for a similar argument in response to social exclusion; and von Hippel, Walsh, & Zouroudis, 2011, and von Hippel, Issa, Ma, Stokes, 2011, for a similar argument regarding stereotype threat and disidentification with femininity).

Because males experience the roles as more redundant, failure in one domain bleeds over to a sense of failure in both domains. As a result, activating the alternative identity is ineffectual in restoring self-integrity. Rather, given the findings from Study 2 of stronger self-associations for men to their professional identities, we suggest that following failure on a work relevant task, these young men will increase their current activation of their professional self-association as that is the more promising means for reestablishing a positive sense of self. Central to this argument is the idea that in general, men view the roles of parent and professional as going together and perhaps facilitating one another, whereas women view them as oppositional. If women are exposed to a persuasive message arguing that the two roles can facilitate rather than oppose one another, then they (like their male counterparts) may respond to failure on a work relevant task by increasing activation of their professional identities, as if determined to succeed in this domain.

To explore these ideas, we examined the effect of a failure experience in the work domain on the activation of parent versus

professional self-associations. We predicted that for women there would be greater activation of their parent identity (relative to professional) following failure versus success. Men were not expected to show this same tradeoff because for them the identities are not viewed in an oppositional, but rather a related, manner. Instead, men were expected to increase their self-associations in the professional domain following a failure experience, perhaps indicative of an increased commitment to their career goals. Additionally, we hypothesized that we might be able to promote an increased activation of professional identities for women as well if they too came to view the roles as facilitative, rather than oppositional, in nature. In this case, self-association patterns for women following failure feedback on a career related task should parallel those for men. Given the weak parent self-associations for men demonstrated in Study 2, even when the roles were framed as oppositional we did not anticipate that they would activate their parent self-concepts. The parent identity for these young college men simply is not prominent as an alternate source of self-construal and hence is unlikely to be activated in an effort to restore self-integrity.

We suspected that the greater activation of parent identities by women following a failure under the oppositional frame might be especially (or perhaps only) true for those who viewed themselves as highly competent in these two domains. This prediction came from two literatures. First, Baumeister (1998, p. 696; Baumeister & Tice, 1985) argued that those high in self-esteem are more likely to avoid a particular domain following a failure experience if they have the option in order to avoid repeating a failure. Second, in stereotype threat research (Spencer, Steele, & Quinn, 1999), those who both care about and show ability in the threatened domain are the ones predicted to demonstrate stereotype threat effects. Building on this, we hypothesized that for women, following failure on a work related task, the likelihood of greater activation of the parent identity would increase as perceived capability to manage the two roles increased. Specifically, those women who most believe they will be able to manage work and family demands should also be the most sensitive to failure feedback in the work domain, particularly when the roles are construed oppositionally. They should be the most likely to turn to and activate their parent identities in an effort to restore self-integrity. Because men were not expected to increase activation of their parent identities under any circumstances, perceived self-efficacy to manage work and family should not be a relevant moderator for them.

In summary then, in Study 3 we hypothesized that because women experience parent and professional roles in opposition to one another, when they undergo a threat in the career domain they will activate their parent identity, perhaps in an effort to restore self-integrity. This should be particularly true when the oppositional nature of the roles is made salient to them, and mitigated when the roles are framed as facilitative. Moreover, it should be especially true for those women with the most at stake in simultaneously managing the two roles—that is, those who believe they are capable of "doing it all." For men, when provided only with these two roles as sources of identity repair, we hypothesized that failure in the work domain would be responded to by simply increasing the activation of their professional identity—as if redoubling their determination to succeed in this domain—regardless of whether the roles were framed as facilitative versus oppositional.

Method

Overview. Participants first were primed to think about the relationship between parent and professional roles as either oppositional or facilitative, or they were assigned to a control condition (Role Relation manipulation). Next a baseline measure of implicit self-associations using the GNAT from Study 2 was collected. Participants then experienced either success or failure on a task ostensibly diagnostic of professional aptitude. Changes in implicit self-associations were then measured, again using the GNAT. Finally, participants completed an individual difference measure of perceived self-efficacy to manage both work and family demands. Thus the study was a 2 (Participant Gender) $\times$ 3 (Role Relation) $\times$ 2 (Success/Failure Feedback) factorial design with a continuous measure of self-efficacy. The baseline measures of self-associations were included in the analyses as a covariate in order to assess changes in identity activation from these.

Participants. A total of 242 undergraduates (120 women) participated in this study. All participants were recruited through the Psychology Department subject pool website and received partial course credit in exchange for their participation. Participants were randomly assigned to one of three Role Relation conditions (facilitative, oppositional, control) and either the Success or Failure Feedback condition.

Materials and procedure. Participants came into the lab in groups of up to 8 people and were seated at individual computer stations equipped with a Macintosh laptop computer on which the entire experiment was run. At the outset they were told the study consisted of a number of different tasks and that we simply wanted them to do their best. Each task was introduced with its own separate set of instructions.

Role relation manipulation. Participants were randomly assigned to think and write about an assigned topic. Participants in the Oppositional condition were told: "While many agree that it is possible to simultaneously manage being a parent and having a career, they also speak to just how hard this can be." They were asked to "write a bit first about your goals in the family and work domains, and then talk about how you see each role as possibly interfering with the other." In contrast, in the Facilitative condition participants were told: "While many agree that it can be challenging to successfully manage simultaneously being a parent and having a career, people also argue that there are important skills that transfer between the two." As in the Oppositional condition, they were asked to think about their goals in both domains and then to "talk about how you see each role as possibly enhancing or contributing to the other." Control participants were told they would be completing some videogame-like tasks during the experiment and asked to write about their previous experience with playing videogames.

To check on the effectiveness of the Role Relation manipulation, participants responded to two items, one measuring role interference ("In general, I feel that the responsibilities of careers force people to compromise their parenting behaviors in ways they would prefer not to"), and one measuring role separation ("I feel that the role of parent and the role of professional are similar and compatible" [reverse scored]). These items were adapted from a scale developed by Settles et al. (2002) that measures experienced conflict between student and athlete roles.

Baseline implicit self-associations. To establish baseline self-associations, participants completed the same GNATs as in Study 2 with order of role (parent vs. professional) counterbalanced across subjects (Baseline self-associations).

Success/failure manipulation. Participants were told that in the current job market, employers want a way to assess potential employees' ability to "think-on-your-feet," reflecting "creativity, insightfulness," and one's "ability to solve problems quickly." Moreover, traditional performance measures seem not to capture these abilities, and so we were evaluating a possible alternative task as part of the study. Participants completed 10 trials of the Remote Association Task (RAT, McFarlin & Blascovich, 1984), in which they were asked to think of a word that links a set of 3 words together. Performance was manipulated by the level of difficulty of the triads. In the Success condition, it was relatively easy to find the word that linked the triad of presented words (e.g., sea home stomach = sick), whereas it was much more difficult in the Failure condition (e.g., blood music cheese = blue). Participants were randomly assigned to complete either the Success or Failure version and were given veridical feedback on their performance. Moreover, those assigned to the Failure condition were told they scored in the 22nd percentile compared with other students at their university, whereas those in the Success condition were told they scored in the 87th percentile.

Shifts in implicit self-associations. Next participants were asked to reflect on and write briefly about their goals in both the parent and professional domains, always in this order. A second set of GNATs was then completed (in the same order as at baseline for a given participant) to assess the effect of the Role Relations and Success/Failure manipulations on shifts in implicit self-associations from baseline.

Work–Family Conflict Self-Efficacy. Finally, participants completed a 6-item Work–Family Conflict Self-Efficacy Scale constructed specifically for this study. The scale was based on a generic self-efficacy scale (Bandura, 1977; Schwarzer & Jerusalem, 1995) but adapted to focus on work–family conflict. Participants were asked to consider each statement and rate how true it was for them personally now or as they anticipate the future (see Table 2).

Results

Throughout the analyses the Role Relation factor was examined using two single degree of freedom contrasts: Oppositional versus Facilitative and Control versus Other (average of Oppositional and Facilitative).

Data cleaning. Although 242 participants completed the study, 28 participants were excluded prior to data analysis for the following reasons. It was critical for those assigned to the Success condition to solve a reasonable number of the triads in order for them to feel they had succeeded. Twenty participants answered two or fewer of the 10 easy RAT triads correctly (whereas the remaining participants in the Success condition answered an average of 5.60 triads correctly) and so were excluded. These exclusions were spread evenly across gender and Role Relation condition. An additional seven participants indicated they did not want to be parents; they were excluded because the hypothesis concerns how self-associations change for participants for whom both roles are important. Finally, one participant was already a parent and was excluded so that all participants were considering their future Parent and Career identities. Thus a total of 214 participants (106 women) were retained for the analyses.

Manipulation checks. As a check on the efficacy of the Role Relation manipulation, we examined condition differences in how participants perceived the relationship between the roles of parent and professional following the manipulation. Recall there were two items to assess this, one each from the Role Separation and Role Interference scales (see Table 3). As predicted, Oppositional participants perceived greater separation, $F(1, 208) = 12.53$, $p < .001$, and greater interference, $F(1, 208) = 6.67$, $p < .011$, of the two roles than Facilitative participants. Control participants viewed the roles in a manner similar to participants in the Oppositional condition: The two conditions did not differ on either item, both Fs < 1.01, and Control condition participants rated the roles as more separate, $F(1, 208) = 6.76$, $p < .01$, and more interfering, $F(1, 208) = 7.18$, $p < .01$, than Facilitative participants. None of these effects depended on Gender, all Fs < 1.

As a check on the efficacy of our Success/Failure manipulation, we analyzed the number of RAT triads answered correctly as a function of Gender, Success/Failure condition, and Role Relation condition. As expected, participants correctly answered significantly fewer RAT triads in the Failure condition ($M = 0.90$, $SD = 1.08$) than in the Success condition ($M = 5.60$, $SD = 1.48$), $F(1, 202) = 754.05$, $p < .001$.[6]

Work–Family Conflict Self-Efficacy Scale. The Work–Family Conflict Self-Efficacy Scale had acceptable internal consistency ($\alpha = .75$). Responses to the 6-items were averaged into an overall self-efficacy variable for each subject. The average score for men ($M = 5.08$, $SD = .81$) was marginally higher than that for women ($M = 4.85$, $SD = .87$), $F(1, 202) = 3.42$, $p < .07$. We verified that self-efficacy was not affected by the manipulations, given we intended to use it as a moderator of the condition effects. For women, there were no significant main effects or interactions of Role Relation or Success/Failure condition (all Fs < 1.13, ps $> .29$). For men, the Oppositional versus Facilitative Role Relation $\times$ Success/Failure interaction was significant, $F(1, 202) = 6.00$, $p < .02$. Men in the Oppositional Role Relation condition reported higher Work–Family Conflict Self-Efficacy if they had experienced a Failure compared with a Success, whereas the reverse was true in the Facilitative Role Relation condition. As will become clear, this result does not qualify the central effects from this study (described below) because these concern women.

Primary analyses. The primary predictions in this study were that (1) following a work-related failure experience, women would show relatively greater activation of their parent than professional identities (relative to baseline), whereas if anything men would show increased activation of their professional identities, and (2) this effect would depend on the Role Relation manipulation such

[6] In addition to this predicted difference, there was a 3-way interaction of the Control versus Other Role Relation contrast with Success/Failure Feedback and Gender, $F(1, 202) = 7.18$, $p < .001$. Looking at the effect of Gender within each of the six role relation by success/failure cells, gender was significant in two cases: women performed worse than men on the Failure RAT in the Facilitative condition, $F(1, 202) = 4.71$, $p < .04$, and on the Success RAT in the Control condition, $F(1, 202) = 9.86$, $p < .003$. All other Fs < 1.93, ps $> .17$.

Table 2
Work–Family Conflict Self-Efficacy Scale

Item
I can always manage to solve difficult parenting and career conflicts if I try hard enough.
If someone opposes the way I manage parenting and career responsibilities, I don't know whether I'll be able to find a means and ways to get what I want. (R)
It is easy for me to stick to my aims and accomplish my goals with respect to career and parenting aspirations.
I worry about my ability to deal effectively with unexpected events involving career and parenting responsibilities. (R)
Thanks to my resourcefulness, I know how to handle unforeseen situations involving career and parenting conflicts.
I can remain calm when facing parent–career difficulties because I can rely on my coping abilities.

Note. Adapted from "Generalized Self-Efficacy Scale," by R. Schwarzer and M. Jerusalem, in J. Weinman, S. Wright, & M. Johnston (Eds.), *Measures in Health Psychology: A User's Portfolio: Causal and Control Beliefs* (http://userpage.fu-berlin.de/~health/engscal.htm), 1995, Windsor, England: NFER-Nelson. Copyright 1995 by R. Schwarzer and M. Jerusalem. R = reverse scored.

that for women, the predicted pattern should hold only when they thought of the roles as oppositional to one another; the facilitative manipulation was predicted to result in a pattern for women that looked more like that for men (i.e., increased activation of the professional identity). Finally, (3) these predicted shifts in identity activation as a function of Role Relation and Success/Failure feedback should be most true for women who believe they will be able to simultaneously manage the two roles, that is, those with high work–family conflict self-efficacy.

To conduct these analyses, d' scores were calculated for each of the four GNAT blocks (me + parent images and me + professional images both at baseline and following the independent variable manipulations) in the same manner as Study 2. The within subjects contrast of activation of the parent over professional identity was computed as the difference between these two d' scores (abbreviated as ParvPro Identity Activation), indicating stronger implicit associations between the self and the parent than the professional identity.

Baseline implicit self-associations. Baseline ParvPro self-association scores were regressed onto Subject Gender and Role Relation, using the single degree of freedom contrasts described above, and their interaction, along with order of the GNAT blocks (see Judd, McClelland, & Ryan, 2009, for a discussion of treating within subject contrasts as dependent variables in a regression analysis). The effect of Subject Gender on Baseline ParvPro self-associations was significant, $F(1, 207) = 24.70$, $p < .001$, such that men showed higher self-professional ($M = 1.72$, $SD = .63$) than self-parent associations ($M = 1.44$, $SD = .70$), $F(1, 207) = 21.80$, $p < .001$, whereas women showed higher self-parent ($M = 1.66$, $SD = .73$) than self-professional associations ($M = 1.52$, $SD = .57$), $F(1, 207) = 5.66$, $p < .018$. Importantly, this effect of Subject Gender on baseline self-associations did not depend on either of the Role Relation contrasts, Fs < 1.82, ps $> .17$.[7]

Table 3
Means (Standard Deviations) by Condition for the Two Role Relation Manipulation Check Items (Study 3)

Item	Role relation manipulation		
	Oppositional	Control	Facilitative
Role separation	3.77 (1.62)	3.53 (1.52)	2.90 (1.20)
Role interference	5.20 (1.47)	5.22 (1.11)	4.62 (1.39)

The main effect of the Role Relation contrast for Oppositional versus Facilitative was also significant, $F(1, 207) = 3.84$, $p = .051$, such that those in the Oppositional condition showed higher professional than parent associations ($M = 1.66$ vs. 1.49), $F(1, 207) = 5.34$, $p < .012$, whereas those in the Facilitative condition showed no difference between these ($M = 1.59$ vs. 1.62), $F < 1$, *ns*. No other effects were significant in the analyses of the baseline self-associations.

Shifts in implicit self-associations. The primary hypothesis of interest in this study was that women would strengthen the activation of their implicit parent versus professional identities after they experienced a failure on the RAT, particularly when the roles were viewed oppositionally, and especially if they believed they *should* be able to succeed in simultaneously managing work and family. To test this hypothesis, ParvPro Identity Activation (following the manipulations) was regressed onto Subject Gender, Role Relation Condition (same two contrasts as above), Success/Failure Condition, Work–Family Self-Efficacy (mean centered), and the interactions among these variables. Baseline ParvPro Identity Activation was controlled for in the analysis so that the effects being tested examine changes relative to baseline.[8] Note that the intercept and predicted values in the model are then estimates when Baseline ParvPro Identity Activation equals 0, that is, when implicit associations with the two roles is of equal strength at baseline. Average d' at baseline (mean centered) was also included to account for individual differences in performance (increasing precision of the estimates by reducing error), as was the order in which the GNATs were performed (see Judd et al., 2009).

The critical four-way interaction between Gender, Oppositional versus Facilitative Role Relation, Success/Failure and Work–Family Self-Efficacy was significant, $F(1, 187) = 8.64$, $p < .004$. In order to better understand the effect, we looked within each gender group to examine shifts in identity activation following the manipulations. Testing the effects for women, the 3-way Oppositional versus Facilitative Role Relation × Success/Failure × Work–Family Conflict

[7] Alternatively, one could test for gender differences within domain. These simples are also significant such that women demonstrate stronger self-parent associations at baseline relative to men, $F(1, 208) = 4.97$, $p < .03$, and men demonstrate stronger self-professional associations at baseline relative to women, $F(1, 208) = 5.76$, $p < .02$.

[8] As would be expected, Baseline differences in ParvPro self-associations were a significant predictor of ParvPro differences following the manipulations, $F(1, 187) = 22.84$, $p < .001$.

Self-Efficacy interaction was significant, $F(1, 187) = 8.64$, $p < .004$. Figure 6 plots the parent minus professional self-associations, controlling for baseline, as a function of these independent variables. A score of 0 indicates no change from baseline associations, negative scores indicate greater activation of professional identities relative to baseline, and positive scores indicate greater activation of parent identities relative to baseline. Self-efficacy with respect to balancing work and family is plotted along the *x*-axis with higher values indicating greater self-efficacy.

Turning first to the Failure condition, the predicted effect of Oppositional versus Facilitative Role Relation was significant, $F(1, 187) = 5.90$, $p < .02$. Following a work-related failure, on average women in the Oppositional condition shifted their self-associations more toward parent than professional, whereas those in the Facilitative condition shifted more toward professional than parent. This was the critical effect predicted in this study. Moreover, this effect was moderated by individual differences in Work–Family Conflict Self-Efficacy such that the effect of viewing the roles oppositionally versus facilitatively was greater for women who reported feeling more self-efficacious in their abilities to handle work–family conflict, $F(1, 187) = 8.64$, $p < .004$. Thus the critical effect was significant on average, and the magnitude of the effect was moderated by self-efficacy, such that it was greatest among those women who believed themselves most capable of "doing it all."

On the other hand, the Oppositional versus Facilitative Role Relation effect was not significant for women within the Success condition, $F < 1$, nor did it depend on Work–Family Conflict Self-Efficacy, $F(1, 187) = 1.23$, $p = .27$ (see Figure 6). In other words, when women had no reason to question their ability to succeed professionally, thinking of the roles in an Oppositional versus Facilitative manner had no effect on changes in identity activation, nor were the effects moderated by their perceptions of self-efficacy with regard to work–family conflict. By and large, women's self-associations following a success experience on a career-relevant task were unchanged from baseline.

For men, as predicted, the parallel 3-way interaction between Oppositional versus Facilitative Role Relation × Success/Failure × Work–Family Conflict Self-Efficacy interaction was not significant, $F(1, 187) = 1.48$, $p = .22$. The only significant effect was a Success/Failure × Work–Family Conflict Self-Efficacy interaction, $F(1, 187) = 4.37$, $p < .04$ (see Figure 7). As scores on Work–Family Conflict Self-Efficacy increased, men in the Failure condition showed greater shifts toward their professional over parent identities, more so than men in the Success condition. Role Relation condition did not moderate this effect, nor did it have any effects on average. This pattern of results is as predicted and suggests that following a career-related failure, men even more strongly activate their professional identity, perhaps in an effort to reassure the self of their commitment to this, and this was particularly true if their self-efficacy to manage work–family conflicts was high.[9,10]

Discussion

In Study 3, we were interested in shifts in self-associations after a career-related failure as a result of framing the parent and professional roles as oppositional versus facilitative. We predicted that women would shift their self-associations toward the parent identity following a failure, especially if the roles had been framed oppositionally, and that this might be especially true for those who most believed in their ability to manage both roles. In contrast, we predicted that men would shift their self-associations toward the professional domain after a failure, and that this would be true regardless of whether the roles were defined as oppositional or facilitative. The results supported these predictions. Men dealt with a work-relevant threat to their ability by even greater activation of their professional identity, and the oppositional manipulation did not affect the tendency to do so. This may be because the men have such a weak parent identity at this point in their lives that it simply is unavailable to activate. Alternatively, the men may read the oppositional manipulation as suggesting that it is hard for *women* to maintain both roles, much more so than for men.

Women, on the other hand, reacted to a career-related threat by increasing activation of their parent identity if they had just considered the oppositional nature of the roles, but behaved in a manner parallel to men, increasing activation of their professional identities, if they had considered how the roles might facilitate one another. For women, the difference in identity activation in the failure condition as a function of the role relation manipulation was accentuated for those with the greatest self-efficacy regarding their ability to manage both work and family. It was precisely the women most optimistic about their abilities to have both a family and a career that most strongly activated their parent identities in response to a threat. One possible implication of this effect (but admittedly not directly tested in this study) is that over time, such a pattern of repeated activation of the parent identity may produce disiden-

[9] A number of additional lower-order effects were significant in the analysis. None of these involved subject gender, and all of them were qualified by the higher order effects described in the main text. They are reported here for the sake of completeness. ParvPro Identity Activation was greater in the Oppositional ($M = .04$) than Facilitative condition ($M = -.19$), $F(1, 187) = 9.00$, $p < .004$. This effect was greater in the Success than Failure condition, $F(1, 187) = 4.67$, $p < .04$ for the Oppositional versus Facilitative × Success/Failure interaction. The difference between the Oppositional and Facilitative conditions also increased as scores on Work–Family Conflict Self-Efficacy increased, $F(1, 187) = 4.20$, $p < .05$. Finally, the Control versus Other contrast was significant, $F(1, 187) = 6.10$, $p < .02$, such that Control subjects shifted more toward the parent relative to the professional identity ($M = .079$) compared to those in the other role relation conditions combined ($M = -.10$).

[10] Also of interest was a significant Control versus Other Role Relation × Gender × Work–Family Conflict Self-Efficacy interaction, $F(1, 187) = 10.82$, $p < .002$. The control condition captures the difference between men and women in their "default" self-association shifts as self-efficacy increases. Breaking the interaction down by gender revealed that for women there was a significant Control versus Other Role Relation × Work–Family Conflict Self-Efficacy interaction, $F(1, 187) = 7.40$, $p < .01$, such that on average across Success/Failure condition, as scores on Work–Family Conflict Self-Efficacy increased, women in the Control Role Relation condition shifted more strongly toward their parent relative to professional identity compared with those in the Oppositional and Facilitative conditions combined. This same interaction was significant among men, $F(1, 187) = 3.88$, $p = .05$, but here, as scores on Work–Family Conflict Self-Efficacy increased, men in the Control Role Relation condition shifted more strongly toward their professional relative to parent identities compared to those in the other two Role Relation conditions. Put differently, for participants in the Control condition, self-efficacy moderated gender differences in self-associations such that each gender group shifted more strongly in the direction of traditional associations as self-efficacy increased. Thus, in the absence of an explicit discussion of the relation between the two roles, men who believed they could handle work and family conflicts shifted toward even greater professional self-associations, whereas women who believed the same shifted toward even greater parent self-associations.

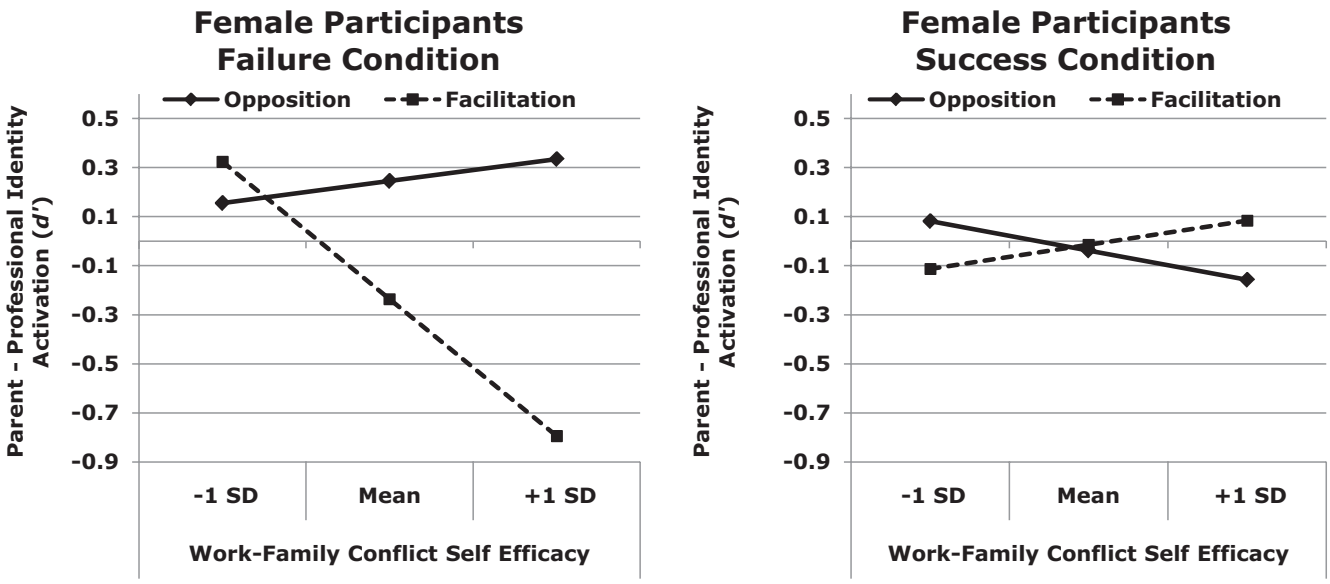

Figure 6. Women's change in Parent versus Professional d' scores by condition, controlling for baseline. Estimates are computed when baseline differences in self-associations are zero, performance is at its mean, and on average across order of the GNAT blocks. In the failure condition, shifts were significantly greater toward the parent than professional identities in the oppositional relative to facilitation condition, and this difference was moderated by self-efficacy, growing increasing larger as self-efficacy increased. In the success condition, none of the effects was significant (Study 3). GNAT = go/no-go task.

tification with the professional domain, perhaps resulting in a decision to leave the domain altogether. Given the results of Study 2 suggesting that women do view these two roles as trading off against one another, it is encouraging that the facilitative manipulation eliminated this effect, resulting instead in activation of professional identities, particularly for women with high self-efficacy in managing work–family conflict.

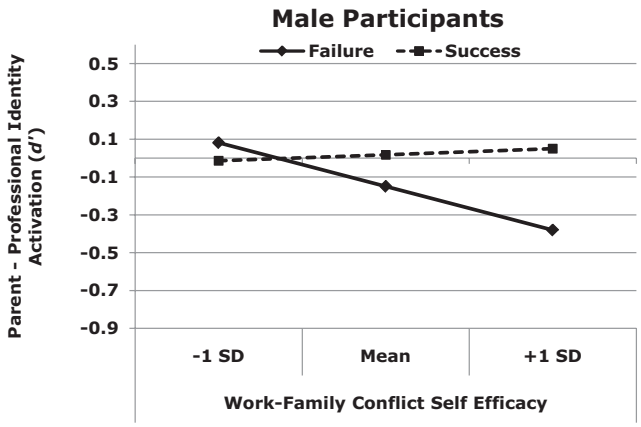

Figure 7. Men's change in Parent versus Professional d' scores relative to baseline by condition, controlling for average levels of performance, order, and baseline differences in self-associations. In response to a failure relative to success, as self-efficacy to manage work–family conflict increased, men were increasingly likely to activate their professional over parent identities (Study 3).

Study 4

The results presented thus far paint very different realities for young college men and women in how they experience their parent and professional identities, and very different reactions with respect to activation of those identities in response to a work-related threat. In Study 4 we sought to bolster our arguments by amending several key aspects of Study 3. First, although we see it as critical to show that these identity differences exist early on in the decision process of whether and in what manner to pursue a career and family (i.e., among college students), it would be useful to establish that the patterns are not unique to college students. Accordingly, Study 4 utilized participants recruited through a work organization, all of whom either already had children or were near in time to making the decision about having children.

Second, working with a very specific work organization allowed us to precisely tailor the images used in the professional identity GNAT to that organization. To the extent the pattern of self-associations is consistent with the previous studies (in which more generic professional-related images were utilized, see Figure 3) this increases our confidence that the stimuli are indeed tapping relevant aspects of the participants' professional identities.

Third, in Study 3 we interpreted the level of identity activation following threat as indicative of attempts to affirm the self in a particular domain. In Study 4, participants were explicitly instructed to affirm in either the parent or career domain following a work-related threat by considering why that role was important to them, and what it meant for their lives. Of interest was the pattern of identity activation following explicit instructions to affirm in one role or the other. For men, given our argument that

the two roles are seen as somewhat redundant and that their career identity is more prominent than parent, we hypothesized that no matter which domain they affirmed in, this would simply result in increased activation of their professional identity over baseline. Such an effect would be consistent with Study 3 where men in the failure condition showed only a significant increase in activation of their professional identities (at least among those who believed they could manage work and family obligations). For women in Study 3, following a failure experience those in the oppositional condition showed increased activation of their parent over professional identity relative to those in the facilitative condition. We suggested this was because women in the oppositional condition turned to their parent identities in an effort to affirm the self. We expected to see the same pattern in Study 4 following explicit instructions to affirm in the parent domain. But when instructed to affirm in the career domain, given our argument that women are able to switch identity activation depending on context, this should lead to greater activation of their professional identities. Thus although parent identity activation may be the default for women in response to a failure experience at work, if instructed to consider their careers goals this should promote activation of their professional identities.

Finally, in Study 3 we suggested there might be downstream consequences of differential identity activation. However, we did not measure this. In Study 4, participants were asked to complete a short work engagement scale following the affirmation manipulation. We were particularly interested in whether men and women might report differential levels of work engagement as a function of domain of affirmation.

Method

Overview. Participants first completed baseline measures of implicit self-associations. Next, they completed a Success/Failure Imagery manipulation, in which they were asked to imagine in vivid detail either that they succeeded (Success condition) or failed (Failure condition) on an important work task. Next they completed an affirmation manipulation in which they focused on either their parent or professional identity, explaining how and why this was important in their life. They then completed the implicit self-association task a second time to assess changes in these relative to baseline. Finally, they complete a measure of work engagement and a number of demographic questions. In particular it seemed likely that parental status might moderate the effect of the manipulations on implicit self-associations. Thus number of children is included as a continuously measured moderator throughout the analyses. In sum, the study was a 2 (Participant Gender) $\times$ 2 (Success/Failure Condition) $\times$ 2 (Affirmation Domain) factorial design with a continuous measure of number of children. The baseline measures of self-associations were included in the analyses as a covariate in order to assess changes in self-associations from these, as was age of the participant to control for this.

Participants. The sample for this study included employees of a large power company recruited through the internal company website. Employees received 1 hour of credit toward the agency-mandated 3 hours of annual diversity training for participation in the study (30 minutes in duration, followed by a 25-minute training module that summarized scientific research on implicit associations and the potential they have to operate unintentionally and without awareness in organizational settings). Employees were randomly assigned to the Success or Failure condition, and to Affirmation Domain. Although the initial sample included 230 employees, many participants experienced interruptions or other problems in completing the study, resulting in a final sample of 145 participants (75 women; see the Results section for a detailed description of the exclusion criteria).

Materials and procedure. Participants learned about and were invited to participate in the study through the organizational website that posts opportunities for fulfilling the diversity training requirement. All employees were allowed to participate, but demographic information was gathered at enrollment to screen participants for gender, age, marital status, parenthood status and number of children, and if respondents were not parents, they were asked whether they saw themselves becoming parents in the future. All participants either were parents already or expressed a desire to become parents at some future point. Although the initial instruction screen informed participants that they needed about an hour to complete the study, and that they should do so in a quiet environment where they were unlikely to be interrupted, because they had to complete the study while at work (as mandated by the agency), interruptions occurred. While this study has the advantage of using a non-student sample, it means dealing with much messier data.

Baseline implicit self-associations. To establish baseline self-associations, participants completed the same GNATs as in Studies 2 and 3. In this version, however, the professional images in Figure 3 were replaced with five iconic pictures from the agency (e.g., agency logo, recognizable structures associated with the agency such as a dam) in order to assess associations between the self and the agency in particular. Given that the effects of interest in Studies 2 and 3 did not depend on order of the GNATs, in this study, all participants completed the me + professional block followed by the me + parent block.

Success/failure imagery manipulation. Next, employees were asked to imagine that they had spent quite a bit of time over the past two weeks working to accomplish an important work task. They were told to imagine that in the end it came together exactly as they would have hoped and their supervisor on the task was very pleased (Success), or that it did not come together at all as they had hoped and their supervisor was very disappointed (Failure). Participants were asked to write in detail about what the task was and what their personal responsibilities were, along with who their supervisor would have been and what transpired to lead to the Success/Failure outcome. Employees were prompted to imagine their feelings as a result of the Success/Failure and to write about them in detail. To check on the effectiveness of this manipulation, employees responded to 6-items that asked about their general feelings of resourcefulness and ability to accomplish their goals and to manage difficult situations.

Affirmation domain manipulation. Employees then completed the Affirmation Domain manipulation in which they were asked to focus on either the parent or career role. They were first directed to write a sentence or two about how and why the assigned domain was or would be important to them. They next listed the top two reasons why the role was important, and finally rated the importance of the assigned domain on two items (e.g., "Being a good parent, now or in the future, is an important part of my self-identity").

Shifts in implicit self-associations. A second set of GNATs was then completed to assess the effect of the Success/Failure and Affirmation Domain manipulations on shifts in implicit self-associations from baseline. As with the baseline measure, all participants completed the me + professional block followed by the me + parent block.

Work engagement. Finally, participants were asked three questions regarding their work engagement at the agency from the short form of the Work Engagement Scale (Schaufeli, Bakker, & Salanova, 2006, p. 714): "I am enthusiastic about my job," " My job inspires me," and, "I am proud of the work that I do."

Results

Data cleaning. In order to ensure that the final set of data included only participants who completed the study from beginning to end in one session, and who followed all critical instructions in a reasonable amount of time with appropriate attention to the GNAT, the following measures were taken. Twenty participants were excluded due to missing data on one of the key measures (e.g., on one of the GNAT blocks, the Success/Failure Imagery manipulation exercise, etc.). Five participants who took longer than one hour to complete just the experimental portion of the study (the average time was just 30 minutes), and eight participants from the first day of data collection who experienced a glitch were also dropped. Open-ended responses to the Success/Failure Imagery exercise and the Affirmation exercise were coded. Participants who counter-argued their assigned position (e.g., imagined their work task was a success when they were in the failure condition), or protested having to complete the task were dropped (15 participants based on responses to the Success/Failure Imagery exercise and 8 for their answers on the Affirmation exercise). Twenty-four participants were dropped based on their Studentized Residuals (> 2, see Judd et al., 2009) calculated from the GNAT. Basically these were participants who almost never hit the spacebar (4–5 correct "GO" responses out of 60 where the median was 40 hits), or hit the spacebar indiscriminately (65–70 false alarms where the median was 7 false alarms). We also excluded two participants whose d' values were less than 0 (indicating discriminability below chance levels) on at least one of the critical GNAT blocks. Finally, three people with extreme numbers of children (7, 10, and 12) were eliminated to reduce skew in this variable (the mean was 1.88, $SD = 1.28$; no differences by gender, $t(143) = -1.19$, *ns*).

The final sample included 145 participants (75 women). They had been with the organization for 12.7 years on average and were between 22 and 69 years old, with a mean age of 47.55 ($SD = 11.16$). In addition to Subject Gender, and the manipulated variables of Success/Failure Imagery condition and Parent/Career Affirmation Domain, number of kids and its interactions with the other variables was included as a moderator variable throughout the analyses, and age was controlled for in order to statistically equate participants on this. Clearly this sample consists of individuals who are actively engaged in both career and parenting roles, and this was a principle goal for Study 4.

Manipulation check. As a check on the efficacy of the success/failure imagery manipulation, responses to the 6 items asking about perceived ability to accomplish goals and manage difficult situations were averaged ($\alpha = .78$) and regressed onto Subject Gender, Success/Failure Condition, Number of children (mean centered), and the interactions among these variables, controlling for age (mean centered). Those in the Failure condition scored lower on this measure ($M_{failure} = 3.65$) than those in the Success condition ($M_{success} = 3.85$), $F(1, 136) = 4.28$, $p < .05$, and this effect did not depend on gender, $F < 1$. On average, however, women ($M_{women} = 3.64$) scored lower than men ($M_{men} = 3.87$), $F(1, 136) = 4.97$, $p < .03$.

Primary analyses. The primary goals of this study were to demonstrate that the pattern of effects observed in Studies 2 and 3 were not idiosyncratic to the college student sample utilized in those studies. Specifically, the primary predictions were that (1) the pattern of baseline self-associations obtained from this older sample, many of whom were already parents and all of whom expressed the desire to become parents, would replicate those of the previous studies with women showing stronger self-associations in the parent domain than men. Given that the sample was collected in cooperation with a work organization where all participants were actively pursuing careers, women and men were not expected to differ on career self-associations. However, as in Studies 2 and 3, men's self-associations were expected to fluctuate primarily in the career domain in response to identity threats and affirmations, whereas women's self-associations should fluctuate in both domains depending on the nature of the affirmation. Specifically, following a threat in the work domain, and an opportunity to affirm in either the parent or career domain, we predicted that (2) men would more strongly activate their work identities regardless of affirmation domain (in a manner parallel to Study 3), (3) women would activate whichever identity they affirmed in (in a manner parallel to the shifting of self-associations in Study 2, and the oppositional versus facilitative manipulation in Study 3), and finally that (4) these differences in patterns of identity activation would have downstream consequences, specifically that because of strong and persistent career self-associations for men, affirming in this domain would repair threat and lead to greater work engagement for them. But because women experience the roles in conflict, affirming in either domain should not dispel the felt conflict and consequently would not be helpful in repairing threats that might boost self-reported work engagement.

As in Study 3, d' scores were calculated for each of the four GNAT blocks (me + parent images and me + professional images both at baseline and following the independent variable manipulations), and the within subjects contrast (ParvPro Identity Activation) was computed indicating stronger implicit associations between the self and the parent than the professional identity.

Baseline implicit self-associations. Baseline ParvPro Identity Activation scores were regressed onto Subject Gender, number of children (mean centered) and their interaction, controlling for age (mean centered). On average, participants exhibited significantly stronger self-associations to the parent than professional role, $F(1, 140) = 6.20$, $p < .015$, but this effect depended on gender, $F(1, 140) = 7.62$, $p < .007$, such that although in the parent domain women ($M = 2.28$, $SD = .85$) demonstrated stronger self-associations than men ($M = 1.88$, $SD = .87$), $F(1, 140) = 12.25$,

$p < .001$, in the professional domain, there was no difference between the genders, $F = 1.64$, $p = .20$ ($M_{women} = 1.99$, $SD = .72$; $M_{men} = 1.90$, $SD = .77$). The difference in baseline self-associations also depended on number of children, such that as number of children increased, me + parent associations were increasingly stronger than me + professional, $F(1, 140) = 13.18$, $p < .001$, and this did not depend on Gender, $F = 1.35$, $p = .25$. Looking within domain, Number of children significantly predicted only the self-associations in the parent domain, $F(1, 140) = 7.94$, $p < .006$ ($F < 1$ in the professional domain). Again, this did not depend on gender, $F < 1$ for the Gender × Number of children interaction for baseline self-associations in the parent domain.[11]

Shifts in implicit self-associations. To examine shifts in implicit self-associations following the independent variable manipulations, ParvPro Identity Activation (following the manipulations) was regressed onto Subject Gender, Success/Failure Condition, Affirmation Domain, Number of children (mean centered), and the interactions among these variables. As in Study 3, Baseline ParvPro Identity Activation was also entered as a predictor variable in the analysis so that the effects being tested examine changes relative to baseline,[12] as was average d' at baseline (mean centered) to account for individual differences in performance. Age (mean centered) was also controlled for in the analyses.

The critical four-way interaction between Gender, Success/Failure Condition, Affirmation Domain, and number of children was significant, $F(1, 126) = 7.51$, $p < .008$. In order to better understand this interaction, we broke it down first by Success versus Failure Condition and examined within each whether the domain in which a person affirmed had different effects on identity activation for women versus men, and whether this depended in turn on number of children. Within the Success condition, there was only a main effect of Gender, $F(1, 126) = 6.35$, $p < .013$, indicating that after bringing to mind an imagined work related success, men showed an even greater activation of their professional self-associations over and above baseline differences ($M_{men} = -.47$), $F(1, 126) = 14.29$, $p < .001$, whereas women showed no change from baseline ($M_{\text{women}} = -.02$), $F < 1$. This effect did not depend on Affirmation Domain. No other effects were significant in this analysis.

Within the Failure condition, the predicted interaction involving Gender, Affirmation Domain, and number of children was significant, $F(1, 126) = 5.52$, $p < .03$. In support of the primary hypothesis, looking just within women in the Failure condition, women shifted their self-associations in the direction of whichever domain they affirmed in, at least among those with fewer children and thus still in the midst of navigating work–family decisions. Figure 8 plots this interaction between Role Domain × Affirmation Domain × Number of children for women in the Failure condition, $F(1, 126) = 3.92$, $p = .05$. As in Study 3, a score of 0 indicates no change from baseline associations, negative scores indicate greater activation of professional self-associations relative to baseline, and positive scores indicate greater activation of parent self-associations relative to baseline. Number of children is plotted along the *x*-axis.

In contrast, men in the failure condition simply increased the activation of their professional identities relative to baseline ($M = -.29$), $F(1, 126) = 5.66$, $p < .019$, and this did not depend on the domain in which they affirmed ($F < 1$). The overall shift toward greater activation of their professional identity was marginally more pronounced for those with fewer children, $F(1, 126) = 3.09$, $p = .08$. No other effects were significant in these analyses.

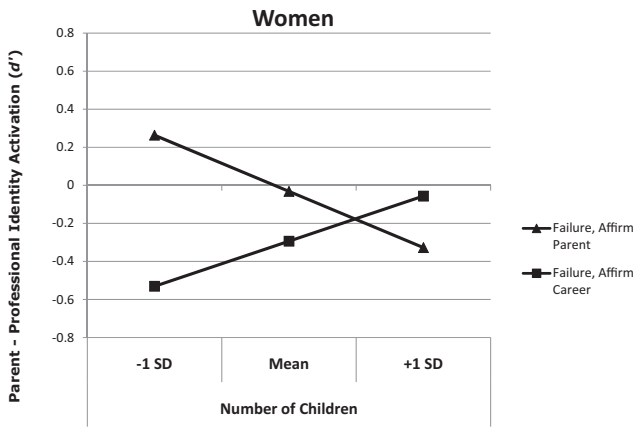

Figure 8. Women's change in Parent versus Professional d' scores in the Failure Condition by Affirmation Domain, controlling for baseline. Estimates are computed when baseline differences in self-associations are zero, performance is at its mean, and age is at its mean. The tendency to activate parent over professional identity was greatest for women with no or few children and eliminated as number of children increased, controlling for age (Study 4).

Work engagement. Finally we examined the consequences of these different patterns of identity activation for men and women on a downstream outcome, specifically self-reported work engagement. The three work engagement items were averaged together ($\alpha = .83$) and analyzed as a function of Subject Gender, Success/Failure Condition, Affirmation Domain, Number of children (mean centered), and the interactions among these variables, again controlling for age (mean centered). This analysis resulted in a marginal main effect of Success/Failure Condition, with somewhat greater work engagement reported following an imagined work success ($M = 3.51$) than failure ($M = 3.27$), $F(1, 128) = 3.03$, $p = .08$. Of greater importance, the Affirmation Domain × Gender interaction was significant, $F(1, 128) = 4.49$, $p < .04$ (see Figure 9). Affirming in the career domain was significantly more effective in increasing work engagement for men ($M = 3.60$) than for women ($M = 3.27$), $F(1, 128) = 4.33$, $p < .04$. Career engagement was not differentially affected for the genders following affirmation in the parent domain, $F < 1$ ($M_{men} = 3.32$, $M_{women} = 3.45$). Although broadly consistent with expectations, we had anticipated that these differences would be most pronounced among those who experienced a failure but the 3-way interaction between Gender, Success/Failure, and Affirmation Domain was not significant, $F < 1$.

[11] The main effect for Gender in the baseline scores was significant, $F(1, 140) = 7.40$, $p < .008$, with women outperforming men on average. As noted in the text, however, this was only true in the parent and not professional domain. Age was a significant negative predictor of average d' scores, $F(1, 140) = 14.82$, $p < .001$, with older individuals performing less well on average on the GNATs. No other effects were significant in these analyses.

[12] As would be expected, differences in the Baseline ParvPro self-associations significantly predicted ParvPro Identity Activation following the manipulations, $F(1, 126) = 6.45$, $p < .02$.

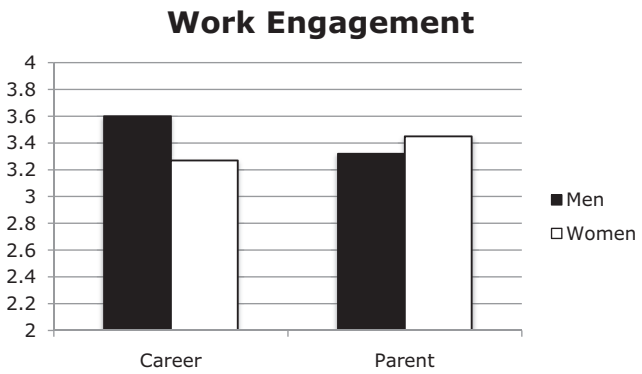

Figure 9. Work Engagement scores by Gender and Affirmation Domain (Study 4).

Discussion

In terms of baseline self-associations, among this older group of participants, and consistent with the findings from the college student sample in Study 3, women continued to demonstrate stronger implicit parent identities than men. In contrast, the women in this sample (all of whom were actively employed in careers at the time of data collection) demonstrated equally strong implicit professional identities as their male counterparts, whereas in Study 3 college men demonstrated stronger implicit professional identities than college women. Self-associations in the parent domain increased as number of children increased and this was equally true for men and women.

In terms of shifts in identity activation in the parent and professional domain, among this older sample of individuals all of whom have a career and already have or want children, considering a work success increased the activation of men's professional identities, while leaving that of women's unchanged. Men similarly increased their professional identities following consideration of a failure in the work domain, particularly among those with few or no children, and this did not depend on domain of affirmation. In contrast, women who experienced a work related failure demonstrated elevated activation of whichever identity they affirmed in, primarily among those with few or no children. Together these findings suggest that, in general, men show increased activation of their professional identities in response to either a success or a failure, and that a work-related failure has different consequences for men and women, especially among those with more nascent parent identities (few to no children). Here, men show particularly strong identity activation in the professional domain, whereas women activate whichever identity they were directed to affirm in. The pattern of self-associations from Study 3 suggests, however, that in the absence of explicit instructions to affirm in the work domain, women are more likely to gravitate toward activation of their parent identities. Men consistently show a pattern of increased activation of their professional identities.

Finally, Study 4 suggests that affirming in the career domain has more positive implications for men than women, resulting in greater reported work engagement. Affirming in the parent domain was not particularly helpful to either gender in terms of increased work engagement.

General Discussion

Numerous theoretical perspectives make note of the internal conflict and negative feelings experienced when one's sense of the actual self falls short of the ideal self (e.g., Higgins, 1987). In the work described here, we argue the oppositional nature of the professional and parent identities as experienced by women is particularly problematic because living up to the ideal self in one domain necessarily means falling short in another. Minimizing the actual-ideal discrepancy in one aspect of the self-concept necessarily implies increasing it in another, creating a no-win situation. Interestingly, this opposition has emerged as a function of shifts in long held stereotypes regarding women (e.g., that they now are seen as more competent and capable in the work realm). These are a welcome change because of their potential to open doors to new opportunities and identities. However, to the extent that these new identities require traits, behaviors, and attitudes that are in opposition with old and still valued identities, this creates difficulties.

In this research we explored processes surrounding emergent identity conflict experienced by women. Our working premise was that as a society and a culture, we have made huge strides forward in terms of the acceptability of women in many professional domains. Changes in societal expectations around women now make it possible for them to occupy positions of power and status. As a consequence, stereotypes of women, as well as women's self-perceptions, have changed to include more traditionally masculine traits, in part because these newly acquired positions typically require such traits (Diekman & Eagly, 2000; Twenge, 1997). At the same time, expectations or stereotypes around a second, also important role that women fill—that of mother—have not changed and are often inconsistent with those required to succeed as a professional (e.g., forgiving, nurturing, warm, affectionate vs. analytical, competitive, assertive, independent). In many ways, cultural expectations surrounding the role of mom remain more similar to than different from June Cleaver in that *Mom* is expected to serve as the nucleus of the family, holding it together, making sure everyone has what they need and is where they need to be. The mother is responsible for making the family run. These two roles—professional and mom—remain relatively discrete and nonoverlapping in content so that women can "have it all" but that requires that they "do it all" (Park, Smith, & Correll, 2008), shifting who they are at home versus at work. They must perform at home in ways that live up to the ideal mom, and perform at work in ways that live up to the ideal professional (Blair-Loy, 2003). The behaviors required to successfully master these roles are in opposition to one another and thus the roles are essentially competing with each other. In contrast, the classic prototype of dad is that his job is to provide material resources for the family and serve as the leader/head of the family—in short to be the CEO at work and at home. Thus for men there is greater overlap in the content of their identities as a professional and a dad. Consequently, there is a tension present for women, much more so than for men, that makes it difficult to simultaneously compare favorably with the prototype in both domains.

Support for these ideas was obtained across a set of four studies. First, the trait characteristics of dads and professionals indeed showed significantly greater overlap than for moms and professionals, particularly on positive traits. In Study 2, male and female undergraduates nearing graduation demonstrated very different

patterns of identity activation following consideration of their goals in both the parent and career domains. Women showed a pattern of switching activation of identities to match whichever domain had just been primed. Consistent with Hugenberg and Bodenhausen's (2004) argument, women activated their parent self-associations following consideration of their parent goals, more so than their professional self-associations, whereas the exact reverse was true following consideration of their career goals. This pattern of shifting identities was predicted to consume scarce processing resources. Indeed, following completion of the implicit self-association task, those women who showed a particularly large switching with respect to their parent identities also exhibited poorer performance on a task requiring updating of working memory, and therefore the use of executive function resources. Women who performed the reverse digit-span task prior to completing the implicit self-associations task, and men, regardless of task order, did not show this same impairment.

One might wonder whether men too should show depletion to the extent the self-associations they activate switch in response to the primes. We argue not for several reasons. First and foremost, based on the results from Study 1, and from Park et al. (2010), because of the greater overlap between the dad and professional prototypes, men do not experience these in opposition. Therefore, even if they activate domain specific self-associations in response to the priming task, these are not experienced in a psychological sense as conflicting or oppositional, and hence do not result in ego depletion type costs to executive function performance (Baumeister et al., 1998; Schmeichel, 2007). Moreover, in the GNAT we very consciously chose stimuli that depict caretaking for infants because we reasoned it is the labor-intense aspects of child-rearing that make it difficult to fulfill both this prototype and that of the committed professional. Men in this study did not show above chance activation of me + parent associations to these stimuli over me + professional associations following the parent prime (i.e., their Match effect was not significant following the parent prime). That is, thinking about their parenting goals did not result in stronger activation of these particular associations, again suggesting that as a group these men do not experience conflict in the self-associations brought to mind in response to the primes.

In Study 3, women, but not men, responded to failure on a career related task by increasing the strength of their parent self-associations relative to their career self-associations when the two roles were framed as oppositional to one another. When they were framed as facilitative, women, like men, activated their professional identities in response to a failure. These effects were moderated by self-efficacy beliefs. For women within the failure condition, the diverging patterns of identity activation as a function of whether the roles were defined as oppositional versus facilitative grew increasingly large the more they believed they *would* be able to manage work–family conflicts. These effects are consistent with a self-affirmation perspective (Sherman & Cohen, 2006; Steele, 1988) in which the parent identity is used to repair the threat caused by failure in the career domain. Although in general such affirmation processes serve a protective function for the self, when the two identities are perceived as oppositional to one another, one unintended consequence is the possibility of disidentification with the threatened domain. Self-associations for women who succeeded in the career task were not affected by role definition or self-efficacy. For men, the higher their self-reported self-efficacy to manage work–family conflicts, the greater the activation of their career identities in response to a failure relative to success, regardless of whether the roles were defined as oppositional or facilitative.

Study 4 examined these processes among a sample of working adults, many of whom were already parents. Here too there was evidence that when threatened, regardless of which domain they were instructed to affirm in, men turned to their professional identity, increasing activation of this, and that doing so improved self-reported work engagement. Women showed particularly strong self-associations in the parent domain at baseline, but they activated whichever identity they were asked to reflect on and affirm in relative to this baseline. These identity activations were not, however, helpful in increasing subsequently reported work engagement.

Identity and Well-Being

In the literature on Self-Complexity Theory, there are somewhat discrepant findings regarding whether it is advantageous or problematic to have multiple, independent identities. In some of the earliest work, Linville (1985, 1987; see Baumeister, 1998) argued that the more independent aspects of the self one possessed (i.e., greater self-complexity) the better poised the individual to handle threats to the self because each domain was relatively isolated from and could not be contaminated by the others. These different self-aspects were argued to serve as a buffer against the negative effects of stressful life events. This line of reasoning is echoed in self-affirmation theory (Sherman & Cohen, 2006; Steele, 1988), specifically, that threats to the self in one domain can be buffered by activating the self-concept in an alternate, unrelated domain. Accordingly, having some number of independent "selves" should result in positive outcomes, particularly in terms of measures of subjective well-being.

Donahue, Robins, Roberts, and John (1993) examined what they term self-concept differentiation, by measuring the degree of correspondence in the trait profiles of ratings of the self in general and in five specific social roles (e.g., student, friend, worker). Participants who reported more distinct and nonoverlapping selves in the different roles scored more poorly on measures of subjective well-being, leading Donahue et al. to characterize these individuals as (problematically) having a fragmented or divided sense of the self. Donahue et al. argue their measure taps a lack of coherence in the self-concept, whereas Linville's (1985, 1987) work measures the number of distinct self-aspects subjects are able to generate. McConnell et al. (2005) used the same methodology as Linville, and also collected measures of subjective well-being. They suggest that perceived control over one's various self-aspects importantly moderates the relationship between self-complexity and well-being. In their data, greater self-complexity was associated with better psychological outcome measures only when self-aspect control (controllability, self-initiation, and stability) was perceived as high (see also McConnell, Strain, Brown, & Rydell, 2009).

On one hand, the Donahue et al. (1993) and McConnell et al. (2005) findings are very consistent with the perspective in the current work, arguing that the experience of different selves can be difficult for the individual, requiring both the exertion of mental energy to manage these and resulting in negative mental health outcomes. At the same time, the idea of having independent

sources of identity that can be alternately used depending on what is going well and not so well in one's life is consistent with a large body of work from self-complexity theory and self-affirmation theory. Such work suggests that women might fare better in terms of psychological well-being than men because they do have these independent sources of self-verification to turn to.

We did not collect measures of well-being in the current studies. Within the work–family balance literature there is an ongoing debate on whether having both roles helps or hurts individuals (Barnett, 2004; Barnett & Hyde, 2001; Kandel, Davies, & Raveis, 1985; Nolen-Hoeksema, Larson, & Grayson, 1999). In their article examining identity conflict among student athletes, Settles et al. (2002) suggest that an important psychological moderator of whether positive or negative consequences result from experiencing two roles as very separate from one another is the extent to which they are viewed as *interfering* with each another (see also Settles, 2004; Sacharin, Lee, & Gonzalez, 2009, make a very similar argument using the construct "identity integration"). That is, a student athlete might view his student identity as very separate from his athlete identity, feeling as if he really is two different persons in the two contexts. So long as he does not see those selves as *interfering* with one another, however, these separate identities may be a good thing, providing two independent sources of reinforcement and regard. This situation is consistent with Linville's (1985, 1987) arguments regarding self-complexity, and the role of multiple identity resources in affirmation theory (Sherman & Cohen, 2006; Steele, 1988). However, if the two selves are experienced in opposition to or in conflict with one another, this may be when a sense of having to shift identities back and forth across the two domains, with the resulting inability to simultaneously live up to the ideal prototype in both domains, becomes problematic. Consistent with Donahue et al.'s (1993) concerns regarding the fragmented self, this situation would result in a lack of clarity in the self-concept with its attendant negative consequences (e.g., lower self-esteem, greater depression; Usborne & Taylor, 2010; see also Simon, 1995, 1997). If this analysis is correct, then the ideal organization of the self-concept in the work–family domain would be to experience these as separate (independent) identities, but to view them as facilitative (or at least non-interfering) rather than oppositional. It is noteworthy that in Study 3, women who experienced a failure but had been primed to think of the roles as facilitative behaved much like the men, activating their professional self-associations, and increasingly so as their self-efficacy to manage both roles increased. It would be interesting to see whether women who view the identities as separate but facilitative or non-interfering fare best on subjective measures of well-being.

Reshaping Identity Opposition

How might the roles come to be experienced as facilitative rather than oppositional? Probably a key factor is the availability of role models who manage to successfully navigate the two identities. Simply viewing successful navigation as a possibility should help move an individual from experiencing the two identities as being in conflict, to imagining that the roles can work together. In her Stereotype Inoculation model, Dasgupta has argued for the critical importance of role models in science, technology, engineering, and math (STEM) fields for the recruitment and retention of women (Dasgupta, 2011; Stout, Dasgupta, Hunsinger, & McManus, 2011). Her work suggests that seeing the self in these role models affects self-perceptions, increasing implicit identification with math, and judged self-efficacy to succeed in a STEM related career. Importantly this results in a change both in the group prototype, and in the judged fit via social comparison of the self with that prototype. In Dasgupta's work the critical factor is for the female student to see a match between herself and the STEM prototype. In the issues studied here, women must be able to see themselves both in the prototypical professional and in the prototypical mom. This will require some degree of change to both of these prototypes. The ideal mom must be viewed as someone who can hold and comfort a child with a skinned knee or a broken heart, but also as someone who heads off to work in the morning without things falling apart on the home front. No doubt a shifting of the dad prototype is required as well. No longer is it enough to just "help out with the kids," but rather, the prototype needs to embrace a view of dad as a truly equal partner in child rearing. And perhaps most importantly, the prototype of the ideal professional needs to be broadened to include the possibility of someone who manages to take care of work even with other important commitments on his or her plate. Leaving the office a few hours early to pick up a sick child isn't the end of the world and one can still successfully run a company in spite of this additional responsibility. Consistent with social role theory (Eagly, Wood, & Diekman, 2000), it may be that the behaviors associated with the roles are the necessary first change, and that this will create change in the role expectations or stereotypes associated with the groups, which are at the root of the experienced conflict in the self-comparison process.

Changes in social stereotypes that allow historically low status groups to move into positions of power are an important hallmark of a democratic, progressive society. We suggest that the ideas presented here with regard to oppositional identities apply broadly across many social groups, although our focus has been on women as they take on career roles that conflict with their roles as moms. Ethnic groups have struggled for years with the tension between maintaining their cultural identities (through language, food, religion, etc.) and adopting an "American" identity that offers upward mobility, but often at the cost of assimilation to the mainstream, non-ethnic prototypical norm. Identity opposition presents a genuine challenge to these groups as they strive to achieve desired mobility. Indeed, the psychological consequences of managing conflicting identities (i.e., stress, anxiety, negative self-evaluation) may be partially responsible for slower than hoped for gains by members of social groups undergoing status change (Blair-Loy, 2003; Handelsman et al., 2005; Valian, 1998). While granting admission to heretofore off limits social roles is a necessary first step, because of new complexities that arise, it is not sufficient in and of itself to produce the sort of change envisioned during, for example, the Civil Rights Movement or the so-called Second Wave of Feminism. Along with the possibilities provided by new opportunities come difficult challenges in integrating the self-concept, in sorting out how to be not only in this new role but in highly valued existing roles as well. An essential component of the change process will be to find ways to address these emergent identity conflicts.

Coda

In the five years since we began this research, there has been a veritable explosion of articles in the popular press debating the issue of whether women *can* have it all, or explaining why women *can't* have it all, or questioning whether women should *want* to have it all. Articles have appeared by some very high profile women who weigh in with markedly different opinions. For example, in a heavily discussed piece in *The Atlantic* in July of 2012, Anne-Marie Slaughter described her decision to leave her "dream job" as the first woman director of policy planning at the State Department in order to spend more time with her children. She argued that, "juggling high-level government work with the needs of two teenage boys was not possible" and that our repeated assertions that women can have it all often leaves women feeling that they are to blame if they don't manage the juggling act. In July of 2012 Marissa Mayer, the chief of Yahoo!, attracted attention when she said her maternity leave would be "a few weeks long, and I'll work throughout it" (Gootman & Saint Louis, 2012, para. 7). Some argued this sends a disheartening message to women that not only do they have to do it all, they have to do it all without missing a beat and without compromise. Sheryl Sandberg, the COO of Facebook, has repeatedly called for women to assert their ability to succeed in both roles. In a piece in *The Atlantic* (Lemmon, 2013), she urged women to bring the word "and" to discussions regarding their roles as professionals and mothers. She suggests that all too often women are forced to conceive of these as competing roles and that they should instead stand up for the opportunity to be both a mother **and** a professional. Meanwhile, economic concerns are being raised about the continued decline in the birthrate in the United States, with calls to "incentivize" having children (Kotkin & Siegel, 2013; Last, 2013). At least two truths are evident in this discussion. One, the perspectives are about as divergent as imaginable even considering just those from women who have themselves juggled both motherhood and successful careers, making clear just how difficult this issue is. Second, the focus of the research reported in this article—specifically the experience of parent and professional identities as oppositional for women in way that is not true for men—is an active and timely concern. It would be foolish to think that social psychology can easily "solve" this complex issue. But we are hopeful that the research findings presented here provide an empirical basis for the assertion that women (even those in the very early stages of making decisions about careers and family) experience conflict in the self-concept in managing these two roles in a manner that is distinctly different from men. This conflict has economical, political, social, and perhaps most importantly, psychological consequences of remarkable scope.

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