

THE TUG-OF-WAR WITHIN:
OPPOSITIONAL AFFIRMATION, PARENT VERSUS PROFESSIONAL IDENTIFICATION, AND
GENDER

by

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ABSTRACT

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The Tug-of-War Within: Oppositional Affirmation, Parent Versus Professional Identification, and Gender

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The self-affirmation literature suggests focusing on other important identities after a failure can repair self-integrity and maintain motivation. In the current research, however, I introduce Oppositional Identity Theory to suggest that an important factor determining continued identification with a threatened identity is the degree to which a threatened identity and the one used to affirm it are in conflict (what I term “oppositional identities”). Specifically, affirming an oppositional identity after failure could lead to disidentification with the threatened identity. This research tested this hypothesis in two studies by focusing on the divergent experiences of men and women regarding of professional and parenting life. Study 1 used a sample of 242 (120 female) undergraduates who wrote about these two roles as facilitative or oppositional, or about a control topic. Then, participants completed an easy or difficult task ostensibly diagnostic of career aptitude, after which I measured changes in implicit self-role associations with each identity. The design was thus a 2(Domain: Parent, Professional) X 2(Gender) X 3(Role Relation: Facilitative, Oppositional, Control) X 2(Success/Failure). Women shifted their self-role associations toward the parent domain when they experienced a failure and viewed the roles oppositionally; men redoubled their efforts in the professional role after a failure, without showing any effects of the Role Relation manipulation. These effects were most evident for those who felt most self-efficacious about their ability to handle work-family conflicts. Study 2 used an organizational sample of 230 employees of a large federal agency. Participants imagined either a work failure or a success, and then affirmed either the parent or work role,

after which changes in implicit self-role associations were measured. The design was a 2(Role Domain: Parent, Work) X 2(Gender) X 2(Success/Failure) X 2(Affirmation Domain). Results indicated that women shifted their implicit self-role identifications more towards their parent identity relative to their work identity after a failure and subsequent parent affirmation, whereas men shifted towards the work identity after a failure regardless of affirmation domain. These effects were most apparent for those who had the fewest children. Implications for understanding social trends, developing interventions, and current self-affirmation theory are discussed.

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I. INTRODUCTION

As people across the world watched 41-year-old Dara Torres pursue her Olympic dreams in Beijing, no doubt many of them empathized with her struggle to simultaneously succeed in two very important, but very different roles. To excel in her quest as a champion swimmer required time-intensive training that took her away from her family. To excel in her role as a mother demanded energy that she could not put into the pool. With two roles for which the paths to success pulled her in opposite directions, she faced the possibility that she would not reach her goals in at least one of them. As it happened, she was edged out of the gold medal slot in her signature 50-meter freestyle race by one one-hundredth of a second. From a social psychological perspective, one very important question jumps out of this story: how might someone have dealt with such a disappointment? Previous research might suggest that Torres could address this threat to her self-worth by refocusing her attention onto her achievements in another of her important identities, such as her success in being a role model for older athletes. But the literature on this type of strategy does not predict which of her multiple roles she is most likely to turn to. The answer to this ambiguity may lie in sentiments Ms. Torres shared in an interview before the Olympics began: "If I don't get the gold medal at the Olympics, I know I can be a gold medal mom," she announced. As her quotation foretold, she may have defended her self-esteem against the loss of first place by refocusing her aspirations specifically homeward, perhaps beginning to identify more as a winning mother than an Olympic swimmer. Because to do well as both a swimmer and a mother represents an oppositional situation day to day, the two identities may share a special link, leading one to be an especially accessible salve when faced with a threat in the other. Importantly, many of the rest of us may deal with failure in an important role in a similar way – habitually defending ourselves from a threat in one role by turning our attention to a competing role. What's more, the act of using such an *oppositional*

identity over and over to ease threats in a different identity might have consequences for how strongly we identify with those roles over time.

In this paper, I will present *oppositional identity theory*, proposing that there are sets of role-based *oppositional identities* within people's self-concepts which exist in a state of constant tension such that a) the behaviors necessary to fulfill one role necessarily run counter to those to fulfill the other, and b) people are equally committed to both roles. The features of these *oppositional identity sets* lead to predictable consequences for how a person's self-concept develops. Moreover, the theory suggests that managing acute threats to a such an identity in opposition to another is especially likely to involve spontaneously focusing on achievements in the conflicting role to shore up self-esteem – a process I have labeled *oppositional self-affirmation*. Finally, I will propose two studies to examine these processes in the domains of work and family life, particularly with regard to how men and women's identities in these domains may develop differently due to divergence between the genders in the degree to which the two roles are experienced as an oppositional set. Specifically, I will propose that taking an oppositional identity perspective on these important areas of people's lives can help explain gender differences in workforce participation rates through an understanding of how balancing professional and parenting life may be different for men and women.

Prior research has certainly shown that people occupy many different roles in their lives, develop identities around them and that doing so is often a good thing for self-esteem overall (Baruch & Barnett, 1987; Linville, 1985). Further, research has shown that self-esteem can be restored after a threat to one identity by focusing on an alternative one (Steele, 1988). Yet, the literature on self-esteem maintenance has not focused on what specific identities are likely to be recruited to deal with threats, but doing so may shed light on how the self-concept develops. When a threat occurs in an identity in opposition to another, there may be something unique about how its oppositional identity is positioned in the mind relative to the threatened identity that makes it especially useful or accessible to be recruited in defense. Moreover, because

using oppositional self-affirmation to successfully restore self-esteem could lead to it becoming habitual, I will argue that it has the potential to shape the self-concept over time. To do this, I will first review the literature on the self, emphasizing how people develop an integrated, hierarchical self-concept comprised of multiple, sometimes opposing, identities. I will then review how threats to these identities are dealt with, using what is known about these methods to argue that when a threat occurs in an identity in conflict with another, oppositional self-affirmation is an especially likely strategy. Next, I will examine how using oppositional self-affirmation as a strategy to resolve threats to self-esteem might have consequences for the organization of the self-concept, using findings from research on behavioral conditioning and behavioral tension systems. Finally, I will consider what factors might determine whether or not people use oppositional self-affirmation in response to threats in specific societal roles (e.g., as a professional) to help explain some group-level disparities in dropout from these roles.

The Integrated Self-Concept: Identities and Organization

One of the main forces driving human behavior is the motivation to maintain a positive view of one's self (Baumeister, 1998), reflecting a healthy level of global self-integrity (or self-esteem generally, see Tesser, Crepaz, Collins, Cornell, & Beach, 2000) by maintaining a positive self-concept. To appraise one's general self-concept, however, is no simple task. In a review of the literature on the self, Baumesiter 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; McConnell & Strain, 2007). To understand how a positive self-concept is maintained, then, requires an understanding of how a person manages the multiple self-aspects that make it up.

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, developed by Kahn, Wolfe, Quinn, Snoek, and 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 (Harter, 2006; Harter, Bresnick, Bouchey, & Whitesell, 1997; Crocker & Wolfe). For example, growing up, "Matt" may have many identities, related to such things as his role as a first-baseman, a grocery bagger, a friend, and a son. Instead of viewing these self-aspects as separate and unrelated parts of himself, he instead will begin to integrate experiences in these domains into his more general idea about who "Matt" is.

His varying successes in these roles will feed his global self-integrity, and although all of his identities have the potential to influence the self-concept, some tend to have more impact than others. How this impact is determined is a function of how his self-aspects are weighted in relation to one another in a hierarchy. The literature generally agrees upon the idea that higher weight is given to self-aspects to which a person is committed more strongly, and thus they occupy a more prominent position in the hierarchy. Commitment to an identity is defined as the extent to which a person subjectively sees a role as expressing or fulfilling a fundamental part of the self, combined with the likelihood that the role is persevered upon in the face of role-related

threat, or when the costs of playing that role become evident (Burke & Reitzes, 1991; Lydon & Zanna, 1990).

Determinants of Role Commitment

Although researchers differ somewhat regarding how exactly commitment to a self-aspect is formed (see McCall & Simmons, 1966; Rosenberg, 1979; Stryker, 1980), two of its main determinants are centrality and salience (Stryker & Serpe, 1994). Centrality is the degree to which a certain identity is subjectively considered important to a person's overall self-concept. Indeed, Kanter (1972) has theorized that commitment to a self-aspect is increased to the extent that a person *perceives* it as "expressing a fundamental part of himself" (p. 66). In other words, central identities are those that reflect a person's self-defined core values. Because these core values are often the standards by which self-integrity is measured (Rokeach, 1979; Steele, 1988), competency in domains that reflect those values carries more weight than competency in other domains. As a result, people are more committed to these central self-aspects because behavior in those self-aspects is more diagnostic of who they are (at least to themselves). Lydon and Zanna (1990) demonstrated this idea by showing that, when faced with adversity, people were more committed to ongoing projects the more they perceived them as "consistent with the values that guide [their lives]". To the extent that a person's values change over the course of time or in response to life events, the hierarchy of self-aspects will change accordingly.

In addition to centrality, salience also plays a role in the organization of the identities making up the self-concept. Salience is the readiness to behave according to a given identity, as a result of it being part of a cognitive self-schema. Schemas guide information processing by providing links between pieces of information (Deaux, Wrightsman, Sigelman, & Sundstrom, 1988) and thus the stronger a schema is, the more readily available it is when relevant information is encountered. Moreover, the more links a schema provides, the more any given

piece of information is relevant to it. Just as cognitive schemas develop to organize many types of information people encounter day-to-day, self-schemas develop as people integrate their own past experiences into cognitive structures that are essentially generalizations about the self in particular domains (Markus, 1977). In terms of the self, the more, and more varied, experiences go into the creation of a self-schema for a role, the more salient it becomes because new information is more likely to be processed according to it. For example, a person may have a strong self-schema for her role as a business executive, generalized from a variety of experiences. Additionally, she may have a weak, more specialized self-schema for her role as a part-time library volunteer. When she reads the newspaper in the morning, the information contained within it is much more likely to be processed according to her self-schema as a business executive because the links for this schema are stronger and more numerous than for her self-schema as a library volunteer.

Importantly, commitment to a role is dynamic, because both centrality and salience can shift (often independently) as a result of new experiences (Markus & Wurf, 1987). As people attach more subjective importance to a particular role, the centrality of that role will go up and thus increase a person's commitment to that role. Such shifts can happen as a result of changing life circumstances. For example, though a man may have developed an identity as a caretaker from prior experiences, he will attach more importance to this role the day his first child is born. Similarly, while values may change over the course of a person's life, they may also be malleable on a more temporary timescale as well, meaning that role centrality can shift accordingly. For example, focusing specifically on the value of a particular role may temporarily increase its subjective importance (and hence commitment). If a teacher explains the value of volunteer work to a student, the teacher may come away from the conversation with a temporary increase in the subjective importance of volunteering to his or her own life. In addition, the salience of an identity will change as a person's new experiences are integrated into existing self-schemas such that the information links it provides are stronger and more

numerous; as the salience of that particular role increases, so too will commitment to that role. For the new father, the amount of time he spends engaging in caretaker behaviors will be integrated into his self-schema for this identity, and as a result it will be a more salient identity for him. Likewise, salience may also be subject to momentary shifts. Seeing a movie where the central plotline revolves around a parent-child relationship may temporarily increase the salience of a person's parental identity, and booking a plane ticket for an upcoming professional conference may temporarily increase the salience of a person's career identity.

In summary, an identity's position in the self-concept hierarchy is determined largely through its salience and centrality. Salience is the accessibility of an identity in the mind according to a cognitive self-schema, which is linked to the readiness to behave according to that identity. Centrality reflects the degree to which a given identity is *subjectively* important to a person in his or her self-concept. Moreover, centrality and salience can be altered through either temporary or chronic accessibility effects. With either increased salience or centrality, all else being equal, commitment to a role will be stronger and thus it will occupy a more important position in the self-concept hierarchy.

Balancing Multiple Roles

With so many self-aspects to integrate, the self-concept can become quickly multifaceted, a concept referred to as self-complexity (Linville, 1985). People may differ in their degree of self-complexity, meaning that they may have varying numbers of independent self-aspects to make up their self-concept. In general, because self-complexity allows people to construct their self-esteem from across many identities, researchers agree that having more complex self-concepts can be useful in maintaining positive self-appraisals and more consistent levels of positive affect (Linville).

Normally, even with complex and sometimes conflicting systems of identities, the extent to which people act in accordance with these various demanding self-aspects is easily

determined because it is generally reflective of how they are organized in the hierarchy.

Because people are more committed to portraying themselves according to the identities to which they have a stronger commitment, the degree to which a given identity guides and directs behavior is a function of its salience and centrality.

However, when the roles conflict, the extent to which people engage in the behaviors for a given role is less easily determined, and as a result people tend to experience more negative outcomes (Chapman, Ingersoll-Dayton, & Neal, 1994; Cooke & Rousseau, 1983, 1984; Frone, Russell, & Cooper, 1992; Gerson, 1985; Goff, Mount, & Jamison, 1990; Hammer, Allen, & Grigsby, 1997; Settles, et al., 2002; Showers, 1992). This state of affairs is often attributed to the fact that people have a limited supply of resources to devote to roles and when the roles conflict, it results in role resource scarcity (Goode, 1960). In the case of conflicting roles, efforts to balance the demands of multiple roles becomes much more difficult. This reveals the downside to high self-complexity: the more self-aspects a person has, the harder it becomes to manage them, and to shift among them

Conflict between self-aspects (often discussed in terms of “role conflict”; Katz & Kahn, 1978) has generally been conceptualized as a tradeoff: two identities conflict if they cannot be performed simultaneously in a satisfactory manner (Goode, 1960; Hugenberg & Bodenhausen, 2004; Katz & Kahn; Settles, et al., 2002). As Greenhaus and Beutell (1985) note this is often because of one of three types of conflict.¹ First, a person may not have enough time to perform both roles adequately (time-based conflict), for example when a student needs to finish a paper one evening for a class, but simultaneously needs to run a club meeting on campus. Secondly, conflict can occur because the strain produced by difficulties in one role may interfere with performance in another role, as may happen when the stress of a romantic breakup distracts a person from focusing on their career responsibilities. Additionally, conflict may be behavior-

¹ Greenhaus and Beutell (1985) developed these three notions of conflict specifically in relation to work-family conflict, but they are general enough to be applied to other types of role conflict as well.

based, meaning that the behaviors required for one role are necessarily in opposition to those required for the conflicting self-aspect. For example, for an adolescent, it is often difficult to act as both “the cool kid” and “the smart kid” at school because the two require very different behaviors. Demonstrating academic ability cannot occur while trying to appear as though school matters less than popularity, and homework cannot be done while hanging out with friends in a social setting.

Resolving the tradeoff between conflicting identities can be comparably easy or difficult, depending on the two factors that determine the self-concept hierarchy: salience and centrality. Negotiating the tradeoff between the two is not merely a question of which one is more important overall, but rather which one is more important in a particular situation. Because the salience of a particular identity depends on the strength of its schema, which is activated automatically in response to relevant situational cues, it is likely the first determinant of how the tradeoff is resolved. If the situation clearly calls for the engagement of one self-aspect or the other, then cues from the environment will easily activate that self-aspect schema, and a person will behave consistently with it. Yet there will exist situations that may cue both identities at once, and in this case it is relative levels of centrality that will determine the hierarchy, and hence what behavior to express. When both identities are activated, if a person is much more committed to one self-aspect than another, then the choice of which one to engage in becomes obvious.

Oppositional Identity Sets: Roles in Tension

Thus, just as past research has shown, there are many roles in a person’s self-concept that trade off and conflict on some level, and the relative commitment to one role versus another will determine how role conflict is resolved. However, I argue that it is important to consider *oppositional identity sets*, which are defined by a unique type of role conflict. Oppositional identity sets are identities to which a person is equally committed, and that chronically oppose

one another due primarily to behavior-based role conflict (e.g., serious student and fraternity member, Hugenberg & Bodenhausen, 2004). More specifically, an identity set is oppositional if 1) the roles sit at approximately the same level in the self-concept hierarchy, and 2) exhibit behavior-based role conflict such that the set of behaviors that define success in one role (either culturally, psychologically, or objectively) necessarily oppose success in the other role.

Behavior-based role conflict is an especially interesting type of role conflict, because it highlights why all role conflict is not the same. Some types of role conflict – like that for oppositional identity sets – may be especially hard to manage because the source of the problem is not merely rooted in time- or strain-management, but in a fundamental opposition between the behaviors required to fulfill a set of roles. I draw a distinction between roles that conflict, and roles that are truly in opposition. Some sets of roles may be in *conflict* due to a time-crunch or the distraction caused by worrying about one role while doing the other, but importantly, working towards fulfillment of one does not hurt chances of success in the other (and in some cases it may even help). For example, to be a good football player one must train hard in aerobic exercise, weightlifting and other activities that are generally useful to be a good athlete. If a person were balancing being a good football player with being a good baseball player, then going to football practice very well may not leave enough time to go to baseball practice also, but doing so would not directly lead away from success as a baseball player because the behaviors at practice would still be in the service of being a good “athlete”.

On the other hand, to the extent that an identity requires behaviors that are in direct opposition to the behaviors needed to fulfill other roles, a unique tension will occur as people negotiate their fulfillment of these self-aspects because working toward success in one role necessarily means moving away from it in another. Again turning to the “cool” versus “smart” dilemma: if being a “cool kid” in a particular school is defined largely by a disaffection with academic success, and being a “smart kid” is defined by knowing the answers in class, then engaging in behaviors geared toward success in one role *necessarily* opposes success in the

other role. Answering questions right in class to succeed in the “smart kid” identity would detract from his success at being the “cool kid”, just as pretending not to know the answers for the purpose of feeding his “cool kid” identity leads to less recognition from the teacher as the “smart kid”. As I will elaborate, the unique features of oppositional identities like these lead to consequences for how threats to role successes are managed, and may explain important sociological differences in role identification and engagement.

Identity Threat and the Psychological Immune System

In people’s lifetimes, thousands of events occur that challenge their sense of themselves as successful, good, virtuous, or in control of their own lives (Steele, 1988; Sherman & Cohen, 2006). These self-threats come in many forms, including things like failure at work, unfulfilled life goals, romantic breakups, information that conflicts with a long-held belief, and a fight with a loved-one. What these events have in common is that they are personal losses or failures that threaten people’s self-integrity by calling their ability to meet culturally and socially significant standards into question² (Leary & Baumeister, 2000). Most often, these failures are localized threats to a single identity (e.g., being fired as a threat to one’s professional identity), but because the self-concept is constructed across a person’s various identities, the consequences are felt at the level of global self-integrity. Such threats are often experienced as a type of cognitive dissonance (Festinger, 1957) such that the inconsistency between one’s failure and the standards one holds him or herself to in a particular domain provokes discomfort. To resolve this discomfort, the ‘psychological immune system’ (Gilbert, Pinel, Wilson, Blumberg, &

² As a result, personal self-integrity threats are dealt with differently than social identity threats that threaten the societal value of an entire social group (e.g., Tajfel & Turner, 1979, 1986). Whereas people alleviate the discomfort of social identity threats at the level of the group (e.g., reasserting group boundaries [Jetten, Spears, & Manstead, 1994], favorably shifting the standards against which a group is measured [Tajfel & Turner, 1979], disidentifying from that group [Tajfel & Turner], etc.), people tend to address self-identity threats on a personal-level. Of course, because the self-concept is partially constructed from group identities, there will be some overlap in these strategies, but in general I will consider self-integrity restoration strategies as personal, and separate from those used in response to social identity threats.

Wheatley, 1998; Sherman & Cohen, 2006) is activated to deploy one of a number of different strategies to restore self-integrity.

The psychological immune system can generally attempt to resolve a threat in three different ways (Sherman & Cohen, 2006). To illustrate the differences among these self-integrity restoring methods, consider an example of a graduate student who has just received critical feedback about her job talk and is now experiencing threat in relation to her career identity. The first method is to accept the threat and accommodate to it. In this way, the threatening information is used as a catalyst for behavior or attitude modification. Ideally, after such changes, a person will be better able to meet the standards set for the once-threatened identity, and self-integrity will be restored. Often, using this method successfully might mean dealing with the threat head on, essentially taking steps to improve performance in the threatened domain in order to feel more capable of meeting its standards (Tesser, et al., 2000). In the case of the graduate student, she could acknowledge that the talk was not up to par (either in an objective sense, or relative to her peers on the job market), and work to improve it by making the slides clearer and practicing in front of an audience to increase her fluency with the material. In doing so, the threat to her career identity would be alleviated because she will feel better able to meet the standards set for herself as an academic job candidate.

However, because directly addressing a threat is often difficult, a person can instead engage in two types of psychological adaptations to restore self-integrity in response to a threat. In contrast to accommodating to the threat, the focus of these responses is on the symptoms of a threat, essentially decreasing its impact on the self-concept without changing performance to address its cause. These types of psychological adaptation methods can be distinguished from one another depending on whether they operate directly or indirectly to ameliorate the impact of a threat. The psychological immune system can allow for cognitive distortions of the threat, such as reframing it in a less threatening way (Dweck & Leggett, 1988), or “defensive biases” (Sherman & Cohen, 2002) that dismiss a threat’s existence (Kunda, 1987), trivialize its

importance (Simon, Greenberg, & Brehm, 1995), or promote disidentification with the threatened domain (Major, Spencer, Schmader, Wolfe, & Crocker, 1998; Steele, 1997). Although these more defensive direct psychological adaptations can restore perceived self-integrity, they often mean that the opportunity for real improvement in response to a threat is bypassed. In the case of the graduate student, she might discount the opinion of the faculty member who gave her the feedback, or in an extreme case might start to disidentify with academic research as a career she is interested in pursuing. As a result, these defensive biases might lead to negative consequences on the job market that could have been avoided had the threat been addressed.

Alternatively, the psychological immune system can promote indirect psychological adaptations, in which a person focuses on one of their other positive self-conceptions in another domain to use it as a resource to deal with the feeling of dissonance from the threat indirectly through self-affirmation (Steele, 1988; Sherman & Cohen, 2006), or strengthening ties with important social groups (Hogg & Abrams, 1992; Turner, Oakes, Haslam, & McGarty, 1994). In doing so, it reduces some of the *implications* of the threat to one's overall sense of self-integrity by diluting it with another positive self-conception, thus reducing the accessibility of the negative information (Koole, 1999). Consequently, people are able to realize that their global self-integrity is not a function solely of immediate performance in the threatened domain, and as a result they are often able to respond to the threat and use it as a learning experience. Moreover, the ability of people to shift rapidly between identities to accommodate role demands suggests that spontaneously switching focus from one self-aspect to another could be a means of regulating identity-based emotions, even without conscious awareness (Smith & Mackie, 2006). Moreover, a few important studies (e.g., Tesser, et al., 2000) indicate that when the opportunity to use these methods is available, the degree to which people engage in them shifts as a function of threat, and when they are utilized they are consistently effective in restoring self-integrity (Sherman & Cohen). Using the graduate student as an example, she may now focus

spontaneously on her recent accomplishments as a musician to reduce the impact of the critical job talk feedback because she has been accustomed to shifting between these identities. In doing so, she would be able to avoid a major hit to her self-worth as a result of the critical feedback and be less defensive in her response to it.

Importantly, the psychological immune system is unitary and satisficing, meaning that these strategies can substitute for one another in the common purpose of restoring self-integrity³ back above a critical threshold (Tesser & Cornell, 1991; Tesser, et al., 2000). The majority of the research in the area of self-integrity restoration has focused on whether one strategy is as effective as another in ameliorating the effects of threats to the self-concept. However, not as much is known about what might predict the use of one strategy over another or what consequences these choices might have.

Oppositional Affirmation as a Threat Management Tool

The domain in which a threat occurs is one particularly important factor determining which strategy is employed. Certain identities may commonly incur certain types of threats, and these threats may be effectively dealt with using certain techniques. Of particular interest with regard to threat management are sets of oppositional identities because their unique characteristics make a particular instance of self-affirmation, *oppositional self-affirmation*, the probable threat response. Specifically, there is one feature of oppositional identities that predicts the emergence of this threat management technique above all others: the salience of oppositional identities to one another. In the following section, I will address why this feature

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leads to oppositional self-affirmation as a threat management strategy, and what consequences the use of this technique has for the organization of the self-concept.

Of course, the propensity to use one threat management strategy over another is not a conscious choice. Instead, the psychological immune system will deploy the most accessible strategy likely to alleviate the threat. Because to my knowledge there is no unequivocal evidence to indicate that one threat management strategy is better at restoring self-integrity than another in an overall sense, strategy accessibility will be determined most strongly by the domain in which the threat occurs.

Paramount to determining which threat management tool is most accessible for oppositional identities is how they are seated in relation to one another in the self-concept hierarchy. This is because their relationship to one another influences both how threats are interpreted, and how they are addressed. A set of oppositional identities, as discussed above, consists of two identities to which a person is similarly committed to fulfilling, and for which the behaviors needed to fulfill one necessarily run counter to those needed to fulfill the other. This particular combination of features makes oppositional identities constantly in tension, and also has immediate consequences for how threats are interpreted.

Importantly, in terms of content, threats in an identity of an oppositional set would be no different from threats in a non-oppositional identity (i.e., receiving a poor performance review could constitute a failure to fulfill a career identity, whether or not that career identity is part of an oppositional set). However, the aspect of a threat that will differ for identities in an oppositional set is the cause to which a given threat is attributed. From classic attribution literature, we know that when a person experiences failure, they often attribute it to a salient situational cause rather than to a personal weakness (Jones & Davis, 1965). Indeed, in part because they are constantly in tension, activating one identity of an oppositional set may cause activation of the other because they have become linked in conscious experience. When both roles are simultaneously salient, so too is the conflict they present to one another (and hence, an easily accessible

explanation for a failure; Hugenberg & Bodenhausen, 2004). Because an oppositional identity is in constant tension with its twin, it may emerge as the most salient cause of a given threat. In other words, a person for whom a given identity is in opposition with another may attribute failure to perform up to par as a direct result of having devoted limited resources to the oppositional identity, whereas a person for whom that identity is not in opposition with another may attribute the failure to a different situational cause.

Certainly not all threats to an identity in an oppositional set will be attributed to its oppositional twin, such as when there is a particularly obvious external reason for a failure. For example, when a person receives critical feedback from a manager widely known in an organization for his or her unrealistic expectations and unfair tactics, then any feelings of failure would most likely be attributed to the boss, regardless of whether that person's career identity exists in an oppositional set. However, when the cause of a particular identity threat is vague, people for whom the threatened identity exists in opposition to another may be particularly likely to pin the blame on the oppositional twin. This is because the defining features of oppositional identity sets makes an oppositional twin both chronically cognitively salient and known to exert a force limiting the success in the threatened domain. It may be useful to think about identifying the cause of a failure much like trying to solve a crime. When you catch a suspect in the act, there's no question about the cause of the crime and no need to look elsewhere. This situation is akin to dealing with an identifiable external cause of an identity threat – an oppositional twin, if it exists, is never a suspect. However, when the cause of the crime is vague, and upon arrival on the scene, you look around and immediately see a person who has been known to commit similar crimes in the past (i.e., the oppositional twin), the blame would easily be pinned there. Alternatively, if there were no suspicious individual who happened to be on the scene, you would have to cast your net wide to find a cause for the crime. Thus, when an identity of an oppositional set is threatened, I argue there is always a suspicious individual lurking on the scene, ready to be blamed for failures that have no other ready explanation.

Critically, identifying the perceived cause of a given threat affects the perceived usefulness of the various self-integrity restoration strategies. Many common strategies may not be perceived as useful when the cause is perceived to originate from an identity's oppositional twin. First, even though it is never easy to accommodate to a threat by changing performance (Sherman & Cohen, 2006; Tesser, et al., 2000), it is an especially unattractive strategy in the case of oppositional identities because the oppositional partner of the threatened identity is a salient external cause for the failure. By definition, this means that changing performance in the threatened domain would be viewed not only as difficult and potentially threatening in and of itself, but useless because it would not be addressing the perceived cause. For example, if a high-achieving president of a student club received poor feedback about his academic performance mid-way through the semester, it would likely threaten his identity as a good student. However, because he might easily blame his poor performance not on his grasp of the material but on his opposing role as the club president, he is unlikely to address the threat directly by working harder in class because a) acknowledging the need to do this undermines his sense of himself as smart, and b) does nothing to address the perceived cause of the failure: the opposing role of club president.

A person could alternatively engage in "defensive bias" strategies such as trivialization of the threat. Again, however, in the case of a threat to an identity in opposition with another, the oppositional identity is especially likely to be pinned as the source of the threat, and thus trivialization of the threat constitutes denial of an equally important alternative identity. Using the example of the student club president, if his role as club president is a salient cause of the performance failure in his class, then trivializing the threat means trivializing the importance to his self-concept of his role as club president, which is unlikely to be a palatable way to restore self-integrity.

On the other hand, self-affirmation may be perceived as a useful method because it does not involve distorting the importance or existence of an identity, and as a result is devoid of

immediate downsides of the other strategies. In particular, because of its salience as a cause, the oppositional identity is also especially salient as a comfort, making it a particularly obvious role in which to self-affirm. This makes it a specific case of self-affirmation, what I have labeled *oppositional self-affirmation*, and would be the most likely threat response for sets of oppositional identities. In sum, oppositional self-affirmation is a likely method of self-esteem restoration both because of the usefulness of general self-affirmation for threats to identities of oppositional sets, and because of the chronic salience of one identity to its oppositional twin.

Consequences of Oppositional Self-Affirmation for the Self-Concept

Acute Effects

Interestingly, it is possible that engaging in *oppositional self-affirmation* might promote some degree of disidentification with the threatened identity, an unintentional byproduct that would not emerge for non-oppositional identities. To better understand why this could be the case, it is useful to consider the effects on causal attribution and threat management resulting from how oppositional identities are positioned in the self-concept hierarchy. First, as mentioned above, the unique features of oppositional identity sets create a situation in which the oppositional role is likely to be perceived as the ultimate cause of a threat, this has important consequences for the balance between the two after a threat. As revealed in classic work in cognitive dissonance, people often attach more importance to identities for which they have suffered consequences. For example, undergoing serious fraternity hazing strengthens pledges' ties to the organization more than less uncomfortable initiation rituals (Aronson & Mills, 1959). Pledges rationalize the discomfort of hazing by concluding that the organization must be all the better because they worked so hard to get in. Similarly, once a person perceives an oppositional identity as the cause of a failure, he or she may attach greater importance to it as a way of rationalizing the discomfort it caused.

Recall that normally the two identities of an oppositional set are seated at approximately the same level in the self-concept hierarchy, meaning that the commitment to each is similar as a function of their similar levels of centrality and salience. Consequentially, once greater importance has been attached to the causal identity, its centrality is increased in relation to its threatened twin – making one more important than the other as a result. In a similar manner, to address the threat by engaging in oppositional self-affirmation involves focusing on its importance by definition, and as a result its salience and centrality to the self-concept are increased further (e.g., Lydon & Zanna, 1990). In a relative sense, then, the threatened identity may be forced down the self-concept hierarchy. Indeed, research has shown that threatening information (including the domains from whence they come) is inhibited when thinking about or affirming with another identity (Hugenberg & Bodenhausen, 2004; Koole, Smeets, van Knippenberg, & Dijksterhuis, 1999). As a result, the state of tension between the two identities shifts in favor of the causal identity. Thus, although disidentification may not be deployed directly by the psychological immune system as a strategy for dealing with threats to an identity in opposition to another, it may occur as a result of cognitive processes involved in threat attribution and self-affirmation.

Although research has not yet directly addressed whether commitment to identities shifts in response to oppositional self-affirmation as a threat management strategy, the cognitive adaptations necessary for it to work certainly raises the possibility. Moreover, given that these processes have the potential to change the landscape of identities in the self-concept even temporarily, the next section will review research that suggests that these shifts can become more permanent over time.

Chronic Effects

For sets of oppositional identities, threats may be especially likely to be resolved through the use of oppositional self-affirmation, which may mean that it becomes the default response to

threats in those domains. Basic findings from the literature on operant conditioning (Skinner, 1938) suggest this to be true. Given that a strategy works successfully to restore self-integrity after a failure, a person will be more likely to use that strategy again in the future because he or she has been rewarded with the removal of negative feelings of threat. In other words, threat management tools operate on the principle of negative reinforcement. If a strategy has a high initial probability of being used successfully in the first place (as is the case with oppositional self-affirmation), its use may be conditioned. As with all conditioning based learning processes, strong associations being formed between it and the threat it addresses can lead to repeated deployment of a certain management strategy, making it all the more likely that it is used in response to future threats, making it a “chronic” response (Brown & McConnell, 2008; McConnell & Strain, 2007).

Used over and over, any psychological immune system response has the ability to shape changes in the self-concept. Yet, if threats to oppositional identities were rare, the use of this strategy would be infrequent and such conditioning would not occur. But in the case of oppositional identities, there is evidence that roles in conflict with one another may be especially likely to sustain threats, if only because of the tension between them. For oppositional identities, the directional nature of these self-concept changes is predictable. Unlike other self-aspects, devoting resources to one identity in an oppositional set *necessarily* means taking them away from its equally important twin, thus precluding its fulfillment. With achievement in one identity constantly contingent on neglect of another, failure is bound to occur more often within the oppositional set than for other identities (which may conflict but are not truly oppositional). These neglect-induced failures would not only occur more often in oppositional identities, they could also be more uniform in the sense that fulfillment of one identity often means sacrificing the same aspects of another over and over. For example, if to excel as an athlete means traveling for competitions every weekend, it may be that the same weekly homework assignment is pushed aside during the season as a result. With more uniform threats, engaging

in tactics to address them becomes more habitual, meaning that there would be less variability in threat management strategies for oppositional identity sets.

From what is known about the self-concept, identities, and the effects of acute threats on feelings of self-worth, oppositional self-affirmation presents a plausible way in which identification with roles in conflict with one another can shift predictably in response to threat. Yet, as long as threats and the use of oppositional affirmation are *relatively* few and far between, the self-concept will have a chance to rebalance itself and self-concept hierarchy will remain unchanged, and for better or worse the identities within an oppositional set will continue to be in opposition.

However, there is a possibility that given a barrage of threats to oppositional identities, these small, acute, changes in identification may have big effects on people's longer-term self-concepts. In an influential book outlining the grand lessons of social psychology, Ross and Nisbett (1991) describe the concept of psychological tension systems, which is a useful framework for examining how threats and affirmations in oppositional identity sets can impact the self-concept. In an individual, tension systems refer to behavior in equilibrium with the forces inhibiting and facilitating its occurrence (c.f., Lewin, 1951). If forces are added or taken away from the system, the equilibrium shifts, sometimes dramatically. The tradeoff between time spent in one of two oppositional identities is just such a tension system. Forces encouraging behavior consistent with one role (e.g., salience, centrality) are forces inhibiting behaviors of its twin, and as a result a balance is achieved between the two. Both identity threat and the use of oppositional self-affirmation for its resolution are forces that can influence the tension between the two identities. When a person experiences a threat to an identity and subsequently deploys oppositional self-affirmation to solve it, the forces inhibiting the threatened role and those facilitating the affirmational role are both strengthened, leading to behavioral equilibrium tilted toward the affirmational identity. With acute threats, the balance may be thrown off briefly, but equilibrium can be restored over time.

Yet, as a result of uniform threats and threat-management strategies in oppositional identities, shifts in the equilibrium between them could become chronic over time if the threats are numerous or large enough. For every threat to an identity that is dealt with by affirming with its oppositional twin, cognitive resources are removed from the threatened identity. As a result, the potential for threat to that same identity has increased because there are necessarily fewer resources available for its fulfillment when focusing on its oppositional twin. Moreover, because the probability of experiencing another threat is higher, the probability of reaffirming with its oppositional identity increases as well. Over time, this process may capitalize such that more attention is given to the affirming oppositional identity and less to its chronically threatened twin, resulting in a more permanent shift in the identities relative to one another in the self-concept hierarchy. For example, if after returning victorious from a weekend of traveling for athletic competition, a person receives a “0” in an important class for not turning in the homework, she will feel a sense of failure that may be explained (and soothed) by focusing on the victory. As a result, her athletic identity will be strengthened relative to her student identity, at least temporarily. This slight shift in the positioning of these two identities may lead her to forego other academic responsibilities that week in favor of an extra practice or weightlifting session that would help her repeat her victory the following weekend. Hence, she may experience more threats to her academic identity (e.g., more missed assignments, a failing pop-quiz grade), which she will likely manage again through affirmation with her athletic identity. Over time, the imbalance of behaviors devoted to her athletic identity relative to her student identity could shift the positioning of these two identities in her self-concept hierarchy permanently such that she becomes chronically more committed to being an athlete than succeeding in school.

Summary of Oppositional Identity Theory

This conception of oppositional identities and the use of oppositional self-affirmation as a threat management tool makes testable predictions about how the dynamics of the self-concept

are influenced by threat and self-integrity restoration strategies. First, this theory expands upon what is known about role identification and role conflict to assert that there are sets of oppositional identities to which people are equally committed, and yet the collection of behaviors needed for success in one role necessarily oppose success in the other role. The unique features of oppositional identity sets predict that these sets of identities will incur more threats than other non-oppositional pairs because the tension between them creates a situation where one identity will inevitably be neglected. Second, these threats will likely be dealt with using oppositional self-affirmation to restore self-integrity. Third, the chronic accessibility of oppositional self-affirmation as a threat management strategy makes responses to threats in oppositional identity sets less variable than responses to threats in other self-aspects. Fourth, when oppositional self-affirmation is used as a threat management strategy, it will shift the relative commitment between the identities in the oppositional set in favor of the affirmed identity such that identification with the affirmed domain will strengthen and identification with the threatened domain will weaken. Finally, repeated use of oppositional self-affirmation as a threat management tool should lead to more permanent shifts in identification with the two self-aspects that comprise an oppositional threat.

Using Oppositional Self-Affirmation to Examine Sociological Trends in Role Identification

Because, as stated earlier, roles are defined by social expectations for behavior, what constitutes “success” for a given role can differ by social group as a function of those expectations. In other words, although the role may be nominally the same, the *behaviors* expected for fulfillment of that role may differ qualitatively by group category. The social construction of roles allows for the possibility that a set of roles may be oppositional for one group of people but not for others. As a consequence, one group would experience the downstream effects of oppositional identity sets and the use of oppositional affirmation, and the

other would not. If so, it would provide a compelling framework for understanding group-level differences in role identification and engagement.

One particularly important domain in which to examine the divergence in how a set of roles is experienced by different social groups is in that of gender differences in workforce participation. Over the past few decades since the feminist revolution, sociologists have noted that despite the removal of official barriers to women entering the professional world, there continues to be many more women than men who leave the workforce, citing family obligations as a reason for leaving (Greenhaus & Powell, 2003; Handelsman et al., 2005; Hewlett & Luce, 2005; Hirschman, 2005; Mason & Goulden, 2002, 2004). Moreover, women who do stay in the pipeline are substantially less likely than their male colleagues to have a family (Mason & Goulden, 2004). Oppositional identity theory helps to structure some of these differences between men and women according to variation in factors moderating the experience of oppositional identities and the use of oppositional self-affirmation. Recent research by Park, Smith, and Correll (in press) have shown that there are gender differences in role compatibility perceptions for “professional” and “parent” identities. Specifically, as cognitive constructs, the role of mother generally does not overlap with the role of “professional” (Park, et al.), suggesting that the two roles cannot be simultaneously fulfilled and women must “toggle” between them (Ridgeway & Correll, 2004). On the other hand, social norms carve out parental responsibilities for fathers that are more congruent with the professional role. Traditionally, good fathers are good breadwinners, meaning that for men succeeding in a professional role means also succeeding as a parent, and there is not the same pressure for men to choose between them. Moreover, research has shown that the specific behaviors expected of good “mothers” (e.g., expected to do lots of caretaking) are quantitatively and qualitatively different from those of good “fathers” (e.g., expected to do some caretaking, more play, breadwinning), meaning that the behaviors expected of good “fathers” overlap with those of good “workers” (e.g., putting in “facetime” at the office) to a much greater extent (Kobrynowicz & Biernat, 1997). In addition,

women themselves tend to view the two identities as more oppositional than men, (Park, et al.), such that thinking of one lessens the salience of the other, suggesting that for women, devoting resources to being successful in a career necessarily takes away resources that are needed to be a good mom (e.g., time, energy).

In one study that illustrates differences between men and women in how they view the compatibility of the two roles, the strength of participants' implicit identification with the parent and professional domains was measured after priming their goals in each role (Park, et al., 2010). First, undergraduate participants were asked to think about their aspirations in one domain, and then they completed a pair of 'Go-NoGo Association Tasks' (GNAT; Nosek & Banaji, 2001) where they were required to pair self-referential words with either professional role images (e.g., briefcase, laptop) or parent role images (e.g., baby bottle, crib mobile). Next, they thought about their aspirations in the other domain, and repeated the same two GNATs. For women, self-role associations on the GNAT were much stronger for the domain that had just been primed, and this difference was equally strong for both roles. On the other hand, men showed asymmetry in their self-role association shifts such that the career prime strengthened their self-professional role association relative to their self-parent association, but the parent prime produced no difference in self-role associations between the two domains. These differences suggest that women switch back and forth in their self-associations depending on the domain recently primed, whereas men show only increased self-career associations in response to the career prime. These young women appear to have more difficulty thinking of themselves simultaneously as a parent and a professional than do the young men. Such work shows that group-level differences exist in the level of opposition between the parent and professional roles, which can lead to qualitative differences in how threats to these identities are managed. The group that experiences a set of identities as more oppositional will be more likely to use oppositional self-affirmation to resolve threats than the other group, who will use alternative (and potentially more variable) threat management tools.

Over time, the more chronic usage of oppositional self-affirmation by one group could lead to a permanent shift in the placement of one identity of a set in the self-concept relative to another. Indeed, women are much more likely to exit the workforce to tend to domestic responsibilities than are men, and gender differences in the use of oppositional self-affirmation could go far in explaining this disparity. Women may find themselves consistently affirming professional threats through focus on their role as a mother. Although the equilibrium between professional and parenting responsibilities may be restored to “normal” (i.e., both identities remain oppositional but committed to) for small numbers of acute threats, it is possible that given enough pressure to the system, the roles may cease to be oppositional, meaning that one identity is forced permanently lower in the self-concept hierarchy. In the case of balancing professional and parenting roles, women may find themselves markedly disidentifying with their professional identity as a side effect of repeatedly using their parent identity as an affirmation. Alternatively, to the extent they choose to reaffirm in the career domain, and yet recognize the incompatibility of parenthood with their career aspirations, they might find themselves choosing not to pursue parenthood. On the other hand, men may look to more variable sources to affirm their self-worth in the professional domain, perhaps even redoubling their efforts at work in order to address their failure directly, given that this comes at less cost to their parent identity. As a result, over time women may be less likely to continue to pursue career goals after threats than are men. The research reported in this thesis was designed to address the impact of oppositional identities and oppositional self-affirmation as it relates to men and women's identification with parenting and professional life.

Specifically, the research examined two questions. First, as a result of culturally-ingrained associations, do women experience the parent and professional roles as more of an oppositional set than do men, with the consequence that they more often look to one role within that set to affirm threats of the other? Second, does using one role to affirm the other lead to greater disidentification with the threatened role if the roles form an oppositional set?

Overview of Research

The research reported here tested these two questions for men and women in the context of threats to a person's professional success. The first study utilized an undergraduate sample to test whether women strengthened their implicit identification with the parent role relative to the professional role more so than men following a threat to the professional roles, especially if participants were led to perceive the roles as oppositionally. The second study focused more closely on the consequences of affirming with the parent role after a professional threat, examining the potential for different effects for women and men on self-esteem repair, implicit identification with being a parent or a professional, and explicit levels of engagement and satisfaction with the two roles.

Overall, the two studies were designed with an eye toward understanding the career and family choices men and women make, starting by examining whether culturally-driven differences exist in identification with the two roles and progressing through how those potential differences manifest in the responses the two genders have to professional threats.

II. STUDY 1

Study 1 tested whether experiencing a threat in the professional domain leads those who view the parent and professional role as in greater opposition to strengthen their implicit self-role associations in the parent domain relative to the professional domain, and whether there are gender differences in these responses. Although undergraduates for the most part are not currently dealing with the pressures of handling parenthood and career responsibilities, evidence from our own recent research has shown that they are certainly aware of cultural associations between the genders and the role of "parent" and "professional". Moreover, undergraduates have even shown gender differences in the degree to which these roles trade off in their own minds, indicating that this population is useful for examining the questions addressed here.

The general outline of the study is as follows. First, the relationship between the parent and professional roles was manipulated to be perceived by participants either as in Opposition, Facilitative, or participants were left to think of the two roles as they would normally (Control condition). Second, participants' implicit self-role associations with the Parent and Professional domains were assessed at this point as a measure against which changes in these implicit associations could be gauged. Next, participants were led to believe they had either experienced a Success or a Failure on a task ostensibly diagnostic of professional aptitude. Finally, changes in identification were measured by a second round of implicit self-role associations with the Parent and Professional roles. The study was thus a 2 (Domain: Me + Parent, Me + Professional implicit associations) X 2 (Gender: Male, Female) X 3 (Role Relation: Oppositional, Facilitative, Control) X 2 (Success/Failure) mixed factorial design, with the first factor manipulated between subjects.

Participants

Participants were 242 undergraduates (120 women) at the University of Colorado at Boulder. All participants were recruited through the Psychology Department subject pool website and received partial course credit in exchange for their participation.

Materials and Procedure

Participants came into the lab in groups of up to 8 people and were seated at an individual computer station equipped with a Macintosh laptop computer on which the entire experiment was run.

Role Relation Manipulation

Participants were first informed that before getting into the experimental tasks, it would be helpful to know a bit of background. They were randomly assigned to think and write about an assigned topic. Participants in the experimental conditions were asked to think about the

roles of parent and professional from either an Oppositional or a Facilitative perspective. Control participants were asked to write about their video game experience (complete text of the instructions for each of these conditions appears in Appendix A). In general, each of the three conditions focused on the following:

Oppositional:

“While many agree that it possible to simultaneously manage being a parent and having a career, they also speak to just how hard this can be.”

Facilitative:

“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.”

Control:

“While participating today, you will be performing some tasks that are like video games in that they require quick responses and good hand-eye coordination.”

Manipulation Check

Next, participants completed a manipulation check which consisted of one item each from the 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,*” Settles, Sellers, & Damus, 2002) and Role Separation scales (“*I feel that the role of parent and the role of professional are similar and compatible,*” Settles, et al.).

Implicit Self-Role Associations

Implicit Self-Role Associations are a measure of how strongly an individual psychologically associates him or herself with a set of roles at an implicit level, and scores are a function of both how much a person feels chronically connected to that role and of temporary changes in the salience of that role based on situational factors. The strength of an implicit self-role association can be taken as an index of a person's "connectedness" to a particular role at a given time (Hugenberg & Bodenhausen, 2004). In this study, the first measurement of participants' implicit self-parent versus self-professional associations assessed how connected the participants felt to each role after completing the role relation manipulation. The second measurement of these implicit role associations occurred after the Success/Failure manipulation and was compared with the first to assess changes in the salience of these two roles.

Implicit Self-Role Associations were measured using the GNAT (Nosek & Banaji, 2001). Two sets of two blocks each were used to measure the strength of associations between self and parent images, and self and professional images. One set was completed after the Role Relation Manipulation (Time 1 self-role associations), and one after the Success/Failure Manipulation (Time 2 self-role associations).

In a given block of the GNAT, participants were presented with items from a number of different categories, and they were instructed to press a button (a "GO" response) whenever an item from one of two focal categories (e.g., "*me*" and "*parent*") appeared and to make no response (a "NO-GO" response) when the item was not from those two categories (e.g., "*they*", "*professional*", and typically some irrelevant background category, in this case images and names of birds). The ease with which they are able to do this is a measure of the degree of association or fit between the two focal categories. Signal Detection Theory (Green & Swets, 1966) is used to analyze the data, and the principle dependent variable is d' calculated on the basis of the proportion of hits (correctly saying "GO" to items from the two focal categories) relative to the proportion of false alarms (incorrectly saying "GO" to items from any of the non-

focal categories). d' is a measure of discriminability between the focal and non-focal categories. The easier it is to simultaneously keep in mind the two focal categories (e.g., “*me*” and “*parent*”), and to distinguish these from the background categories, the higher the d' . Thus higher d' scores indicate a stronger association between the two focal categories. The same set of items was used in each of the two GNAT blocks; the order of the blocks was counterbalanced across participants. Specifically, items were presented from six categories (see Appendix B). Participants “GO” to Me+Parent in one block and Me+Professional in the other. Across the 100 trials in each block, 20 trials contain *me* words (*Me, I, Myself, Mine* presented five times each), 20 contain *them* words (*They, Them, Theirs, Their* presented five times each), 20 contain parent images (baby bottle, crib, pacifier, crib mobile, stroller; presented four times each), 20 contain professional images (briefcase, executive desk, leather bound organizer, laptop computer, PDA; presented four times each), 10 contain names of birds (e.g., *eagle, hawk*; each presented once), and 10 contain images of birds (each presented once).

The differences in performance between the two sets of two blocks each of GNATs will be a measure of changes in implicit self-role associations after threat. Increases in d' to a particular block after the Success/Failure manipulation indicate increased levels of self-role associations for that domain at Time 2, indicating that the role was more strongly activated following the Success/Failure task compared to Time 1. Decreases in d' to a block after the Success/Failure task indicate decreased levels of self-role association for that domain, indicating inhibition of that role compared to baseline.

Success/Failure Manipulation

Following collection of the Time 1 implicit self-role associations measured after the Role Relation manipulation, participants completed the Success/Failure manipulation in which they were randomly assigned to complete either the Success or Failure version of the *Remote Association Task* (RAT, McFarlin & Blascovich, 1984; see Appendix C for the full sets of words

in each condition). This is a task in which participants are asked to come up with the word that links a set of 3 words together. The two levels of difficulty (and resulting feedback) can function as a manipulation of Success/Failure, especially when participants are led to think that the task is diagnostic of ability in a particular domain. Thus, as an introduction to the RAT in this study, students were told the following:

“These days, career success is often determined by a person's creativity, insightfulness, and ability to solve problems quickly. However, because traditional measures of academic ability do not directly measure these talents, employers are finding that performance in school is an insufficient predictor of success on the job. As a result, employers have developed other tasks to measure these “think-on-your-feet” abilities, and we will be evaluating one of these in this part of the study.”

Following this, participants saw 10 sets of three words and attempted to come up with the word that links them together conceptually or linguistically. Those in the Failure condition saw 10 sets of difficult words to link, whereas those in the Success condition saw 10 sets of easy words to link. For example, students might have seen this set of words on the screen: “sea”, “home”, “stomach”. The word that links these is “sick”. If students responded with the correct word by typing their answer into a text box on the computer within 20 seconds, “Correct!!!!” appeared on the screen; otherwise, the word “Wrong” appeared, and participants were given the correct answer. At the end, all participants were shown the number of sets they got right – that is, veridical feedback was provided. Participants assigned to the Failure version of the task also got feedback to indicate they scored in the 22nd percentile compared with other students at CU. Because prior use of this task in other research has shown that participants in the Failure version of the task perform reliably worse than those in the Success version, this feedback maps onto how we expected students to do as they completed this task. Those in the Success

version of the task received feedback to indicate they scored in the 87th percentile compared with other CU students.

Post-manipulation Domain Goals

Following the Success/Failure Manipulation, participants were asked to reflect on their goals in the parent and professional domains and write briefly about the importance of these domains to their lives in order to reorient them before completing the follow-up set of implicit self-role association tasks as follows:

Parent Domain Goal prompt:

“When you think about your future, would you like to have children?

If so, how many? At what age would you like to begin having children?

What does having children mean to you and why is it important to you?

Please write briefly about your thoughts on these questions in the space below.”

Career Domain Goal prompt:

“When you think about your future, would you like to have a career?

If so, what type of career? How many hours would you like to work in your job?

What does having a career mean to you and why is it important to you?

Please write briefly about your thoughts on these questions in the space below.”

All participants reflected on these domain goals in the same order: first Parent, then Career. After this reflection, participants completed the post-manipulation set of two blocks of the GNAT to measure implicit self-role associations, which functioned as our main dependent variable of interest. The order of these Time 2 GNAT blocks was the same order in which the participant completed the Time 1 GNAT blocks.

Finally, participants completed demographic questions, along with the Work-Family Conflict Self-Efficacy Scale constructed to measure self-efficacy specifically related to this area of interest (e.g., “I can always manage to solve difficult parenting and career conflicts if I try hard enough”), intended as a potential moderator of the primary effects of interest (see Appendix D).

Results

Data Cleaning

As stated above, I began with 242 participants, but before conducting analyses these were pared to 214 (106 women) after having excluded participants who did not meet certain conditions. I dropped twenty participants in the Success condition who answered fewer than three of the ten easy RAT triads correctly because in order to feel successful they needed to get a substantial portion of the triads correct. If they did not, they could not really be considered functionally part of the “Success” condition (these exclusions were spread evenly across gender and role relation condition). Because I wanted to specifically study how self-role associations change for participants who were in the midst of defining their future Parent and Career identities, and for whom both roles were important, I excluded an additional seven participants who indicated they did not want to be parents, plus one who already was a parent.

Manipulation Checks

As a check on the efficacy of the Role Relation manipulation, I examined condition differences in how participants perceived the relationship between the roles of parent and professional after the role relation manipulation. Recall there were two items to assess this: one each from the Role Separation (“*I feel that the role of parent and the role of professional are similar and compatible*”) and 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*”) scales. The two items were not highly correlated $r(212) = .07$, but they both showed similar and

predicted patterns of effects as a function of Role Relation condition (see Table 1). I tested the predicted effects for each item individually, and then on average across the two.

| <i>Two-item Role Relation Manipulation Check</i> | | | |
|--|---------------------|--------------------|---------------------|
| | <u>Oppositional</u> | <u>Control</u> | <u>Facilitative</u> |
| <u>Men</u> | 4.41 (.94) | 4.41 (1.00) | 3.63 (1.09) |
| Role Separation | 3.60 (1.56) | 3.53 (1.54) | 2.66 (1.16) |
| Role Interference | 5.23 (1.59) | 5.29 (1.18) | 4.60 (1.40) |
| <u>Women</u> | 4.56 (1.08) | 4.33 (.99) | 3.89 (0.88) |
| Role Separation | 3.94 (1.69) | 3.53 (1.52) | 3.14 (1.20) |
| Role Interference | 5.18 (1.34) | 5.14 (1.05) | 4.64 (1.40) |
| <u>All Participants</u> | 4.49 (1.01) | 4.37 (1.04) | 3.76 (.94) |
| 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) |

Table 1. The means (standard deviations) by Condition and Gender for each of the two Role Relation Manipulation Check items, and their average.

For the Role Separation item, the predicted effect emerged such that those in the Oppositional condition viewed the roles as significantly more separate than those in the Facilitative condition, $F(1, 208) = 12.53, p < .001$. In addition, the Control participants viewed the roles as significantly more separate than the Facilitative participants, $F(1, 208) = 6.76, p < .01$, although the Oppositional participants did not differ from the Control participants, $F(1, 208) = 1.00, p = .32$. None of these effects depended on Gender, F 's $< 1, p$'s $> .35$. For the Role Interference item, the predicted difference between Oppositional and Facilitative participants was also significant, $F(1, 208) = 6.67, p = .011$, such that Oppositional participants viewed the roles as interfering with one another more than Facilitative participants. The Control participants again reported more interference between the roles than that Facilitative participants, $F(1, 208) = 7.18, p < .01$.

The Oppositional participants did not differ from Control participants, $F < 1$, $p = .95$. None of these effects depended on Gender, $F_s < 1$, $p's > .67$.

When these two items were averaged together and scored such that higher numbers denoted more perceived opposition between the Professional and Parent domains, a very similar pattern of effects emerged. Oppositional participants scored higher on this composite index than Facilitative participants, as predicted, $F(1, 208) = 18.58$, $p < .0001$. Control participants viewed the roles more oppositionally than Facilitative participants, $F(1, 208) = 13.54$, $p = .0003$. Again, Oppositional participants did not differ significantly from Control participants, $F < 1$, $p = .49$. None of these effects depended on Gender, $F_s < 1.01$, $p > .31$.

As a check on the efficacy of our Success/Failure manipulation, I also analyzed the number of remote association triads answered incorrectly as a function of Role Relation condition, Success/Failure condition, and Gender (see Figure 1).

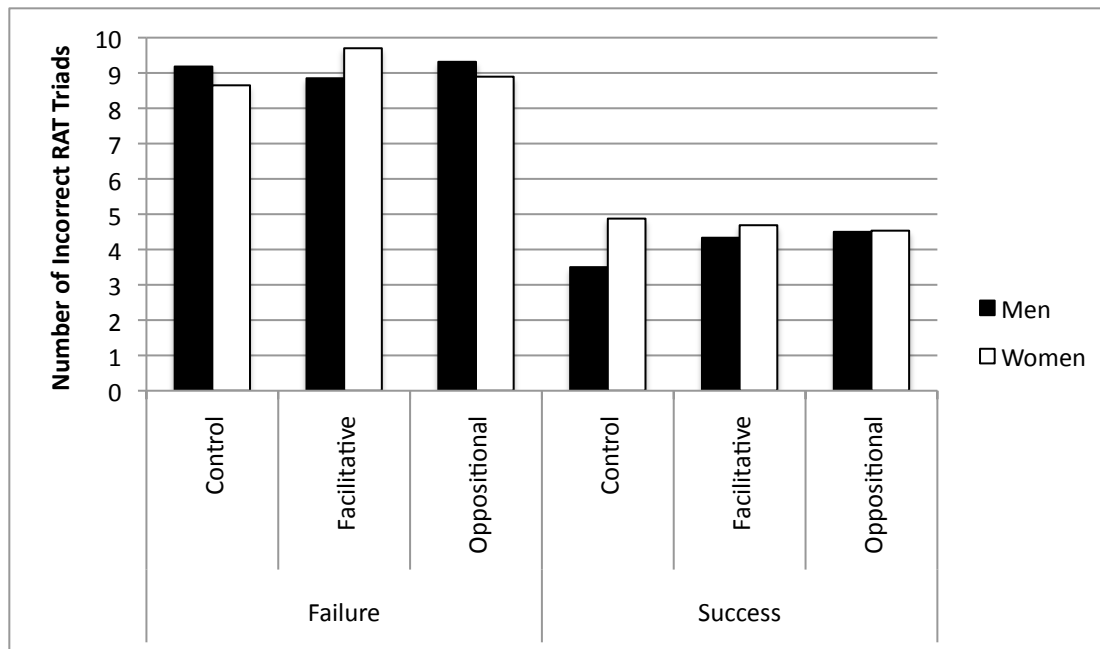


Figure 1. The number of RAT triads answered incorrectly by Gender and Condition.

As expected, participants correctly answered significantly fewer RAT triads in the Failure condition than in the Success condition, $F(1, 202) = 754.05, p < .0001$. In addition to this predicted difference, there were a number of other effects of note in this analysis. There was a marginal Oppositional versus Facilitative X Gender interaction, $F(1, 202) = 3.57, p = .06$, such that women did slightly better on the RAT triads overall in the Facilitative compared to the Oppositional condition, whereas men performed slightly better in the Oppositional compared to the Facilitative condition. On average across Role Relation conditions, there was a marginal Success/Failure X Gender interaction, $F(1, 202) = 3.31, p = .07$, but this effect was qualified by the higher order 3-way interaction of Control versus Others Role Relation contrast X Success/Failure X Gender, $F(1, 202) = 7.18, p < .001$. Looking at the effect of Gender within each of the six cells revealed only two significant gender differences in number of incorrect triads: women did worse than men on the Failure RAT in the Facilitative condition, $F(1, 202) = 4.71, p = .031$, and on the Success RAT in the Control condition, $F(1, 202) = 9.86, p = .002$. All other F 's $< 1.93, p$'s $> .17$.

Overview of Analyses

This first study was designed primarily to answer the question of whether, 1) the perceived relationship between the role of parent and professional (i.e., Facilitative v. Oppositional) would impact subsequent implicit self-role association changes after a success or failure in the professional domain and 2) whether these effects would be moderated by participant gender. Specifically, I expected that participants would strengthen their self-parent associations relative to their self-professional associations following a Failure in the professional domain (versus Success), and that this shift would be particularly strong when participants thought of the roles in an Oppositional manner (versus Facilitative). Moreover, I expected that this pattern would be most evident for women.

To conduct these analyses, I first calculated d' scores for each of the four GNAT blocks (Me+Parent images and Me+Professional images both at Time 1 and Time 2). d' scores are proportion of Hits to the focal categories (correct “GO” response) minus the proportion of False Alarms to the background categories (incorrect “GO” response), after first transforming these proportions to their respective z values from the standard normal distribution. Then, I computed a within-subjects difference score to index the strength of the self-parent associations relative to self-professional associations, both at Time 1 and Time 2 (henceforth called ParVPro1 and ParVPro2, respectively) as follows:

$$(\text{Me+Parent } d') - (\text{Me+Professional } d')$$

Higher scores on this variable indicate stronger associations between the self and the parent identity compared to the professional identity.

Parent versus Professional Self-Role Associations at Time 1

First, in order to get a picture of generally how self-role associations differed between men and women at Time 1, I regressed ParVPro1 scores onto the contrast-coded between-subjects factors relevant to this stage in the experiment: Gender and Role Relation condition. Because the Oppositional versus Facilitative comparison was central to the predictions, I created one contrast code to test this (Oppositional = 1, Control = 0, Facilitative = 1); then I created the orthogonal contrast that tested the Control versus the other two (Oppositional = -1, Control = 2, Facilitative = -1). Order of GNAT blocks was entered as a covariate. Consistent with our past work using implicit measures of self-role associations, there was a significant interaction between Domain and Gender, $F(1, 207) = 24.70, p < .0001$ (see Figure 2), such that men showed higher self-professional associations than self-parent associations, $F(1, 207) = 21.80, p < .0001$, whereas women showed higher self-parent than self-professional associations, $F(1, 207) = 5.66, p = .018$. Importantly, this Domain X Gender difference in self-role associations did not depend on Role Relation condition, $F's < 1.82, p's < .18$.

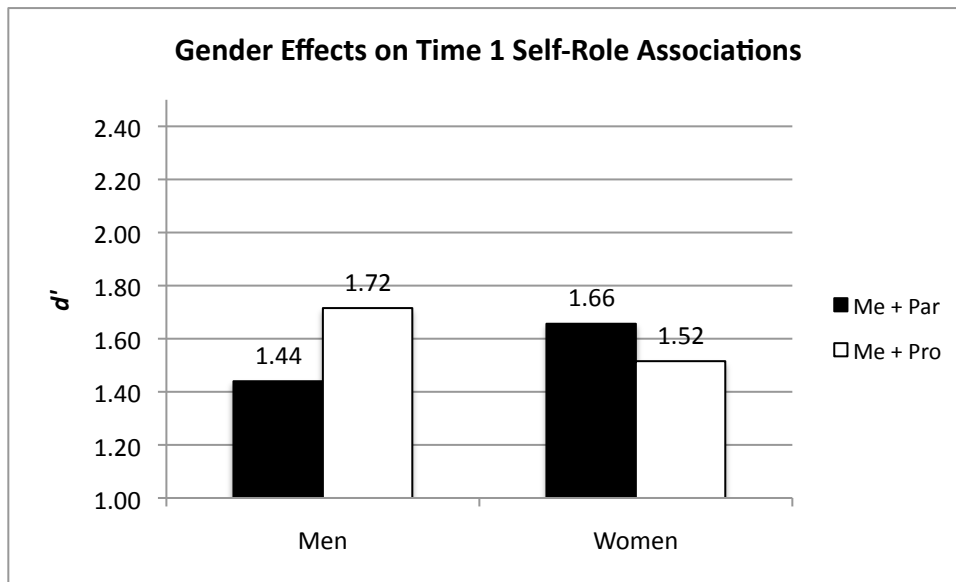


Figure 2. d' scores by Gender and Domain at Time 1.

There was also a significant Domain X Oppositional versus Facilitative interaction, $F(1, 207) = 3.84, p = .051$ (see Figure 3), such that on average across Gender, those in the Oppositional condition showed higher Professional than Parent associations, $F(1, 207) = 5.34, p = .012$, whereas those in the Facilitative condition showed no difference between Professional and Parent associations, $F < 1, ns$.

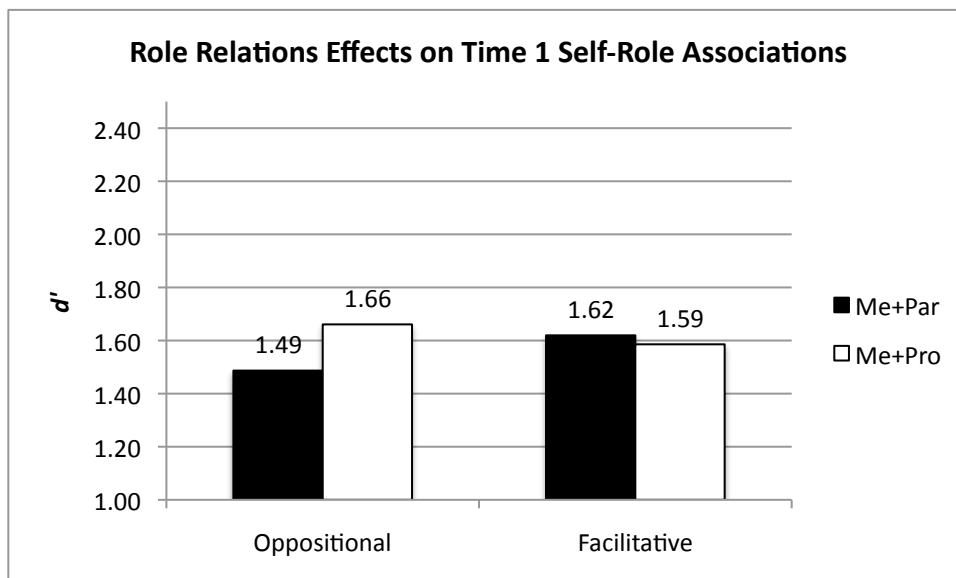


Figure 3. d' scores by Role Relations condition and Domain at Time 1

Parent versus Professional Self-Role Associations at Time 2

The parallel difference in parent versus professional self-role associations at Time 2 (ParVPro2) was also analyzed for gender differences in the full model where Gender, the two Role Relation condition contrasts, Success/Failure condition, and all interactions were predictors, and the order of GNATs was included as a covariate. Similar gender effects appeared in this analysis: there was a significant Domain X Gender interaction such that, as at baseline, men showed higher self-professional associations relative to self-parent associations than did women, $F(1, 201) = 11.70, p < .001$ (see Figure 4). Men showed significantly higher self-professional associations than self-parent associations, $F(1, 201) = 8.76, p = .004$; women showed marginally higher self-parent associations than self-professional associations, $F(1, 201) = 3.53, p = .06$.

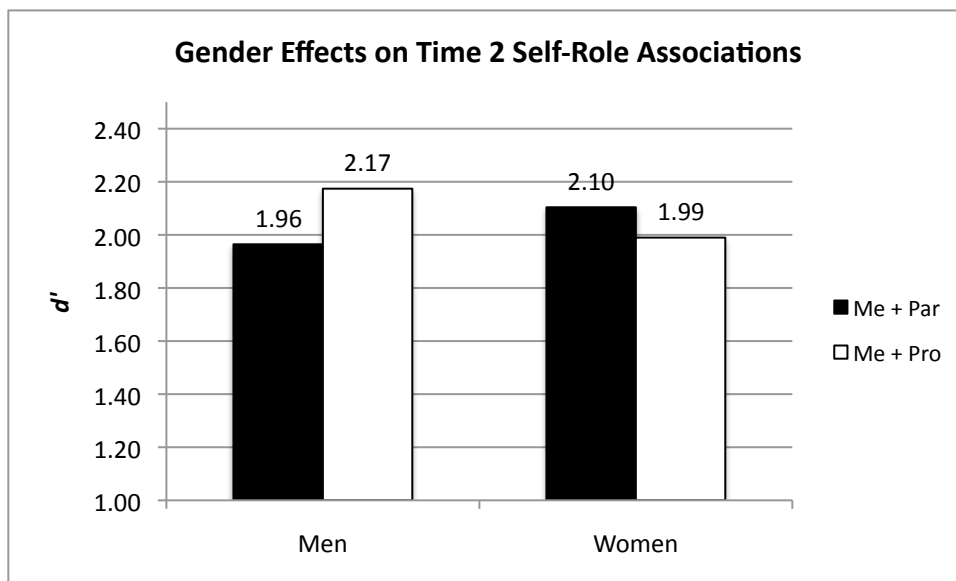


Figure 4. d' scores by Gender and Domain at Time 2.

| Variable | Coding |
|---------------------------------|---|
| <i>Within Subjects Factors</i> | |
| Role Domain | Me+Parent $d' = 1$; Me+ Professional $d' = -1$ |
| <i>Between Subjects Factors</i> | |
| Role Relation Condition | |
| Oppositional vs. Facilitative | Oppositional = 1; Facilitative = -1; Control = 0 |
| Control vs. Other | Control = 2; Oppositional = -1; Facilitative = -1 |
| Success/Failure Condition | Failure = 1; Success = -1 |
| Gender | Female = 1; Male = -1 |
| <i>Covariates</i> | |
| ParVPro1 | Parent = 1; Professional = -1 |
| | Estimates made at ParVPro1 = 0 |
| Average Time 1 GNAT Performance | Centered |
| Order of GNAT blocks | Me+Professional first = 1; Me+Parent first = -1; |

Table 2. Factors and covariates included in the main ANCOVA used to analyze the d' scores.

To test the primary effects of interest, condition differences on this ParVPro2 score were analyzed in a Mixed Model ANCOVA as outlined in Table 2.

The primary hypothesis for this study was that viewing the roles of Parent and Professional more oppositionally would make it especially likely that the parent identity would be used to affirm a threat to one's professional identity, and that this effect would be especially strong for women. As a result, the group I expected to have the greatest shift in self-role associations toward the parent identity was women in the Oppositional Role Relation condition who experienced a Failure on the RAT. Thus, the effect of interest in this model was the 4-way Role Domain X Oppositional versus Facilitative Role Relation X Success/Failure X Gender interaction.

In this analysis, as shown in Table 2 above, I controlled average performance at Time 1 (centered around its mean) to account for individual differences in performance in order to reduce error. I also controlled the relative difference between Parent and Professional self-role associations at Time 1 because it allowed me to model changes in self-role associations at Time 2 relative to Time 1. The intercept and predicted values were estimated at 0 on this variable in order to assess changes as if participants did not differ in the strength of their self-parent and self-professional associations at Time 1. Finally, the order in which the GNATs were performed was controlled, and the intercept and predicted effects were estimated on average across order. A number of interesting effects emerged. First, even after controlling for the relative strength of Parent versus Professional self-role associations at Time 1, there was still a marginal Domain X Gender effect (see Figure 5), indicating that on average, men shifted marginally toward their Professional identity relative to their Parent identity at Time 2, $F(1, 199) = 2.34, p = .13$, compared to women who shifted nonsignificantly toward their Parent identity relative to their Professional identity, over and above differences at Time 1, $F(1, 199) = 1.39, p = .23$.

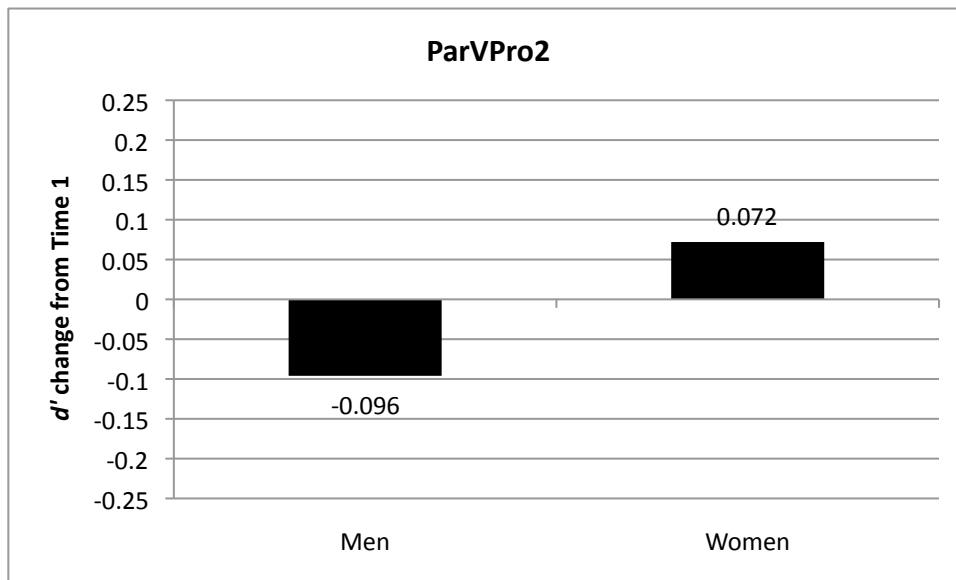


Figure 5. Change in Parent versus Professional d' scores for Men and Women at Time 2 relative to Time 1. Estimated across order, at average levels of performance, and no difference between Parent and Professional self-role associations at Time 1.

In addition, the Domain X Oppositional versus Facilitative Role Relation contrast code interaction was significant such that on average (see Figure 6), those in the Oppositional condition shifted more towards the Parent relative to the Professional Identity than those in the Facilitative condition, $F(1, 199) = 4.62, p < .03$.

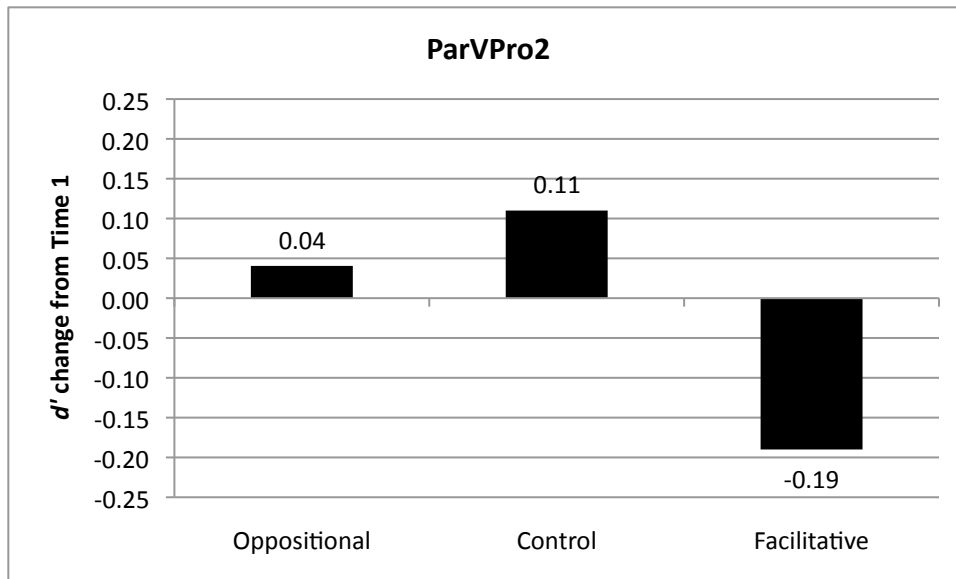


Figure 6. Change in Parent versus Professional d' scores for each of the Role Relations conditions at Time 2 relative to Time 1. Estimated across order, at average levels of performance, and no difference between Parent and Professional self-role associations at Time 1.

In addition, there was an interaction between Domain and the Control versus Others Role Relation contrast (see same Figure 6 above), indicating that on average, Control subjects shifted more towards the Parent relative to the Professional identity at Time 2 compared to those in the other two Role Relation conditions combined, $F(1, 199) = 4.24, p < .04$.

Unfortunately, the predicted 4-way interaction was not significant.

However, I had anticipated that this predicted effect might depend on individual differences in how the roles are viewed and in the motivation and confidence that participants reported for meeting their goals with regard to them. In particular, the Work-Family Conflict Self-Efficacy Scale (continuous 1 – 7 scale, $\alpha = .75, M = 4.97, SD = .845$) measures individual differences in beliefs that one **can** overcome work-family difficulties, and as such may be an index of one's commitment to achieving his or her goals in both domains. I was interested in whether this might moderate the predicted effect. To test this, I estimated the model including Work-Family Self-Efficacy (centered) and its interactions with the other factors in the model, keeping the same set of covariates as in Table 2. The 5-way interaction (Domain X Oppositional

versus Facilitative Role Relation X Success/Failure X Gender X Work-Family Self-Efficacy) was in fact significant in this model, $F(1, 187) = 8.64, p = .004$. In order to understand the effect, I began by first breaking it down by Gender to understand what was happening differently between men and women in their relative self-role association shifts following the manipulations.

Within women, the 4-way Domain X Oppositional versus Facilitative Role Relation X Success/Failure X Work-Family Conflict Self-Efficacy interaction was significant, $F(1, 187) = 8.64, p = .004$ (see Figure 7). This in turn was decomposed by Success/Failure condition.

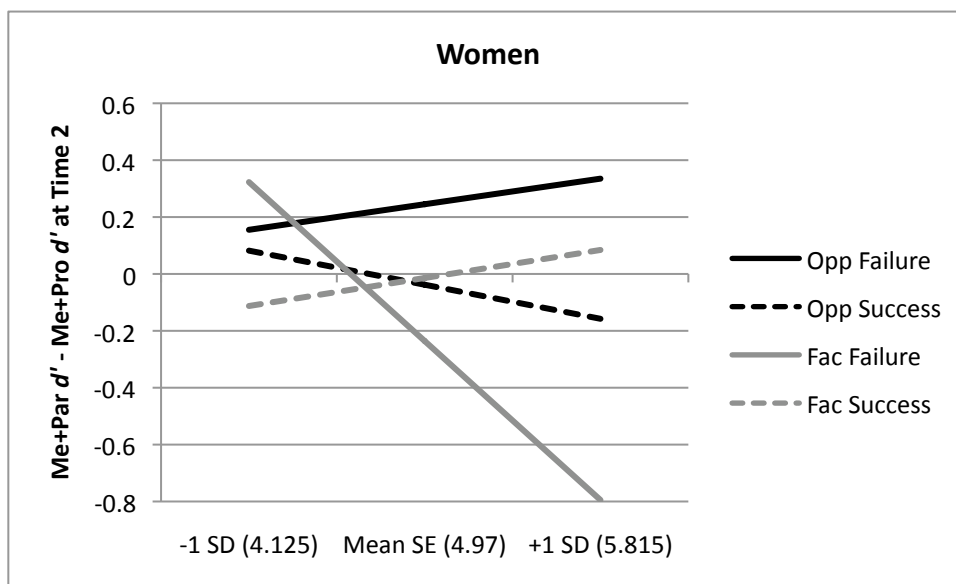


Figure 7. Women's change in Parent versus Professional d' scores at Time 2 relative to Time 1, by condition. Estimated for those with no difference between Parent and Professional self-role associations at Time 1, across order, and at average levels of performance.

Figure 7 plots the difference in parent minus professional self-associations at Time 2 controlling for Time 1. Thus scores of 0 would indicate no change from Time 1 associations, negative scores indicate greater activation of professional self-associations, and positive scores indicate greater activation of parent self-associations. Self-efficacy with respect to balancing both work and family is plotted along the x-axis with higher values indicating greater self-efficacy. Turning first to the Failure condition (represented by the solid lines), the predicted

Domain X Oppositional versus Facilitative Role Relation interaction was significant, $F(1, 187) = 5.90, p = .02$. On average, women in the Oppositional condition shifted their self-role associations more towards Parent than Professional, whereas those in the Facilitative condition shifted more towards Professional than Parent. This effect in turn depended on individual differences in Work-Family Conflict Self-Efficacy such that the difference that viewing the roles Oppositionally versus Facilitatively made on shifts between self-role associations was stronger for women who reported feeling more self-efficacious in their abilities to handle work-family conflict, $F(1,187) = 8.64, p = .004$. Thus as predicted, for women who experienced a professionally-diagnostic failure, thinking about the roles Oppositionally led them to shift their self-role associations more toward the Parent Domain than the Professional domain, whereas thinking about the roles Facilitatively led them to redouble their identification with the Professional domain relative to the Parent domain. This effect was stronger the more self-efficacious women felt about dealing with conflicts between the two roles.

On the other hand, within the Success condition for women, the Domain X Oppositional versus Facilitative Role Relation interaction was not significant, $F < 1, ns$, nor did it depend on Work-Family Conflict Self-Efficacy, $F(1,187) = 1.23, ns$ (i.e., the two dashed lines in Figure 7 do not differ statistically from one another on average or in their slopes). 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 self-role associations, nor did their perceptions of self-efficacy with regard to work-family conflict moderate any such changes.

For men, the parallel 4-way Domain X Oppositional versus Facilitative Role Relation X Success/Failure X Work-Family Conflict Self-Efficacy interaction was not significant, $F(1, 187) = 1.48, ns$. The only significant effect was the 3-way Domain X Success/Failure X Work-Family Conflict Self-Efficacy interaction, $F(1,187) = 4.37, p = .04$, depicted in Figure 8. Men in the Failure condition shifted their self-role associations more toward the Professional domain

relative to the Parent domain at Time 2 compared to those in the Success condition, and this effect was stronger for those who reported feeling more Work-Family Conflict Self-Efficacy. Consistent with the prediction that men would redouble their identification with the Professional domain following a failure regardless of how they perceived the relation between the two roles, Role Relation condition did not moderate this effect, nor did it have any effects on average.

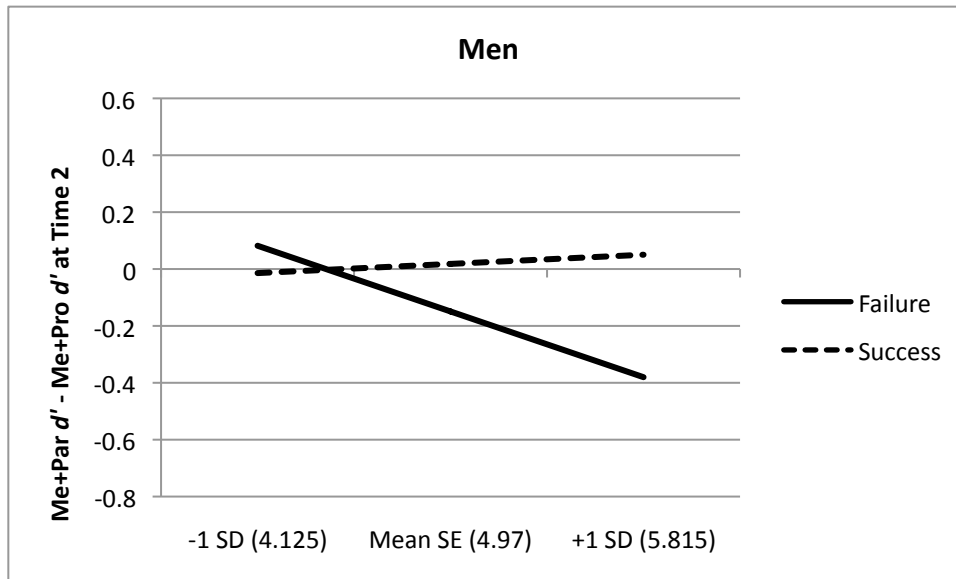


Figure 8. Men's change in Parent versus Professional d' scores at Time 2 relative to Time 1, by condition. Estimated for those with no difference between Parent and Professional self-role associations at Time 1, across order, and at average levels of performance.

The other effect of interest in the full model with Work-Family Conflict Self-Efficacy as a moderator was a significant Domain X Control versus Others Role Relation X Gender X Work-Family Conflict Self-Efficacy interaction, $F(1,187) = 10.82$, $p = .0012$ (see Figure 9).

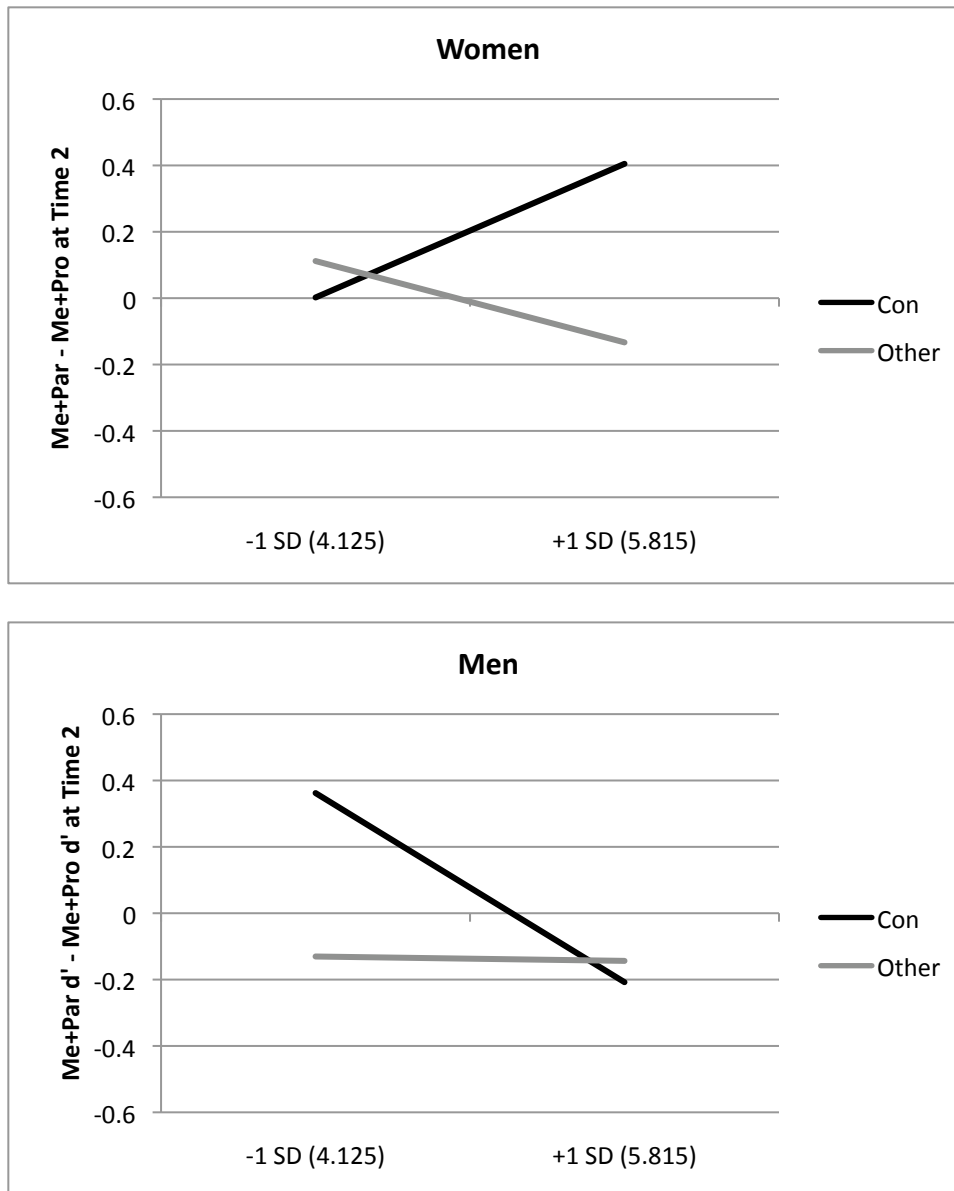


Figure 9. Comparison of the Control condition versus the average of the Oppositional and Facilitative Role Relation conditions, separately for women and men. Estimated for those with no difference between Parent and Professional self-role associations at Time 1, across order, and at average levels of performance.

Breaking this interaction down by gender revealed that for women there was a significant Domain X Control versus Others Role Relation X Work-Family Conflict Self-Efficacy interaction, $F(1,187) = 7.40, p = .007$, such that on average across Success/Failure condition, women in the Control Role Relation condition shifted more strongly toward the Parent domain relative to the

Professional domain compared with those in the Oppositional and Facilitative conditions combined, and this effect was stronger for women who reported feeling more self-efficacious in their ability to handle Work-Family Conflict. In contrast, on average across Success/Failure condition, men in the Control Role Relation condition shifted more strongly towards the Professional domain relative to the Parent domain compared to those in the other two Role Relation conditions, and this effect was again stronger for men who report being more confident in their ability to handle Work-Family Conflicts, $F(1,187) = 3.88, p = .05$. 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 men who believed they could handle work and family conflicts shifted towards even greater professional self-associations whereas women who believed the same shifted towards even greater parent self-associations.

Condition Effects on Work-Family Conflict Self-Efficacy

Given that Work-Family Conflict Self-Efficacy was a moderator of the primary effects of interest on the implicit self-role associations, it was important to test for condition effects on this variable. Analyzing this variable using the full design ANOVA with Role Relation condition, Success/Failure condition, and Gender as factors revealed a significant 3-way Oppositional versus Facilitative Role Relation X Success/Failure X Gender interaction, $F(1,202) = 4.93, p = .03$. This interaction was also broken first by Gender (see Figure 10).



Figure 10. Work-Family Conflict Self-Efficacy as a function of Role Relation condition and Gender.

For women, there were no significant effects, meaning that the Oppositional versus Facilitative Role Relation effect on implicit self-role associations described in the previous section could not be explained by condition differences in reported Work-Family Conflict Self-Efficacy. For men, there was not a Success/Failure effect on Work-Family Conflict Self-Efficacy on average, again meaning that the Failure versus Success effects on implicit self-role associations could not be explained by condition differences in Work-Family Conflict Self-Efficacy. However, for men there was a significant Oppositional versus Facilitative Role Relation X Success/Failure condition interaction, $F(1,202) = 6.00, p = .015$, such that 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 noted, however, these effects cannot account for the differences in self-associations as a function of condition described above.

Discussion

In Study 1, I was interested in shifts in self-role associations after a failure as a result of framing the parent and professional roles as oppositional versus facilitative in nature. I predicted that women would shift their self-role associations toward the parent identity following a failure, especially if the roles had been framed oppositionally versus facilitatively; I predicted that men would shift their self-role associations toward the professional domain after a failure, and that this shift would not depend on how the relationship between the roles was framed.

The results largely supported these hypotheses. Women did indeed shift their self-role associations toward the parent domain when they experienced a failure and viewed the roles oppositionally; men redoubled their efforts in the professional role after a failure, without showing any effects of the Role Relation manipulation. However, the primary effects of interest depended on Work-Family Conflict Self-Efficacy such that the people who most reliably showed the predicted effects were those who felt most self-efficacious about their ability to handle work-family conflicts. For a given person, scores on this variable are likely to be driven largely by two things: self-efficacy generally, and the subjective importance of meeting one's goals in the parent and professional domains. As a result, the people who scored highly on Work-Family Conflict Self-Efficacy are likely high-achieving and motivated to make this balance work – meaning that it may be the people who are most driven to succeed on the work and family front that bear the brunt of the effects of experiencing the two roles as oppositional or not. Specifically, women and men at high levels of Work-Family Conflict Self-Efficacy diverged the most after a failure: whereas men shifted toward the professional domain regardless of the framing of the relationship between the two roles, the framing of the role relationship made a large difference for women such that they shifted strongly towards the professional domain after thinking of the roles facilitatively, and towards the parent domain after thinking of them oppositionally.

It is particularly interesting that the people who are potentially the most invested in successfully figuring out the work-family balance were those most likely to show the predicted effects. Given that these shifts in self-role associations were designed to index the change in the strength with which a person sees overlap between themselves and the roles, it means that the most invested women are the ones for whom repeated failures in the professional domain may result in self-concept hierarchy changes that begin to prioritize the parent role over the professional role *if they define the roles oppositionally*.

Although these effects, which are consistent with Oppositional Identity Theory, were indeed apparent in the undergraduate population we sampled for Study 1, it is useful to consider a “real life” sample of individuals who are *currently, pragmatically* (as opposed to in the abstract) able to reflect on how the roles of parent and professional fit together behaviorally. In Study 2, I recruited an organizational sample for this purpose. Additionally, I wanted to move from the question of how one’s perspective on the relationship between the parent and professional roles might affect which role is turned to by default for affirmation (addressed in Study 1), and onto the effects of “oppositional affirmation” specifically by looking at the effects of affirming in one role or the other via experimental manipulation.

III. STUDY 2

Study 1 sought primarily to document gender differences in the effects of viewing the parent and professional roles oppositionally on implicit changes in self-role associations. The changes in these implicit self-role associations were taken as evidence of how viewing a set of roles as oppositional (whether through cultural influence or instruction) influences people’s choices of how to affirm one’s self following a threat. Study 2 focused more on the consequences of using one role of an oppositional set to affirm a threat in another. Specifically, it assessed whether there are differences between men and women in their implicit role association shifts for the two roles, and explicit levels of work engagement and job involvement

as a function of a threat suffered in the professional domain. Moreover, Study 2 utilized an organizational sample, allowing for greater external validity in the investigation of how these processes play out for people who are currently dealing with the challenges of simultaneously managing career and family.

The general outline of Study 2 was as follows. First, participants completed baseline measures of implicit self-role associations. Next, they completed a Success/Failure Imagery manipulation, in which participants were asked to imagine in vivid detail either that they succeeded (Success condition) or failed (Failure condition) on an important work task. Participants then completed an affirmation manipulation in which they were asked to focus on either their parent or professional identities and to think of how important it was in their lives. Next, we measured how each employee's implicit self-role associations changed from baseline as a result of imagined failure or success, and subsequent affirmation in either the parent or professional role. Finally, we gathered measures of follow-up Self-Efficacy, explicit work engagement and job involvement at BPA, as well as life satisfaction measures for each role and for satisfaction with the "significant other" aspect of participants' lives (whether or not they had a "significant other").

Participants

Participants for this study were 230 employees of *Bonneville Power Administration (BPA)*, recruited through the internal company website. Employees received 1 hour of credit toward the agency-mandated 4 hours of annual diversity training for participation in this study (30 minutes in duration), along with a 25-minute training module that summarized implicit associations and how they are used to assess issues of sociological importance as a way to contextualize the tasks they completed just prior (Appendix J). All employees were allowed to participate, but demographic information was gathered at enrollment to screen participants for gender, marital status, parenthood status, and if they were not parents, they were asked

whether they see themselves becoming parents in the future. All participants either were parents already or expressed a desire to become parents at some future point.

Materials and Procedure

Baseline Implicit Self-Role Associations

Participants arrived at the study home page and signed in using their unique PIN number to access the website. First, participants underwent training on the GNAT and completed two baseline blocks to measure implicit self-role associations for the parent and professional roles, as described in Study 1. The stimuli for the GNAT blocks in this study were altered from Study 1 as described below (see Appendix E).

Specifically, although the parent images were identical to those used in Study 1, the images related to executive roles (e.g., briefcase, desk) were swapped for iconic pictures of BPA (e.g., agency logo, recognizable structures) in order to assess associations between the self and the agency in particular. Secondly, since there was concern that the infant-oriented Parent category images may not resonate equally well with all participants in this sample (particularly older employees or men who had childcare responsibilities generally but not specifically related to infant care), I opted to create additional subcategories within each Self-Parent and Self-Work block to represent the general concepts of each. To do this, text stimuli were added along with the images to represent the general concepts of parent (e.g., “parent”, “children”) and professional (e.g., “professional”, “career”). Thus each block consisted of 60 target stimuli (e.g., the Me-Work block included 20 “Me” words, 20 images of BPA, and 20 “Work” words), and 80 lures (e.g, 20 “Them” words, 20 images of infant-care items, 20 “Parent” words, 10 bird images, and 10 bird names). The d' statistic used to analyze the data could thus be calculated overall for all target stimuli within a block (i.e., sensitivity to stimuli from the “Me” category, Work images, and “Work” words), and for each subcategory (i.e., just to “Me” and “Work” images, or just “Me” and “Work” words). In this way, we could measure how sensitivity

varied as a function of domain (Parent versus Professional), stimulus type (Word versus Image), and Gender. For this study, all participants completed the self-professional block followed by the self-parent block, as a measure of baseline self-role associations.

Success/Failure Imagery Manipulation

Next, participants were asked to vividly imagine a hypothetical (but nonetheless plausible) work task at which they either succeeded (Success condition) or failed (Failure condition). Employees were asked to imagine that they had spent quite a bit of time over the past two weeks to accomplish this task and 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 gave some 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. After describing the task, employees were prompted to imagine their feelings as a result of the Success/Failure and to write them down in detail (full instructions in Appendix F).

Post-Success/Failure Imagery Manipulation Check

To assess the effectiveness of the Success/Failure Imagery manipulation, participants answered the first set of 6 questions in the 12-item Self-Efficacy Scale in Appendix F. In contrast to Study 1 where we assessed participants' Work-Family Conflict Self-Efficacy, in Study 2 we asked about participants' general feelings of Self-Efficacy (e.g., "Thanks to my resourcefulness, I know how to handle unforeseen situations."). We expected the imagery manipulation to leave Failure participants feeling less self-efficacious, on average, than the Success participants.

Affirmation Domain Manipulation

Next, participants completed the Affirmation Domain manipulation in which participants either focused on the parent role (Parent Affirmation condition) or the career role (Career Affirmation condition) and wrote about its importance to him or herself (see Appendix H for the full instructions). Participants were first directed to write a sentence or two about how and why the assigned domain is or will be important to them, focusing on their own thoughts and feelings about it. Then they listed the top two reasons why the role is important, finally they 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.”). Participants were randomly assigned to Affirmation Domain condition.

Post-Affirmation Implicit Self-Role Associations

Following the Affirmation Domain manipulation, participants completed another set of two blocks of the GNAT to assess changes in implicit self-role associations from baseline. Again, all participants completed the self-work block first, followed by the self-parent block. As in Study 1, d' scores were calculated for each block and differences in d' scores for each role were calculated as a measure of shifts in implicit self-role associations.

Post-Affirmation Manipulation Check

Next, participants answered the second set of 6 questions of the 12-question Self-Efficacy scale (see Appendix G), which was intended as a post-manipulation measure of how effective the Parent or Career affirmation manipulation was in repairing the feelings from imagined Failure versus Success.

Explicit Measures of Affirmation Consequences

Finally, participants were asked questions regarding their work engagement at BPA using three items from the short form of the Work Engagement Scale (Schaufeli, Bakker,

Salanova, 2006; see Appendix I) such as “I am enthusiastic about my job”. I also included four items assessing Job Involvement (Reeve & Smith, 2001; see Appendix I) such as “The major satisfaction in my life comes from my job”. Additionally, participants responded to three scales of four items each assessing life satisfaction with regard to career, parenting, and significant other relationships (based on Uebelacker & Whisman 2006; see Appendix I). Along with producing changes in implicit self-role associations, I expected the manipulations to interact with gender to produce condition differences on these scales such that women in the Parent Affirmation condition would show lower levels of Work Engagement, Job Involvement, and Career Life Satisfaction compared with those in the Career Affirmation condition, especially after having imagined a professional Failure, whereas men would show no difference in Work Engagement, Job Involvement, or Career Life Satisfaction across conditions. I also predicted that affirming in the Parent domain compared to the Career domain would increase Life Satisfaction related to parenting, and potentially one’s significant other relationship, especially when participants imagined a professional failure, and perhaps most of all for women.

Moderating Variables

Finally, participants provided some relevant demographic information that I anticipated would be useful in interpreting the effects. These were: age, ethnicity, number of children, ages of children, tenure at BPA, total number of years in the workforce, General Scale job level (both current and target; as a proxy measure of rank), perception of spousal support (if applicable), estimated percentage of chores performed (childcare, food preparation, cleaning, finances), and whether the participant took time out from work (and for what reason).

Results

Data Cleaning

Although 230 participants took part in the study, many of them completed the study in the middle of their workday, which allowed for a number of distractions to interrupt the study session. Thus, I took a number of steps before conducting analyses to ensure that the final set of data included only participants who actually completed the study from beginning to end in one session, following all critical instructions in a reasonable amount of time.

First, twenty participants who did not complete a critical measure (e.g., one of the 4 critical GNAT blocks, or the Success/Failure Imagery manipulation exercise, demographics) were excluded. Second, five participants who took longer than one hour from the baseline Me+Professional GNAT block to the second set of Self-Efficacy items were excluded (average time was approximately 30 minutes), plus eight participants from the first day of data collection who experienced a glitch. Next, I coded whether or not participants followed instructions on both the Success/Failure Imagery Manipulation and the Affirmation Domain Manipulation, excluding those who counter-argued their assigned position, or protested having to complete the task; fifteen participants were excluded for their answers on the Success/Failure Imagery task, and an additional eight were excluded for their answers on the Affirmation task.

To assure that remaining participants actually engaged in the GNATs, I calculated criterion values (c) for each of the 4 critical GNAT blocks. In Signal Detection Theory, c (or the bias parameter; sometimes referred to as β , or X_c) assesses the threshold a given stimulus must surpass for a participant to “GO”, or perceive the signal as having occurred. High c values indicate that a participant is being more conservative in his or her “GO” responses (resulting in low numbers of both hits and false alarms); low c values indicate that a participant is being more lenient in his or her “GO” responses (resulting in high numbers of both hits and false alarms). This statistic is a useful index of engagement in the GNAT tasks because it can reveal that the

participant either passively watched as the GNAT stimuli were presented (very high c values and almost no “GO” responses), or made a “GO” response indiscriminately to both lures and targets (very low c values, continuously made the “GO” response). To test for outliers based on extreme values of c , each of the four c ’s was regressed onto the condition variables (Success/Failure Imagery Condition, Affirmation Condition), Gender, and their interactions, from which I calculated a Studentized Deleted Residual for each participant. I excluded a total of 24 participants for whom the absolute value of their Studentized Deleted Residual was greater than 2. At very low c values, this meant excluding participants who had hits of 4-5 out of 60 (where the median was 40 hits), and had false alarms of 0-1 out of 80 (where the median was 7 false alarms). At very high c values, this meant excluding participants who had hits of 50-60, and false alarms of 65-70. 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, because number of children was an important variable to consider in our analyses, we examined the distribution of total number of children for each participant and excluded one participant with 12 children, one with 10, and one with 7 to reduce skew. Following these steps, we ended up excluding a total of 85 participants for a final dataset of 145. The final sample was 52% female, and additional demographic data collected at the end of the study showed that participants had been with BPA for 12.7 years on average, were at an average GS level of 12.35, and were between 22 and 69 years old, with a mean age of 47.6 (see Table 3).

Demographics

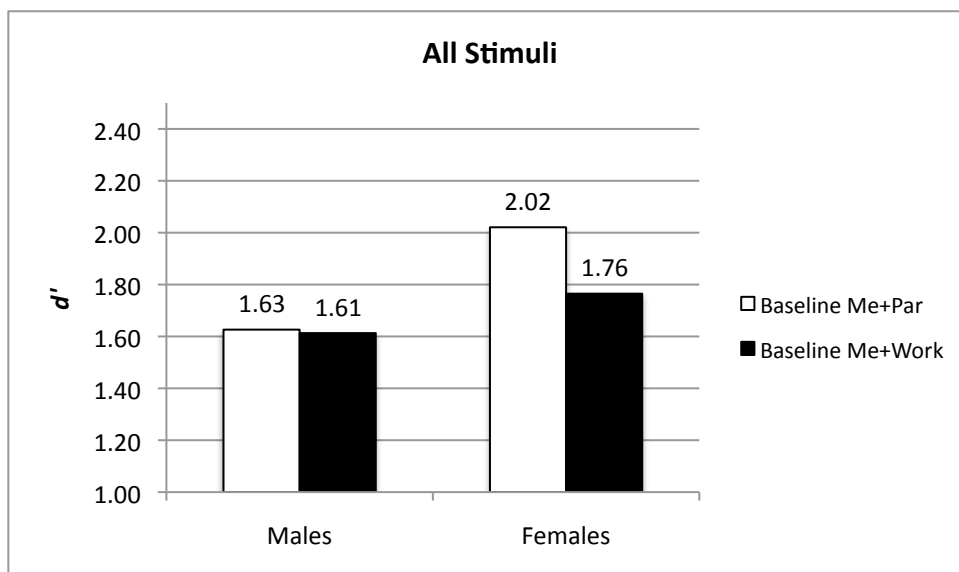
| | |
|--------------------------------|-----------------------------|
| <i>Gender</i> | |
| Men | $n = 70$ (48%) |
| Women | $n = 75$ (52%) |
| <i>Mean Tenure at BPA</i> | 12.7 years |
| <i>Mean GS Level</i> | 12.35 |
| <i>Mean Age</i> | 47.6 years (Range: 22 – 69) |
| <i>Mean Number of Children</i> | 1.88 |

Table 3. Demographic breakdown of the final set of participants from BPA in Study 2.

Baseline Self-Role Associations

Before testing the hypotheses regarding the predicted effects of Success/Failure Imagery and Affirmation Domain, I first examined the baseline differences between the two GNAT blocks as a function of Gender, Stimulus Type (image versus word), and Role Domain (Parent versus Work). To do so, I calculated two d' scores for each block: Me+Parent (Work) Images and Me+Parent (Work) Words (see Figure 11 for Mean d' values). Each of these was calculated by just considering the number of hits and false alarms to the focal and lure items of only one type (i.e., focal: “Me”, “Work Images”; lure: “Them”, “Parent Images”, “Bird Words”, “Bird Images”), as if the other type was not present (i.e., Work Words, Parent Words). These four scores were submitted to a 2 (Stimulus Type: Image versus Word) X 2 (Domain: Parent versus Work) X 2 (Gender) mixed model ANOVA, with Gender varying between subjects. These analyses indicated that women performed generally better than men on the GNATs overall, $F(1, 143) = 6.54$, $p = .012$. There was also a main effect of Domain, indicating that participants showed higher discriminability to stimuli belonging to the Parent domain than the Work domain,

$F(1, 143) = 25.0, p < .0001$, and an interaction with Gender to indicate that this was especially the case for the women, which is in line with the results of Study 1 and our previous work on self-role associations. Additionally, there was a significant main effect of Stimulus Type, indicating that participants exhibited greater discriminability on average to the image stimuli as opposed to the words, $F(1, 143) = 209.7, p < .0001$. Although women and men were not differentially sensitive to images versus words, this effect was moderated by Domain such that in the Work domain d' scores were particularly lower to words than images, $F(1, 143) = 19.89, p < .0001$. Looking at Figure 11, the d' scores in the parent domain using the word stimuli were on average about .2 units lower than those using the image stimuli, and this was equally true for men and women. In the work domain this difference was about .4 units. Clearly the words chosen to represent the Work category were less easily associated with self than the other three types of stimuli. Importantly, however, this effect did not depend on gender, $F < 1$, indicating that these differences were of equivalent magnitudes for men and women. Importantly, men did not appear to more easily associate the parent word versus image stimuli to self relative to women. The parent word-image differences were essentially identical for men and women.



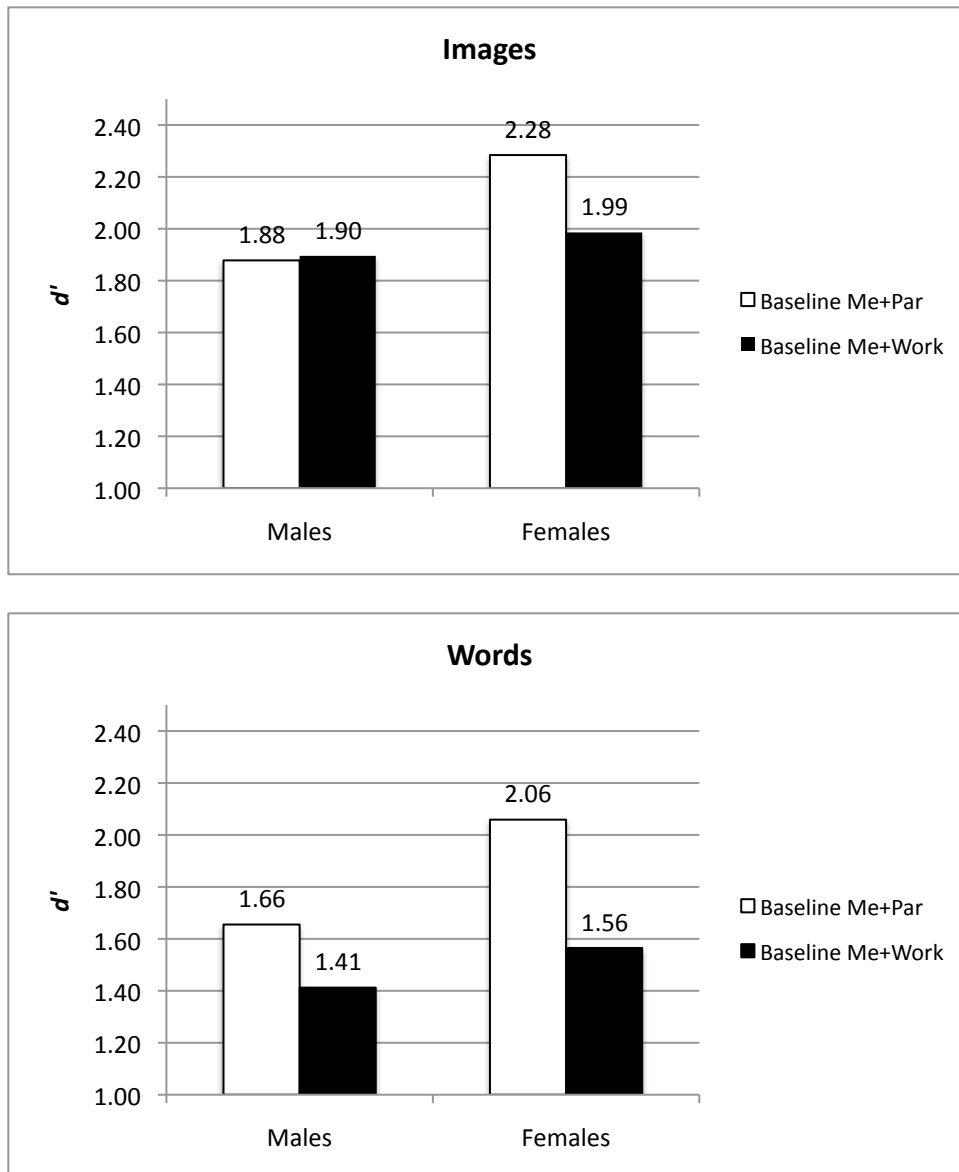


Figure 11. Baseline d' scores by Domain and Gender, separated by Stimulus Type (Overall, Images, Words).

Given that the Image trials resulted in substantially higher d' values (indicating better performance on these), and that the Work Word trials seemed particularly (and differentially) difficult, I decided to focus only on the d' values calculated from the Image trials, as this had been my original plan, and as this is what is used in Study 1 and in our previous research using GNATs. It should be noted that choosing to analyze only the Me+Parent/Professional Image trials did not alter the results substantially. The primary effects of interest tested using the d'

values calculated using both image and word stimuli are generally still significant or marginal. Using only the word trials resulted in the primary effects going in the same direction but they were generally nonsignificant. The primary effects on the overall d' and the word d' values are noted, where applicable. Using these trials, a within-subjects difference between the d' for the Me+Parent block and the Me+Work block was calculated to index the relative strength of self-associations, both at baseline (ParVPro Baseline) and after the manipulations (ParVPro Time 2).

Looking just at these d' s calculated using the image trials, at baseline, participants exhibited significantly stronger self-associations to the Parent role compared to the Work role, $F(1, 143) = 5.10, p = .02$ (see Figure 11). This effect depended on gender, $F(1, 143) = 6.50, p = .012$, such that it was only women who showed higher self-associations to the Parent than the Work blocks, $F(1, 143) = 11.97, p = .0007$. Men showed no difference in self-associations between the two domains, $F < 1$. This baseline within-subject Parent versus Work d' difference (ParVPro Baseline) was then used as a covariate in the analyses testing the critical hypotheses on the parallel Parent versus Work difference from the post-manipulation blocks (ParVPro Time 2). This allowed me to test for shifts from these initial self-associations as a result of the manipulations and to control for individual differences in performance.

Self-Role Association Shifts After Success/Failure Imagery and Affirmation

Oppositional Identity Theory suggests that due to differences in the cultural experience of the professional and parenting roles for women and men, there should be a divergence between the two genders in the effects that affirming a threat via either the parent or professional domain has on implicit self-role associations. After a Failure, women should show higher ParVPro Time 2 scores compared to Baseline, especially if they have affirmed in the Parent role (compared to the Career role). On the other hand, after a Failure, men should exhibit decreased ParVPro Time 2 scores compared to baseline, and this should not depend on

Affirmation Domain. I expected that because there was no threat to affirm, the Success condition participants (across Gender) would not show substantial change on ParVPro scores between Baseline and Time 2, and that whatever change did occur would not be moderated by Affirmation Domain. Before testing this hypothesis, it was necessary to analyze the first set of six Self-Efficacy items ($\alpha = .76$) as a check that the Success/Failure Imagery task functioned as a manipulation of threat. Indeed, those in the Failure condition scored lower on Self-Efficacy ($M_{failure} = 3.65$) than those in the Success condition ($M_{success} = 3.85$), $F(1, 141) = 3.69$, $p = .056$, and this effect did not depend on gender, $F < 1$. On average, however, women ($M_{women} = 3.64$) scored lower than men ($M_{men} = 3.87$), $F(1, 141) = 5.12$, $p = .03$.

With the assurance that the Success/Failure Imagery manipulation had affected the way participants thought of themselves on the whole as a result of a threat to their professional identity (at least at the $p = .056$ level), I examined the condition effects on Parent versus Work d' values after the Affirmation task. Again, similarly to Study 1, I used the within-subjects difference score between the Me+Parent and the Me+Work blocks at Time 2 (ParVPro Time 2; see above) as a measure of the strength of the d' for self-parent associations relative to self-work associations. This variable was regressed on the between-subjects variables and covariates to test the hypotheses. Thus, the main analysis was a 2 (Role Domain: Parent versus Work self-role associations at Time 2) X 2 (Success/Failure Imagery Condition) X 2 (Affirmation Domain: Parent versus Career) X Gender mixed model ANCOVA, using ParVPro Baseline and average performance at baseline as covariates. The critical effect of interest in this model would be the 4-way Role Domain X Success/Failure Imagery X Affirmation Domain X Gender interaction such that affirming the Parent role (compared to the Career role) increased ParVPro Time 2 scores, especially for women, and most of all for women in the Failure condition. This 4-way interaction

was not significant⁴, although there was a Role Domain X Gender interaction to indicate that men shifted towards Work self-associations at Time 2 more so than women overall (who on average did not change), $F(1, 135) = 6.53, p = .01$ ⁵. There was also a marginal Role Domain X Affirmation Domain interaction in the expected direction, $F(1, 135) = 2.99, p = .09$ ⁶, such that those who affirmed with the Career role shifted more towards Work self-associations than those who affirmed in the Parent role (who on average did not change).

However, unlike the relatively homogenous sample of undergraduates, the BPA population is one for whom life circumstances are likely to moderate the degree to which the manipulations affect self-role associations. In particular, whether participants have children and how many they have is likely the most proximal index of the stage of parenting life for a given individual. Looking at Figure 12, there is substantial variability in the number of children across the range from 0 – 6.

⁴ This 4-way interaction was also not significant for the d' scores for just words $F < 1, p = .76$, or for the overall d' scores, $F < 1, p = .89$.

⁵ The Role Domain X Gender interaction was not significant in the d' scores for words, $F < 1, p = .85$, but it approached significance in the same direction for overall d' scores, $F(1, 135) = 1.98, p = .16$.

⁶ The Role Domain X Affirmation interaction was marginal in the expected direction for the word d' scores, $F(1, 135) = 2.50, p = .12$, and it was significant for overall d' scores, $F(1, 135) = 5.66, p = .02$.

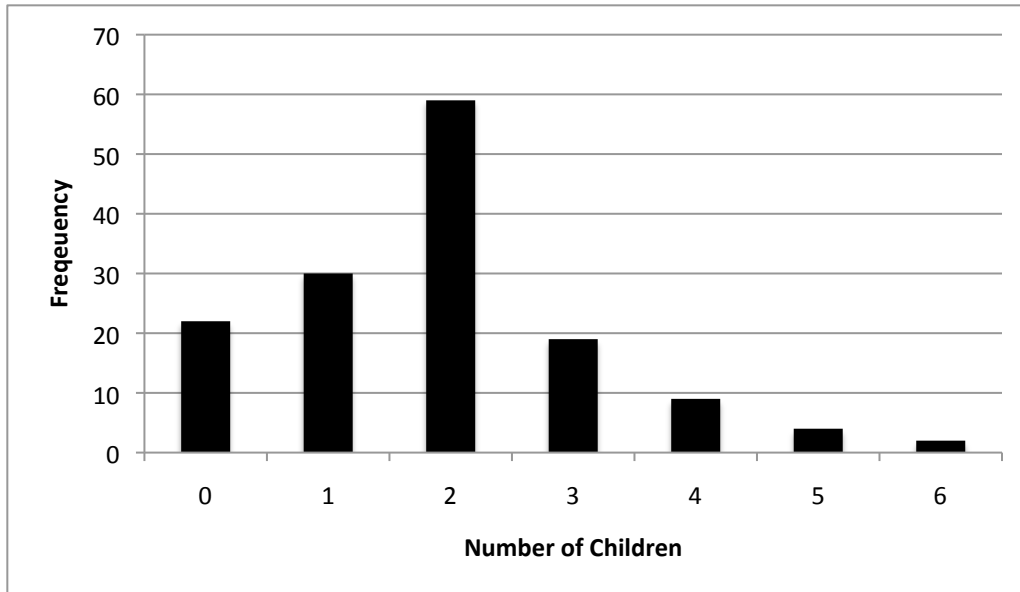


Figure 12. Histogram depicting of number of children for each of the participants in the BPA sample.

Given that everyone in this sample wants children (whether or not they already have them), including number of children as a moderator provides a way to examine the difference between those who already have children and those who do not. Importantly, this allows us to look for differences in self-role association shifts as a function of whether people are currently in the midst of attempting this balance (and to what degree, i.e., one child versus two or more) versus only considering it in the abstract. Thus, number of children [$M = 1.88$, $SD = 1.28$; no differences by gender, $t(143) = -1.19$, ns] was examined as a moderator of the predicted 4-way interaction. To test this, I centered number of children and included it with all its interactions in the 4-way ANOVA described above (Role Domain X Success/Failure Imagery X Affirmation Domain X Gender), while again controlling for ParVPro Baseline and average baseline performance across all GNATs. I also included age in this model as a covariate to ensure that it

was not spuriously driving any effects. The results of this augmented model revealed significant moderation of the critical 4-way interaction by number of children, $F(1, 126) = 7.51, p = .007^7$.

To understand this interaction I broke it down, focusing first just within the Success/Failure conditions, and examined within each whether the domain in which a person affirmed (Parent versus Career) had different effects on self-role associations 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 on average, and controlling for Time 1 differences in self-associations, men shifted towards Work self-associations at Time 2, $F(1, 126) = 14.29, p < .001$, more so than women overall (who on average did not change, $F < 1, p = .89$; see Figure 13). The 4-way Role Domain X Affirmation Domain X Gender X Number of children interaction was not significant within Success, $F(1, 126) = 2.66, p = .11$, so it was not decomposed further.

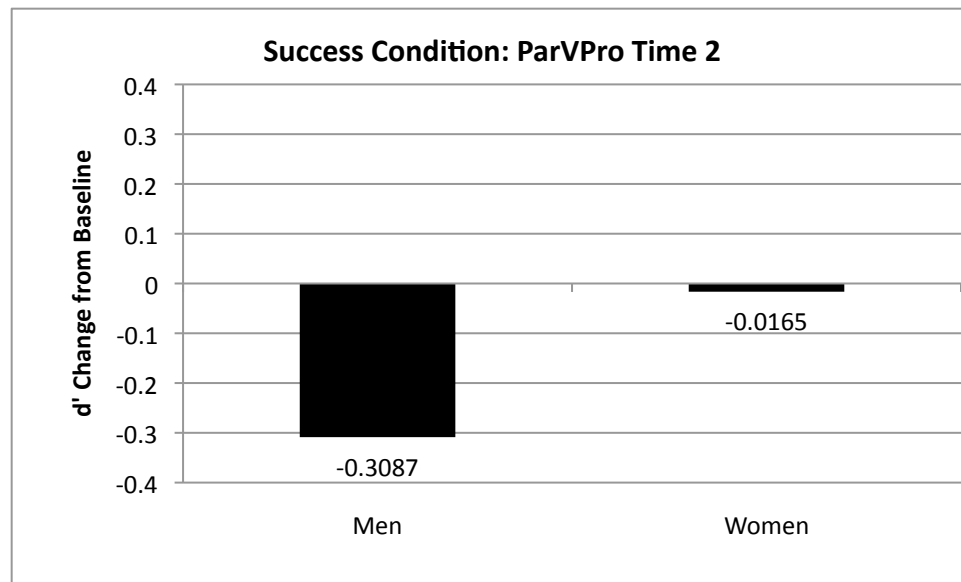


Figure 13. d' difference in ParVPro at Time 2 relative to Baseline for those in the Success condition.

⁷ This 5-way interaction was not significant for the word d' scores, $F < 1, p = .70$, but on the overall d' scores it was marginal, $F(1, 126) = 2.59, p = .11$, in the same direction as the image d' scores.

However, as predicted, this 4-way interaction was significant within the Failure condition, $F(1, 126) = 5.52, p = .02$. In support of the primary hypothesis, looking just within women in the Failure condition, affirming in the Parent compared with the Career domain led to elevated Parent relative to Work self-role associations, and this effect was stronger for those with fewer children (i.e., those for whom many Work-Family balance decisions have yet to be made), $F(1, 126) = 3.92, p = .05$, for the Role Domain X Affirmation Domain X Number of children interaction (see Figure 14).

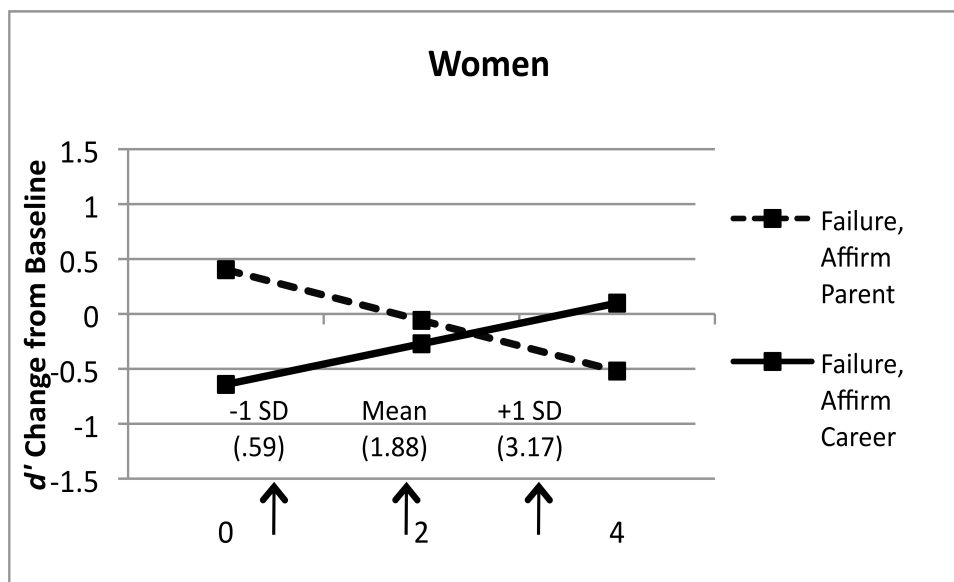


Figure 14. d' difference in the within-subjects ParVPro score at Time 2 relative to Baseline for Women in the Failure condition, separately by Affirmation Domain.

For men who imagined a professional failure, however, the domain of Affirmation made no difference on average, $F < 1$, nor did the difference between the Affirmation conditions depend on number of children, $F(1, 126) = 1.66, p = .19$ (see Figure 15). On average, men in the Failure condition shifted significantly toward the Work identity at Time 2 (that is, the mean value in Figure 15 is significantly less than zero), $F(1, 126) = 5.66, p = .019$, and this marginally depended on number of children, such that men with fewer children shifted towards the Work identity at Time 2 more strongly than those with more children, regardless of Affirmation

condition (that is, the average slope in Figure 15 tends to be positive, but as noted above, does not differ by affirmation condition), $F(1, 126) = 3.09, p = .08$.

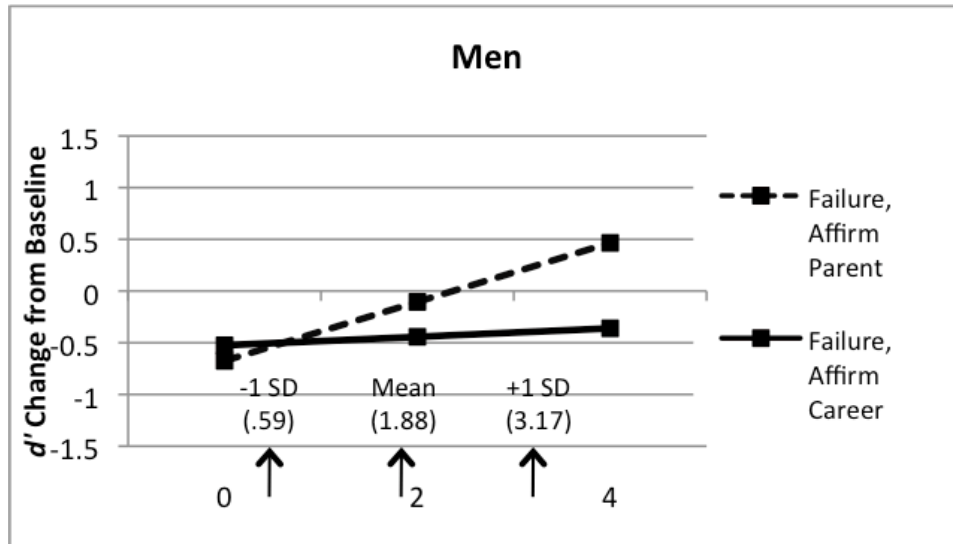


Figure 15. d' difference in the within-subjects ParVPro score at Time 2 relative to Baseline for Women in the Failure condition, separately by Affirmation Domain.

Work Engagement, Job Involvement, and Self-Efficacy Repair

It was also of interest whether explicit measures of Work Engagement and Job Involvement would vary as a function of condition and gender in a similar manner as the implicit self-role associations. Each of these measures was regressed on the same between-subjects predictors as described above: Success/Failure Imagery Condition, Affirmation Domain, Gender, and centered Number of Children, with all possible interactions; Age was again included as a covariate (centered). For Work Engagement ($\alpha = .83$), the results indicated a marginal effect of Success/Failure Imagery Condition, $F(1, 128) = 3.03, p = .08$, such that those in the Failure condition ($M_{failure} = 3.27$) scored moderately lower on Work Engagement than those in the Success condition ($M_{success} = 3.51$), which was an assurance that the duration of the effects of the manipulation were acceptably long. In addition, there was a significant Affirmation Domain X Gender interaction, $F(1, 128) = 4.49, p = .03$ (see Figure 16), such that men who affirmed in the Career domain ($M_{career} = 3.60$) reported a moderately higher level of work engagement compared with the Parent domain ($M_{parent} = 3.32$), $F(1, 128) = 3.39, p = .06$; the

difference between Affirmation Domain for women was not significant ($M_{\text{career}} = 3.27$; $M_{\text{parent}} = 3.45$).

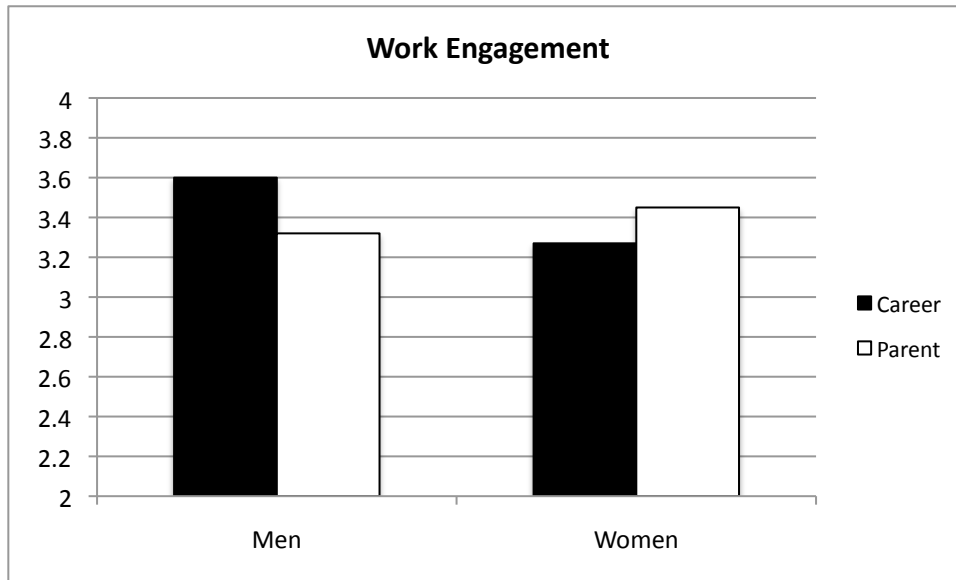


Figure 16. Work Engagement scores by Gender and Affirmation Domain.

The same analysis conducted on the Job Involvement scores ($\alpha = .74$) revealed a similar effect of Success/Failure Imagery, $F(1, 128) = 4.12$, $p = .045$, such that those in the Failure condition ($M_{\text{failure}} = 2.30$) had lower Job Involvement scores than those in the Success condition ($M_{\text{success}} = 2.51$). Additionally, there was a marginal main effect of number of children such that as the number of children increased, participants reported lower levels of Job Involvement, $F(1, 128) = 3.06$, $p = .08$.

The only significant effects revealed in a parallel analysis of Life Satisfaction scores (career; $\alpha = .74$, parent, $\alpha = .83$; significant other, $\alpha = .92$) were on the Career Life Satisfaction scores⁸. The only effect of Number of Children in this model was a marginal Success/Failure Imagery X Number of Children interaction, $F(1, 127) = 3.39$, $p = .07$, such that the difference in

⁸ I also examined the three Life Satisfaction measures as potential moderators of the self-role association changes (in parallel to the models testing for moderation by number of children), but there were no effects of note in these analyses.

Career Life Satisfaction scores between the Success and Failure conditions was larger on average for those with more children. Additionally, there was a marginal Success/Failure Imagery X Affirmation Domain interaction for the Career Life Satisfaction scores, $F(1, 127) = 3.42, p = .06^9$. Looking at Figure 17, controlling for Age and on average across Gender and number of children, participants in the Failure condition show marginally higher Career Life Satisfaction after affirming the Career (the white bars) compared to the Parent role (the black bars), $F(1, 127) = 2.69, p = .10$; in the Success condition, participants showed no difference in Career Life Satisfaction after affirming the Parent compared to the Career role, $F < 1, p = .32$. There was also a marginal main effect of Gender, $F(1, 127) = 2.62, p = .11$, such that women scored lower on average on the Career Life Satisfaction measure than men. However, this effect depended on Success/Failure Imagery condition, $F(1, 127) = 3.61, p = .06$ (again see Figure 17). Whereas women scored lower than men on Career Life Satisfaction overall in the Failure condition, $F(1, 136) = 6.10, p = .015$, men and women did not differ in the Success condition $F < 1, p = .84^{10}$.

⁹ Note that there was a loss of one degree of freedom in this analysis as a result of missing data on the life satisfaction measures for one participant.

¹⁰ These three effects were significant in the simpler model where Number of Children Age were not included: Success/Failure Imagery X Affirmation Domain: $F(1, 136) = 6.10, p = .015$; Gender main effect: $F(1, 127) = 2.62, p = .11$; Success/Failure X Gender: $F(1, 127) = 3.61, p = .06$ $F(1, 136) = 4.75, p = .031$. No other effects besides the Success/Failure Imagery X Number of Children interaction (described in the text above) were significant in this analysis. The means in Figure 17 are not adjusted for Age or Number of Children.

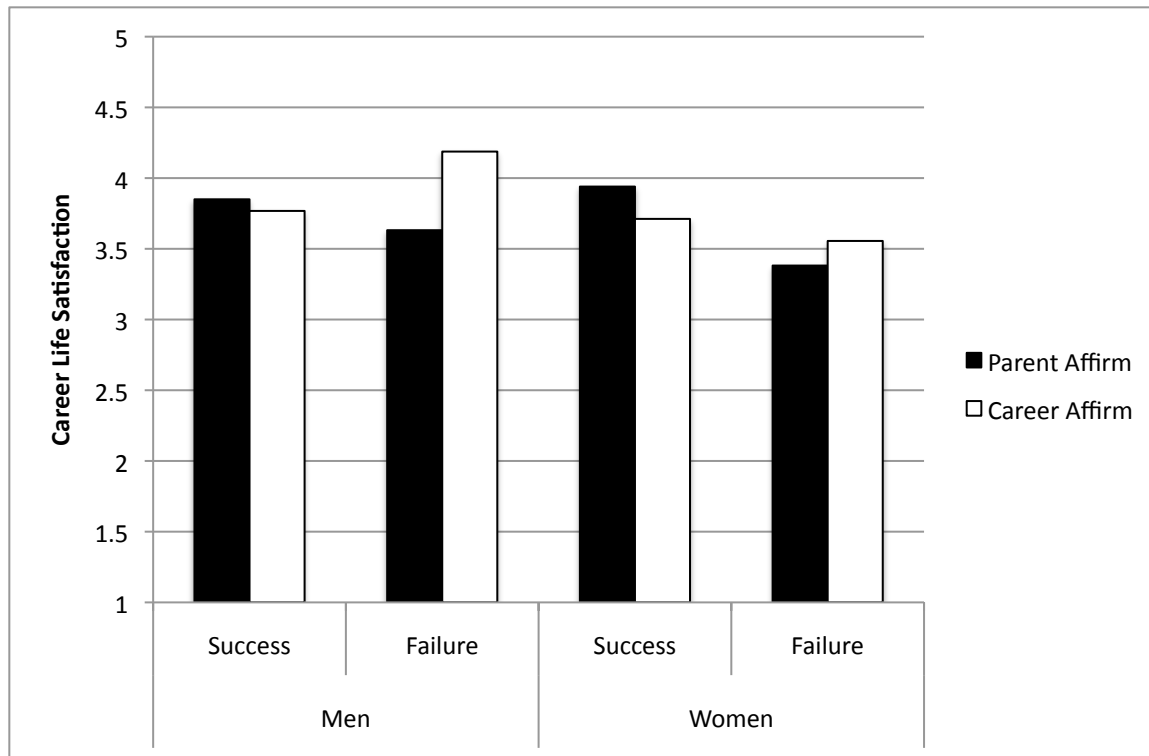


Figure 17. Career Life Satisfaction by Gender and condition.

I also tested whether participants showed reparative effects on the second set of Self-Efficacy items ($\alpha = .79$), and whether this differed as a function of condition using the same set of predictors, plus the average score on the first set of Self-Efficacy items as an additional covariate with Age. The results of this analysis showed a significant increase in Self-Efficacy between the first and the second set, $F(1, 127) = 12.96, p = .003$. However, there were no significant condition effects in this model, indicating that to the degree there was repair to Self-Efficacy following the Imagery task and subsequent Affirmation, it did not depend on condition or gender. Conducting this analysis without controlling for set 1 Self-Efficacy scores only revealed the same overall (but now marginal) gender difference as in the first set, $F(1, 128) = 3.65, p = .06$, such that women scored lower than men.

Discussion

In Study 2, I was interested in the consequences of affirming a threat to one role of a potentially oppositional set (Career) with its twin (Parent) on identification, especially to the degree that these consequences differ for men and women. I predicted that because the roles of Parent and Career may be culturally ingrained as more oppositional for women, they would be more likely to show the effects of “oppositional affirmation” such that when women experienced a professional failure and affirmed the parent domain they would shift their implicit self-role identifications more towards their Parent identity relative to their Work identity. I expected that men would not show this pattern because cultural expectations of men put such a strong emphasis on the importance of success in the professional role (even as a means to fulfilling the parenting role); instead I predicted that they would shift even more strongly toward the Work identity after a professional failure, no matter which domain they affirmed.

These hypotheses were mostly supported by the results, but moderation of the primary effects of interest by number of children pointed to a more nuanced picture of self-role associations. The predicted differences in self-role association changes between men and women as a function of Success/Failure Imagery and Affirmation Domain were most apparent for those who had the fewest children. At this “pre-parent” or early parenting stage, dealing with a professional failure through reaffirmation of the Career role led both men and women to shift self-role associations toward Work. When the failure was affirmed in the Parent domain, men still shifted towards Work, whereas women shifted their self-role associations more towards Parent relative to baseline. It is interesting that the predicted effects should appear most strongly for those at early stages of parenting because, the people who would be expected to experience the most dramatic effects of oppositional affirmation are the ones who are at the beginning stages of identification, as predicted by Oppositional Identity Theory. It is these people for whom failures and successes may be especially able to shape the self-concept hierarchy.

In addition, the results of the explicit measures of identification with Career (Work Engagement, Job Involvement) told a slightly different, and yet not inconsistent story of the data. The Success/Failure condition differences on both the Work Engagement and Job Involvement scores assured me that the manipulation had adequately long-lasting effects throughout the study. Moreover, the Affirmation X Gender interaction revealed that across Success/Failure conditions, it was only men who showed effects of Affirmation Domain on Work Engagement. This is an interesting result in itself because it suggests that the Career affirmation (versus the Parent affirmation) led to redoubling of Career identification at both an implicit and an explicit level for men, which was not the case for women who only showed this effect at an implicit level. It may be that the match between explicit and implicit Career affirmation effects for men is driven by a congruency between subjective cultural prescriptions of what thinking about one's career *should* mean and the effects of affirmation on implicit self-associations.

There were a few notable differences between the predicted effects of Study 2 and the results. In particular, the self-role association shifts of men were sensitive to family size such that men who were at early stages of parenthood (or merely anticipating it) were the ones unilaterally shifting towards the Work self-role associations after a threat regardless of affirmation, as predicted. Men with larger families did not show the predicted effects as strongly. This may reflect a similarity to the women in where the predicted effects emerge. Specifically, as people are forced to actually negotiate the behavior-based role conflict that surrounds work and family life, the ones who stay in their careers (as opposed to choosing to exit them) have begun to figure it out and internalize more stable self-role associations (i.e., changes in ParVPro close to 0) compared with earlier in the process where self-role associations shift in the direction predicted by Oppositional Identity Theory. It is important to note that our sample is made up of people who are currently employed and for whom the balance between work and family has not forced a choice yet. As a result, it is difficult to say whether, given a sample of working-age

adults (not recruited specifically from a place of employment), we would expect to find the same moderation by number of children.

IV. GENERAL DISCUSSION

The two studies together speak to the possible differences between women and men in how identification with the parent and professional roles is shaped in response to failure and subsequent efforts to restore self-integrity. Study 1 tested for differences between men and women in their self-role association shifts thinking of parenting and professional responsibilities as either oppositional versus facilitative in nature, and threat. Differences emerged to show that thinking of parent and professional roles in an oppositional manner leads to activation of the parent role following a professional failure for women. Study 2 examined gender differences in the consequences people face when they utilize the parent role to affirm threats to their professional identity. Focusing on the parent role after a professional failure exercise resulted in women subsequently showing a weakening of implicit identification with the professional role relative to the parent role.

Together, these two studies provided evidence for Oppositional Identity Theory's assertion that the oppositional twin of a set will be a particularly salient source of affirmation, and for the idea that culture leads men and women to experience the parent and professional roles fundamentally differently such that they may repair threats to these roles in predictably different ways. Overall, the results of the two studies were consistent with one another and supported the hypotheses, especially with regard to divergence between men and women in the effects of thinking about one role or the other (or the relationship between them) after a failure. Additionally, because Study 2 was conducted using an organizational sample, it helped shed light on how the results from our previous studies using undergraduates apply to men and women who are in the midst of balancing these roles.

However, there were important differences between the two studies in terms of what variables moderated the primary effects of interest. The major between-subject difference that mattered within the undergraduate sample in Study 1 was more about one's subjective self-efficacy in handling conflicts between the roles, and within the BPA sample it was a simple measure of a person's current parenthood situation. Given this, it is interesting to consider how the two samples differed: in contrast to the undergraduates who may have a perspective on how these roles will relate, but do not have experience trying to balance it all, Study 2 included people for whom the "real life" aspect of work and family has reared its head. Study 2 thus seems to be more of a reflection of how the day-to-day experience of balancing parenting and professional life (as opposed to one's abstract self-efficacy) becomes ingrained in people's self-role associations. Yet it is important to keep in mind that the BPA sample is not merely an older version of the undergraduate participants; these are individuals who are currently employed and who completed the study as part of their job requirements. Thus, the results may be specific to how people's self-role associations shift while on the job, or after they have figured out an acceptable balance between work and family.

The differences between the important moderators in these two studies also reflect limitations of the current research and a need to expand the study of the hypotheses of Oppositional Identity Theory. There were two questions addressed in this research: 1) As a result of culturally-ingrained associations, do women experience the parent and professional roles as more of an oppositional set than do men, with the consequence that they more often look to one role within that set to affirm threats of the other? 2) Does using one role to affirm the other lead to greater disidentification with the threatened role if the roles form an oppositional set? It would have been useful if the set of studies had been able to address both questions with each population in order to gauge the similarity of the implicit self-role association shifts in the two populations. However, with only two studies, each testing a separate but related hypothesis,

it is impossible to discern whether the differences in which variables moderated the primary results of interest were a result of the populations or the processes.

Additionally, the populations from which these samples were taken were not as representative as would have been ideal. The conclusions drawn from the organizational sample (Study 2) in particular could have been more generalizable to the larger population of working adults had the sample been a more representative swath of BPA such that all generations, job categories, and status levels were included. Moreover, as a result of its size, the useable sample obtained at BPA may have been limited in its power to detect the predicted relationships among the measured variables. Yet, the fact that self-role association shifts were observed in our rather small organizational sample lends credence to the hypotheses introduced by Oppositional Identity Theory, but certainly more research is needed before conclusions are made about the general population of working adults. It could also be suggested that undergraduate students are not the best candidates for a study of self-parent and self-career associations (Study 1) because by and large they have not yet fully developed their parent or career identities. However, because the students did indeed show implicit self-role associations and were easily able to picture themselves in these roles, it is important to show that between-group differences in whether a set of identities is experienced as oppositional can appear even at early stages of their development.

Even with the limitations presented by the samples, across both studies, it was clear that there were important moderating variables to consider. Although the principles of Oppositional Identity Theory may be applied to many types of roles in order to understand how people come to identify with them and remain committed even after threats to their success, one must allow for the range of moderating variables that likely affect the way oppositional identity sets and oppositional affirmation play out across individuals and groups. It is important to note that the long-term consequences of this process will vary because they may be determined by features of specific identities and the threats affecting them, and these may vary within and across

individuals or social groups. These moderating variables are summarized in the following section.

Factors Moderating the Effects of Oppositional Self-Affirmation

Variation in the overall centrality of oppositional identities

The overall level of importance of a set of oppositional identities in the self-concept hierarchy can change the propensity to engage in oppositional self-affirmation. Specifically, sets of less important identities will be less likely to activate the psychological immune system overall because less valued identities have less of an impact on global self-worth (Crocker & Wolfe, 2001). For example, although a person's identity as a member of the basket-weaver club may technically exist in an oppositional set with his or her identity as an active participant in the neighborhood watch (because both have meetings on Monday nights), the overall level of importance of these roles is likely to be low. Thus, dealing with threats to one or the other of these roles may still be subject to the same pressures as other oppositional threats, but repairing them will be less of a concern overall, as is predicted by cognitive dissonance theory (Festinger, 1957). With less need to repair threats to these less important identities, there will be fewer opportunities to engage in oppositional self-affirmation and less of a chance that this strategy will become chronic. Thus, oppositional self-affirmation and its effects with habitual use would be most common in identities that are more central to the global self-concept.

Timecourse of the identification process

Identification with self-aspects develops over the course of time, becoming more defined as more experiences are integrated (Harter, 1997). At later stages in the identification process, people become more aware of their aptitude for success in that particular domain, and they develop a broader lens through which they can interpret threats. Additionally, at later stages of identification, more time and effort has been invested, which means that identification is likely to

be stronger on average at later stages than at earlier stages (Brickman, Dunkel-Schetter, & Abbey, 1987). These factors combine to affect the likelihood of using oppositional self-affirmation and its effects. At the beginning of identification, engaging in oppositional self-affirmation would likely lead to greater disidentification with the threatened role than it would at a later stage when threats appear less grave and leaving the role behind is more difficult.

Variation in the degree of opposition for roles in a set

By definition the two identities of an oppositional sets tradeoff with one another, and are equally committed to (as determined by centrality and salience). However, individual differences in these features can determine how oppositional people perceive identity sets to be. Because precisely what a role entails varies within and between people, the level of centrality, salience, and conflict in a set will vary at these levels as well. People may construe the same roles differently such that one person experiences them as oppositional whereas another will not. Alternatively, one person can construe the very same identity differently over time as the centrality, salience or conflict between roles changes. To the extent that differences in these features is predictable within and across individuals, differences in the use of oppositional self-affirmation can be better understood. These variations can subsequently affect when and how oppositional self-affirmation is deployed to deal with identity threats.

Variation in the degree to which identities in an oppositional set are incompatible

One important factor affecting the use of oppositional self-affirmation as a threat management tool is the level of incompatibility between the identities in an oppositional set. When conflict occurs between identities of an oppositional set, it is not all-or-nothing. Rather, its intensity is on a continuum relative to how much engaging in one identity precludes engaging in the other. As described above, the more an identity trades off with another in the self-concept, the more that one is likely to be salient as the cause of and resolution to threats in the other.

This means that people's use of oppositional self-affirmation to address self-integrity threats will vary across identity sets as a function of how much conflict exists within them.

Importantly, levels of opposition between identities in a set can vary not only within individuals but between them. Two identities may not be oppositional for everyone because the way they are represented in the self-concept differs across individuals (Linville, 1985; Schleicher & McConnell, 2005; Settles, et al., 2002). As Katz and colleagues (1964) note, the shape a role takes is largely socially determined by the expectations of others, meaning that role definitions will vary across people and thus the behavior-based, strain-based, and time-based conflict between sets of roles will also vary. For example, role conflict is known to exist in organizations when employees are assigned to roles that are incompatible with one another (e.g., to serve on a project as both a production manager in charge of maintaining efficiency and as a team leader in charge of morale). Differences in organizational culture, expectations set by supervisors, and individual differences in role construal can lead people to perceive these two roles being viewed as more or less conflictual as they integrate them into their self-concept. To the extent that one employee views the two identities as more oppositional than another who views them as compatible, he or she will engage more frequently in oppositional self-affirmation to deal with failures that occur in those two roles. Over the course of a project, the importance of the threatened role could degrade in favor of the affirmed role, which would have important consequences for the success of the organization.

Variation in the commitment of one role relative to another in a set: centrality and salience

It is also the case that the commitment to roles is dynamic, such that one role can be differentially central or salient to a person across time, or between individuals. Again, this means that the perceived opposition between two roles can vary. This difference might be evident between student-athletes who are on athletic scholarships and those who are not.

Although both types of students certainly experience the same tradeoffs when trying to succeed both in academia and in athletics simultaneously, those paying for school on their own may feel more committed to their student identity. Given equally high commitment to athletic success, when the two identities are in conflict (such as when sports practice conflicts with time needed to study for a final exam), a student without a scholarship may feel more opposition in the demands of the two identities because the salience and commitment levels of the two identities are more similar. On the other hand, student-athletes on scholarship may attach greater centrality to their athletic identity than their student identity, thinking of the student role only as important to the extent that maintaining satisfactory grades will allow them to continue to pursue their athletic goals. As a result, the athlete on scholarship may engage far less frequently in oppositional self-affirmation than the other for this set of roles precisely because the two identities are less oppositional.

This example highlights a useful application of oppositional identity theory to chart the development of role identification as a function of other social groups apart from gender differences in the experience of work versus family roles. In doing so, oppositional self-affirmation is a useful tool for looking at the underpinnings of the sociodemographic differences in identification and how they may map onto important societal trends in achievement and role participation.

Interestingly, as the current research proposes, these moderating factors vary across groups because roles are socially defined in ways that might depend on group membership. Specifically, to the degree that there are group-level mean differences in these moderating variables, there will be group-level differences in the self-concept shifts as a result of threats to various self-aspects. As a result, use of oppositional self-affirmation will also vary as a function of group membership. Although certainly there is the possibility that each moderating factor could differ at the group level, often the most fruitful moderating factor to consider in this context

is differences between groups in the conflict or commitment of identities because it affects the perception of opposition in identity sets.

Implications

Interventions

One of the most important implications of the current studies is to inform interventions designed to reduce Work-Family conflict and retain valuable talent within organizations. The current studies join a steady stream of research assessing role salience, work-family conflict, how decisions are made regarding the two roles, and how organizations can structure their policies in order to best support their employees (Carlson & Kacmar, 2000; Greenhaus & Powell, 2003; Greenhaus & Parasuraman, 1994, 1997, 1999; Greenhaus, Parasuraman, & Collins, 2001; Park, et al., 2010a). With an eye toward contributing to organizational best practices, the current research provides insight into how training programs might be designed to help employees and aspiring professionals successfully cope with failure in their careers without disengaging. Of particular interest in both of the current studies is the finding that women bolstered their implicit professional identities after a failure under certain circumstances, essentially mirroring the results for men (i.e., when viewing the roles as Facilitative [Study 1], or when affirming the threat with the professional identity [Study 2]). With this in mind, it is possible to imagine interventions designed to increase the perceived compatibility between the two roles or to guide women toward repairing threats to one aspect of their professional identity by affirming another. In this way, the oppositional nature of the professional and parenting roles may be reduced for women.

However, before such interventions are designed, it would be important to consider the potentially negative consequences that men may suffer by experiencing the parenting and professional roles as chronically facilitative. Because there is evidence to indicate that cultural expectations dictate that one of the primary responsibilities of dads is to succeed professionally (Park, et al., in press), men may feel particularly threatened by failures at work. Without

alternative roles to turn to, the hit to self-integrity after a work failure may be especially large for men because professional success is a defining feature of both the parent and the professional role. Therefore, before creating interventions that seek to lead women to act like their male counterparts in their self-concept responses to professional failure, it will be critical to ensure that they do not increase commitment to the professional identity at the cost of the psychological well-being associated with having multiple roles (Linville, 1985). Yet to the degree that useful organizational interventions emerge from understanding how oppositional identities may differ between the genders, many talented women may find themselves more confident in how to balance the demands of work and family without choosing one over the other.

Self-Affirmation Theory

In addition to informing the development of interventions, the results of the current studies provide insight into existing theory on the self-concept. In particular the different effects of the parent versus career affirmation from Study 2, suggest a need for existing Self-Affirmation Theory (Steele, 1988; Cohen & Sherman, 2006) to be expanded. As it is currently conceptualized, all self-affirmations are equal. That is, regardless of the domain from which they spring, self-affirmations are theorized to be equally effective ways of restoring self-integrity following a threat so long as the domain or value is important enough. This may well be the case on average, but to think of all possible self-affirmation domains equally neglects the possibility, revealed in Study 2, that affirming a domain that is “oppositional” to that which is threatened can have the unintended consequence of shifting self-role associations away from the threatened identity. In addition, because self-affirmation exercises are often relatively open-ended in that they allow people to subjectively choose the “most important” values or domains to think about, there is likely to be predictable variation in which domains are chosen, as revealed in Study 1.

To the degree that these more oppositional affirmation processes set in motion a shift in the self-concept hierarchy as Oppositional Identity Theory proposes, interventions involving affirmations should take into account the unintended (and potentially negative) consequences to the self-concept hierarchy of allowing people to choose their own affirmations. More generally, those studying Self-Affirmation Theory may do well to consider that the domains recruited to repair threats to self-integrity may not operate in an additive manner, simply allowing people to step back and remind themselves of another aspect of their self-concept without consequence for the threatened domain. Instead, the particular domain in which an affirmation occurs may result in more complex interactions with the self-concept hierarchy than has been previously acknowledged or understood.

V. CONCLUSIONS

In this paper, I have proposed a theory of oppositional identities that hypothesizes certain identities to exist in the self-concept hierarchy as oppositional sets, and that threats to these identities are likely to be addressed through the use of oppositional self-affirmation as a threat management tool. Additionally, this paper has reported two studies that use the principles of Oppositional Identity Theory to test predictions about how men's and women's identification with the professional and parent roles may change in response to threat and affirmation.

As I hope to have illustrated, this theory has a broad range of applicability, resulting in the ability to make predictions about identification development processes across the lifespan, between individuals, and across groups. With the emergence of notable and consequential disparities between groups in achievement across the spectrum of domains, consideration of how individuals identify with roles in these areas is crucial. This theory can then help to frame differences in how roles as an underlying cause of achievement gaps. In turn, it is my hope that interventions in these types of domains can be targeted directly at the features determining whether roles are construed as oppositional so that those gaps can be closed.

BIBLIOGRAPHY

- Aronson, E., & Mills, J. (1959). The effect of severity of initiation on liking for a group. *The Journal of Abnormal and Social Psychology*, 59(2), 177-181.
- Baruch, G. K., & Barnett, R. C. (1987). Role quality, multiple role involvement, and psychological well-being in midlife women. *Journal of Personality and Social Psychology*, 51, 578-585.
- Baumeister, R. F. (1998). The self. In D. T. Gilbert, S. T. Fiske & G. Lindzey (Eds.), *The handbook of social psychology, vols. 1 and 2 (4th ed.)*. (pp. 680-740). New York, NY, US: McGraw-Hill.
- Brickman, E., Dunkel-Schetter, C., & Abbey, A. (1987). The development of commitment. In C. B. Wortman & R. Sorrentino (Eds.), *Commitment, conflict, and caring* (pp. 145-221). Englewood Cliffs, NJ: Prentice-Hall.
- Brown, C. M., & McConnell, A. R. (2009). When chronic isn't chronic: The moderating role of active self-aspects. *Personality and Social Psychology Bulletin*, 35, 3-15.
- Burke, P.J. and Reitzes, D.C. (1991). An identity approach to commitment. *Social Psychology Quarterly* 54, pp. 239–251.
- Carlson, D.D., & Kacmar, K.M. (2000). Work–family conflict in the organization: Do life role values make a difference? *Journal of Management* 26, pp. 1031–1054.
- Chapman, N.J., Ingersoll-Dayton, & Neal, M. B. (1994). Balancing the multiple roles of work and caregiving for children, adults, and elders. In G. P. Keita and J. J. Hurrell (Eds.). *Job Stress in a Changing Workforce: Investigating Gender, Diversity, and Family Issues*. (pgs. 283-400). Washington, DC: American Psychological Association.
- Cooke, R. A., & Rousseau, D. M. (1983). Relationship of life events and personal orientations to symptoms of strain. *Journal of Applied Psychology*, 68(3), 446-458.

- Cooke, R. A., & Rousseau, D. M. (1984). Stress and strain from family roles and work-role expectations. *Journal of Applied Psychology*, 69(2), 252-260.
- Correll, J., Park, B., & Smith, J. A. (2008). Colorblind and multicultural prejudice reduction strategies in high-conflict situations. *Group Processes & Intergroup Relations*, 11(4), 471-491.
- Crocker, J., & Wolfe, C. T. (2001). Contingencies of self-worth. *Psychological Review*, 108(3), 593-623.
- Deaux, K., Wrightsman, L. S., Sigelman, C. K., & Sundstrom, E. (1988). *Social psychology (5th ed.)*. Belmont, CA, US: Thomson Brooks/Cole Publishing Co.
- Dweck, C. S., & Leggett, E. L. (1988). A social-cognitive approach to motivation and personality. *Psychological Review*, 95(2), 256-273.
- Festinger, L. (1957). *A theory of cognitive dissonance*. Oxford, England: Row, Peterson.
- Frone, M. R., Russell, M., & Cooper, M. L. (1992). Antecedents and outcomes of work-family conflict: Testing a model of the work-family interface. *Journal of Applied Psychology*, 77, 65-78.
- Gerson, J. M. (1985). Women returning to school: The consequences of multiple roles. *Sex Roles*, 13(1-2), 77-92.
- Gilbert, D. T., Pinel, E. C., Wilson, T. D., Blumberg, S. J., & Wheatley, T. P. (1998). Immune neglect: A source of durability bias in affective forecasting. *Journal of Personality and Social Psychology*, 75(3), 617-638.
- Goff, S. J., Mount, M. K., & Jamison, R. L. (1990). Employer supported child care, work/family conflict, and absenteeism: A field study. *Personnel Psychology*, 43, 793-809.
- Goode, W. J. (1960). A theory of role strain. *American Sociological Review*, 25, 483-496.
- Green, D. M., & Swets, J. A. (1966). *Signal detection theory and psychophysics*. New York: Wiley. Reprinted 1974 by Krieger, Huntington, NY.

Greenhaus, J. H., & Beutell, N. J. (1985). Sources of conflict between work and family roles.

Academy of Management Review, 10, 76-88.

Greenhaus, J. H., & Parasuraman, S. (1994). Work–family conflict, social support and well-

being. In: Davidson, M.J. and Burke, R.J., Editors, 1994. *Women in management:*

Current research issues, Paul Chapman, London, pp. 213–229.

Greenhaus, J. H., & Parasuraman, S. (1997). The integration of work and family life: Barriers

and solutions. In: Parasuraman, S. and Greenhaus, J.H., Editors, 1997. *Integrating work*

and family: Challenges and choices for a changing world, Quorum Books, Westport, CT,

pp. 232–240.

Greenhaus, J. H., & Parasuraman, S. (1999). Research on work, family, and gender: Current

status and future directions. In: Powell, G.N., Editor, , 1999. *Handbook of gender and*

work, Sage, Thousand Oaks, CA, pp. 391–412.

Greenhaus, J. H., Parasuraman, S., & Collins, K. M. (2001). Career involvement and family

involvement as moderators of relationships between work–family conflict and withdrawal

from a profession. *Journal of Occupational Health Psychology*, 6, 91 – 100.

Greenhaus, J. H., & Powell, G. N. (2003). When work and family collide: Deciding between

competing role demands. *Organizational Behavior and Human Decision Processes*, 90,

291-303.

Hammer, L. B. Allen, E. & Grigsby, T. D. (1997). Work and family conflict in dual-earner

couples: Within-individual and crossover effects of work and family. *Journal of*

Vocational Behavior, 50(2), 185-203.

Handelsman, J., Cantor, N., Carnes, N, Denton, D., Fine, E., Grosz, B., Hinshaw, V., Marrett, C.

Rosser, S., Shalala, D., & Sheridan, J. (2005). More women in science. *Science*, 309,

1190-1191.

- Harter, S. (2006). The self. In N. Eisenberg, W. Damon & R. M. Lerner (Eds.), *Handbook of child psychology: Vol. 3, social, emotional, and personality development (6th ed.)*. (pp. 505-570). Hoboken, NJ, US: John Wiley & Sons Inc.
- Harter, S., Bresnick, S., Bouchev, H. A., & Whitesell, N. R. (1997). The development of multiple role-related selves during adolescence. *Development and Psychopathology*, 9(4), 835-853.
- Hewlett, S. Al., & Luce, C. B. (2005). Off-ramps and on-ramps: keeping talented women on the road to success. *Harvard Business Review*, 83, 43-54.
- Hirshman, L. R. (2005). Homeward bound. *American Prospect*, 16, 20-26.
- Hogg, M. A., & Abrams, D. (1993). Towards a single-process uncertainty-reduction model of social motivation in groups. In M. A. Hogg, & D. Abrams (Eds.), *Group motivation: Social psychological perspectives*. (pp. 173-190). Hertfordshire, HP2 7EZ, England: Harvester Wheatsheaf.
- Hogg, M. A., & Turner, J. C. (1987). Intergroup behaviour, self-stereotyping and the salience of social categories. *British Journal of Social Psychology*, 26(4), 325-340.
- Jones, E. E., & Davis, K. E. (1965). From acts to dispositions: The attribution process in person perception. In L. Berkowitz (ed.), *Advances in experimental social psychology*, (vol 2, pp. 219 – 266). New York: Academic Press.
- Kahn, R. L., Wolfe, D. M., Quinn, R., Snoek, J. D., & Rosenthal, R. A. (1964). *Organizational Stress*. New York: Wiley.
- Kanter, R. M. (1972). *Commitment and community: Communes and Utopias in social perspective*. Cambridge, MA: Harvard University Press.
- Katz, D. & Kahn, R. (1978). *The social psychology of organizations* (2nd Ed.). New York: John Wiley & Sons.
- Kobrynowicz, D., & Biernat, M. (1997). Decoding subjective evaluations: How stereotypes provide shifting standards. *Journal of Experimental Social Psychology*, 33, 579-601.

- Koole, S. L., Smeets, K., van Knippenberg, A., & Dijksterhuis, A. (1999). The cessation of rumination through self-affirmation. *Journal of Personality and Social Psychology*, 77(1), 111-125.
- Kunda, Z. (1987). Motivated inference: Self-serving generation and evaluation of causal theories. *Journal of Personality and Social Psychology*, 53(4), 636-647.
- Leary, M. R., & Baumeister, R. F. (2000). The nature and function of self-esteem: Sociometer theory. In M. P. Zanna (Ed.), *Advances in experimental social psychology*, vol. 32. (pp. 1-62). San Diego, CA, US: Academic Press.
- Lewin, K. (1951) Field theory in social science; selected theoretical papers. D. Cartwright (ed.). New York: Harper & Row.
- Linville, P. W. (1987). Self-complexity as a cognitive buffer against stress-related illness and depression. *Journal of Personality and Social Psychology*, 52(4), 663-676.
- Linville, P. W., & Carlston, D. E. (1994). Social cognition of the self. In P. G. Devine, D. L. Hamilton & T. M. Ostrom (Eds.), *Social cognition: Impact on social psychology*. (pp. 143-193). San Diego, CA, US: Academic Press.
- Lydon, J. E., & Zanna, M. P. (1990). Commitment in the face of adversity: A value-affirmation approach. *Journal of Personality and Social Psychology*, 58(6), 1040-1047.
- Major, B., Spencer, S., Schmader, T., Wolfe, C., & Crocker, J. (1998). Coping with negative stereotypes about intellectual performance: The role of psychological disengagement. *Personality and Social Psychology Bulletin*, 24(1), 34-50.
- Markus, H. (1977). Self-schemata and processing information about the self. *Journal of Personality and Social Psychology*, 35(2), 63-78.
- Markus, H., & Wurf, E. (1987). The dynamic self-concept: A social psychological perspective. *Annual Review of Psychology*, 38, 299-337.
- Mason, M. A., & Goulden, M. (2004). Marriage and baby blues: Redefining gender equity in the academy. *Annals of the American Academy of Political and Social Science*, 596, 86-103.

- McCall, G. J., & Simmons, J. L. (1966). *Identities and interactions*. New York, NY, US: Free Press.
- McConnell, A. R., & Strain, L. M. (2007). Content and structure of the self-concept. In C. Sedikides, & S. J. Spencer (Eds.), *The self*. (pp. 51-73). New York, NY, US: Psychology Press.
- McFarlin, D. B., & Blascovich, J. (1984). On the remote associates test (RAT) as an alternative to illusory performance feedback: A methodological note. *Basic and Applied Social Psychology*, 5(3), 223-229.
- Nosek, B. A., & Banaji, M. R. (2001). The Go/No-go association task. *Social Cognition*, 19, 625-666.
- Park, B., Smith, J. A., & Correll, J. (2008). "Having it all" or "doing it all"? Perceived trait attributes and perceived obligations as a function of parenthood, workload, and gender. *European Journal of Social Psychology*, 38, 1156 – 1164.
- Park, B., Smith, J. A., & Correll, J. (in press). The persistence of implicit behavioral associations for moms and dads. *Journal of Experimental and Social Psychology*.
- Park, B., & Smith, J. A. (2010). *Gender differences in priming effects for self-parent and self-professional associations*. Manuscript in preparation.
- Reeve, C. L., & Smith, C. S. (2001). Refining Lodahl and Kejner's job involvement scale with a convergent evidence approach: Applying multiple methods to multiple samples, *Organizational Research Methods*, 4, 91 – 111.
- Ridgeway, C. L., & Correll, S. J. (2004). Motherhood as a status characteristic. *Journal of Social Issues*, 60(4), 683-700.
- Rokeach, M. (1979). Some unresolved issues in theories of beliefs, attitudes, and values. *Nebraska Symposium on Motivation*, 27, 261-304.
- Rosenberg, M. (1979). *Conceiving the Self*. New York: Basic Books.

- Ross, L., & Nisbett, R. E. (1991). *The person and the situation: Perspectives of social psychology*. New York, NY, England: Mcgraw-Hill Book Company.
- Schaufeli, W. B., Bakker, A., & Salanova, M. (2006). The measurement of work engagement with a short questionnaire: A cross-national study. *Educational and Psychological Measurement*, 66, 701–716.
- Schleicher, D. J., & McConnell, A. R. (2005). The complexity of self-complexity: An associated systems theory approach. *Social Cognition*, 23(5), 387-416.
- Settles, I. H., Sellers, R. M. & Damus, A. (2002). One role or two? The function of psychological separation in role conflict. *Journal of Applied Psychology*, 87, 574 – 582.
- Sherer, M., Maddux, J., & Mercandante, S. (1982). The self-efficacy scale: Construction and validation. *Psychological Reports*, 51, 663 – 671.
- Sherman, D. K., & Cohen, G. L. (2006). The psychology of self-defense: Self-affirmation theory. In M. P. Zanna (Ed.), *Advances in experimental social psychology*, vol 38. (pp. 183-242). San Diego, CA, US: Elsevier Academic Press.
- Showers, C. (1992). Compartmentalization of positive and negative self-knowledge: Keeping bad apples out of the bunch. *Journal of Personality and Social Psychology*, 62(6), 1036-1049.
- Simon, L., Greenberg, J., & Brehm, J. (1995). Trivialization: The forgotten mode of dissonance reduction. *Journal of Personality and Social Psychology*, 68(2), 247-260.
- Skinner, B. F. (1938). *The behavior of organisms: An experimental analysis*. Oxford, England: Appleton-Century.
- Skinner, B. F. (1954). The science of learning and the art of teaching. *Harvard Educational Review*, 24, 86-97.
- Smith, E. R., & Mackie, D. M. (2006). It's about time: Intergroup emotions as time-dependent phenomena. In R. Brown, & D. Capozza (Eds.), *Social identities: Motivational, emotional*

- and cultural influences.* (pp. 173-187). Hove, England: Psychology Press/Taylor & Francis (UK).
- Steele, C. M. (1988). The psychology of self-affirmation: Sustaining the integrity of the self. In L. Berkowitz (Ed.), *Advances in experimental social psychology, vol. 21: Social psychological studies of the self: Perspectives and programs.* (pp. 261-302). San Diego, CA, US: Academic Press.
- Steele, C. M. (1997). A threat in the air: How stereotypes shape intellectual identity and performance. *American Psychologist*, 52(6), 613-629.
- Stryker, S. (1980). *Symbolic Interactionism: A Social Structural Version.* Menlo Park: Benjamin/Cummings.
- Stryker, S., & Serpe, R. T. (1994). Identity salience and psychological centrality: Equivalent, overlapping, or complementary concepts? *Social Psychology Quarterly*, 57(1), 16-35.
- Stryker, S., & Serpe, R. T. (1994). Identity salience and psychological centrality: Equivalent, overlapping, or complementary concepts? *Social Psychology Quarterly*, 57(1), 16-35.
- Tesser, A., & Cornell, D. P. (1991). On the confluence of self processes. *Journal of Experimental Social Psychology*, 27(6), 501-526.
- Tesser, A., & Cornell, D. P. (1991). On the confluence of self processes. *Journal of Experimental Social Psychology*, 27(6), 501-526.
- Tesser, A., Crepaz, N., Beach, S. R. H., Cornell, D., & Collins, J. C. (2000). Confluence of self-esteem regulation mechanisms: On integrating the self-zoo. *Personality and Social Psychology Bulletin*, 26(12), 1476-1489.
- Turner, J. C., Oakes, P. J., Haslam, S. A., & McGarty, C. (1994). Self and collective: Cognition and social context. *Personality and Social Psychology Bulletin. Special Issue: The Self and the Collective*, 20(5), 454-463.

Uebelacker, L. A., & Whisman, M. A. (2006). Moderators of the association between relationship discord and major depression in a national population-based sample. *Journal of Family Psychology, 20*, 40 – 46.

APPENDIX

*Appendix A: Role Relation Manipulation Instructions***[OPPOSITIONAL AND FACILITATIVE CONDITIONS]**

Typically people say that two of the most important roles they ever take on in their lives are their job and being a parent. In this study, we are interested in the different aspects of how people manage career and family life. Throughout this session, you will participate in a number of tasks having to do with these issues.

We find it helps to have people take a minute to think about these roles and how they might play out in your own life. To begin, we will ask you to reflect on parent and career goals for your own life, and to write about how you envision the two of those playing out over time.

[OPPOSITIONAL]

While many agree that it possible to simultaneously manage being a parent and having a career, they also speak to just how hard this can be. A career can be very demanding and the workplace culture makes it clear that the "best" employees are those who make themselves available 24/7. At the same time, raising children is time consuming and exhausting, and being available to one's children necessarily means less availability at work. Parents often express feeling guilty about not being at work when they are tending to their children, but similarly feeling guilty when they are at the office or traveling for work rather than home with their children. This conflict is a great challenge for our society and yet it is framed as a problem for individuals to solve. It is not something that government, professional organizations, or corporations are willing to step in and deal with.

We'd like you to take a few moments to consider how you personally might deal with the conflict between these two roles of parent and worker. When you think about yourself in your career, how might that interfere with your ability to be a good parent? When you think about yourself as a parent, how might that interfere with your career? In the space provided please 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. Please try to be specific about ways that you see each role possibly conflicting with the other, and what challenges this might present for you.

[FACILITATIVE]

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. Learning to manage a household with many schedules, needs and wants can help one practice managing offices or businesses that also involve different personalities, tasks and goals. Problem solving skills that are necessary for the workplace transfer nicely to mediating fights among family members. Balancing your own needs and wants against those of the rest of the family is not unlike balancing your own needs at the office against those of other employees. As a result, many employers claim that they prefer to hire people who have or plan to have a family because they have found that these people are often their best workers.



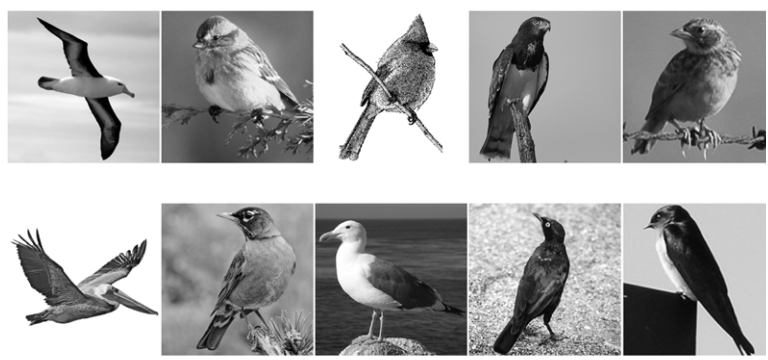
We'd like you to take a few moments to consider how you personally might experience these two roles of parent and worker as facilitating each other. When you think about yourself in your career, how might that help you as a parent? When you think about yourself as a parent, how might that help you in your career? In the space provided please write a bit first about your goals in the family and work domains, and then talk about how you see each role as possibly enhancing or contributing to the other. Please try to be specific about ways that you see each role facilitating the other, and how this might be helpful to you.

[CONTROL]

While participating today, you will be performing some tasks that are like video games in that they require quick responses and good hand-eye coordination.

In order to know more about your experience with playing video games, we'd like you to take a few moments to write a short paragraph about your past history with respect to video games. Specifically, how many times a week do you typically play video games? At what time in your life did you spend the most time playing video games? What about the least time? Do you particularly like video games, or do you just play them as something to pass the time? What types of games do you like playing? What types do you not like? Why?

Appendix B: GNAT categories for Study 1

| STIMULUS TYPE | | Number Per Block |
|------------------------|--|---------------------|
| ME | ME MYSELF I MINE | 20 |
| THEM | THEM THEY THEIRS THEIR | 20 |
| PROFESSIONAL IMAGES |  | 20 |
| PARENT IMAGES |  | 20 |
| BIRD NAMES | <div> SWALLOW BUNTING SEAGULL LARK FINCH </div> <div> ALBATROSS STARLING PELICAN EAGLE CARDINAL </div> | |
| BIRD IMAGES |  | 10 |

Appendix C: Remote Association Task Word Lists

[FAILURE]

bass complex sleep (*deep*)

chamber staff box (*music*)

desert ice spell (*dry*)

base show dance (*ball*)

inch deal peg (*square*)

soap shoe tissue (*box*)

blood music cheese (*blue*)

skunk kings boiled (*cabbage*)

jump kill bliss (*joy*)

shopping washer picture (*window*)

[SUCCESS]

surprise line birthday (*party*)

shelf read end (*book*)

sea home stomach (*sick*)

car swimming cue (*pool*)

walker main sweeper (*street*)

cookies sixteen heart (*sweet*)

chocolate fortune tin (*cookie*)

keel show row (*boat*)

mouse sharp blue (*cheese*)

chips pop cob (*corn*)

Appendix D: Study 1 Explicit Measures

Work-Family Conflict Self Efficacy:



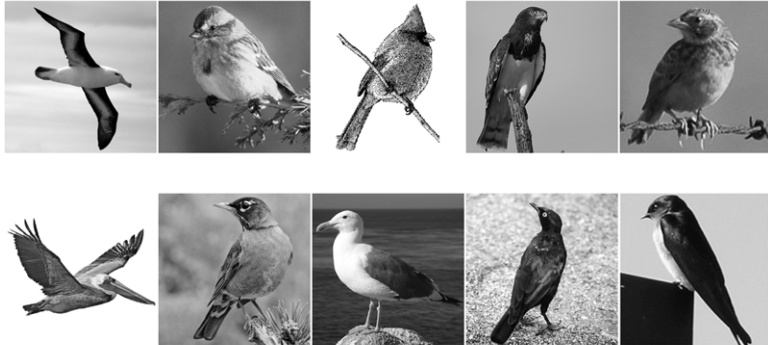
People sometimes find career and parenting responsibilities to be in conflict. The following questions ask about how able you feel you are or will be to manage such conflicts.

To what extent do you agree or disagree with each of the following statements.

| 1 | 2 | 3 | 4 | 5 | 6 | 7 |
|-------------------|---------------------|-------------------|----------------------------|----------------|------------------|----------------|
| Strongly Disagree | Moderately Disagree | Slightly Disagree | Neither Agree nor Disagree | Slightly Agree | Moderately Agree | Strongly Agree |

1. I can always manage to solve difficult parenting and career conflicts if I try hard enough.
2. 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)
3. It is easy for me to stick to my aims and accomplish my goals with respect to career and parenting aspirations.
4. I worry about my ability to deal effectively with unexpected events involving career and parenting responsibilities. (R)
5. Thanks to my resourcefulness, I know how to handle unforeseen situations involving career and parenting conflicts.
6. I can remain calm when facing parent—career difficulties because I can rely on my coping abilities.

Appendix E: GNAT categories for Study 1

| STIMULUS TYPE | | Number Per Block |
|---------------|--|------------------|
| ME | ME MYSELF I MINE | 20 |
| THEM | THEM THEY THEIRS THEIR | 20 |
| PARENT WORDS | PARENT FAMILY OFFSPRING KIDS CHILDREN | 20 |
| WORK WORDS | CAREER JOB WORK OCCUPATION PROFESSION | 20 |
| WORK IMAGES |  | 20 |
| PARENT IMAGES |  | 20 |
| BIRD NAMES | SWALLOW BUNTING SEAGULL LARK FINCH ALBATROSS STARLING PELICAN EAGLE CARDINAL | 10 |
| BIRD IMAGES |  | 10 |

Appendix F: Professional Experience Imagery Manipulation Instructions

[ALL PARTICIPANTS]

We're interested in people's reactions to experiences they might have on the job. To do this, we'll ask you to imagine a hypothetical scenario that could have happened at your job but hasn't actually occurred.

[FAILURE IMAGERY CONDITION]

Imagine you have been assigned a very difficult project at work. You have spent quite a bit of time over the past two weeks to accomplish this project, but in the end, it really did not come together as you had hoped and your supervisor is clearly very disappointed with how it turned out.

Please think for a moment about what this task could have been. Describe it in detail in the space below. To help you create as vivid a description as possible, consider answering the following questions in your description: Who assigned it to you? What would your responsibilities have been? When and how did it go wrong? How did you tell your supervisor about the disappointing outcome? What was your supervisor's reaction?

e.g., "This project was assigned by my manager. My responsibilities would have been to talk to our customers about changes in scheduling of contracts and informing coworkers of the changes. It went wrong when I didn't know who to contact or what questions to ask. I told my supervisor about it in a private meeting with my plan of action to get it done. My supervisors reaction was supportive in asking how they could help."

Given that the task did not turn out as you had hoped, how would that make you feel? Please describe in as much detail as possible what your thoughts, feelings, and reactions might be as you deal with the fact that this task did not go according to plan. For example, describe what your outward physical reactions would be. Would other people be able to tell how you felt? What were your facial expressions? What about your internal reactions? What emotions would you use to describe your reaction?

e.g., "My outward physical reaction would be a little on the depressed side and I would be quieter. Other people would notice that I was quieter. Facial expressions would be subdued. Internal reactions would be disappointment and frustration."

[SUCCESS IMAGERY CONDITION]

Imagine you have been assigned a very difficult project at work. You have spent quite a bit of time over the past two weeks to accomplish this project, and in the end, it really came together exactly as you had hoped and your supervisor is clearly very satisfied with how it turned out.

Please think for a moment about what this task could have been. Describe it in detail in the space below. To help you create as vivid a description as possible, consider answering the following questions in your description: Who assigned it to you? What would your responsibilities have been? When and how did it get done successfully? How did you tell your supervisor about the good outcome? What was your supervisor's reaction?

e.g., "The project was assigned by my manager, but it came directly from the BPA administrator. I would have been asked to provide the administrator legal advice on a difficult problem with millions of dollars on the line. I worked hard, putting in extra time on research, consulting with colleagues (sic), then writing multiple drafts. The administrator was very pleased, responding with an e-mail indicating that fact. I forwarded it to my manager who came to my cubicle and told me I did a great job."

Given that you succeeded on this task, how would that make you feel? Please describe in as much detail as possible what your thoughts, feelings, and reactions might be as you realize this task went exactly as you had hoped. For example, describe what your outward physical reactions would be. Would other people be able to tell how you felt? What were your facial expressions? What about your internal reactions? What emotions would you use to describe your reaction?

e.g., "I would feel ecstatic that I was able to provide meaningful advice on an important project, and that the administrator trusted my advice. I would be tired but happy, most likely smiling and laughing."

Appendix G: Self-Efficacy Scale

To what extent do you agree or disagree with each of the following statements.

| 1 | 2 | 3 | 4 | 5 | 6 | 7 |
|-------------------|---------------------|-------------------|----------------------------|----------------|------------------|----------------|
| Strongly Disagree | Moderately Disagree | Slightly Disagree | Neither Agree nor Disagree | Slightly Agree | Moderately Agree | Strongly Agree |

SET 1: Following Professional Experience Imagery Manipulation

1. I can always manage to solve difficult conflicts if I try hard enough.
2. If someone opposes me, I don't know whether I'll be able to find a means and ways to get what I want. (Reverse Scored)
3. It is easy for me to stick to my aims and accomplish my goals.
4. I worry about my ability to deal effectively with unexpected events. (Reverse Scored)
5. Thanks to my resourcefulness, I know how to handle unforeseen situations.
6. Whatever comes my way, I'll come out okay because of my ability to handle difficult situations.

SET 2: Following Affirmation Manipulation

7. I am unsure whether I'll be able to find solutions when confronted with a conflict. (Reverse Scored)
8. No matter what comes my way, I believe I'll be able to handle it.
9. When I am confronted with a problem, I can usually find several solutions
10. If I am in trouble, I can usually think of something to do.
11. I'm not sure I'll be able to accomplish my goals if difficulties get in the way. (Reverse Scored)
12. I can remain calm when facing difficulties because I can rely on my coping abilities.

Appendix H: Affirmation Manipulation

Directions:

We're interested in how people think about important roles in their lives. Spend some time thinking about **how** and **why** being a parent (developing your career at BPA) is or will be important to you. In the space below, please describe your thoughts on this.

As you answer, focus on your thoughts and feelings, and don't worry about spelling, grammar, or how well written it is.

Again, think about being a parent (developing your career at BPA). List the top two reasons why this is or will be important to you.

1.

2.

Circle how much you agree or disagree with each of these statements.

1. Being a good parent (now or in the future) is an important part of my self-identity. (OR Having a successful career at BPA is an important part of my self-identity.)

| | | | | | |
|----------|----------|----------|----------|-------|----------|
| Strongly | Disagree | Somewhat | Somewhat | Agree | Strongly |
| Disagree | | Disagree | Agree | | Agree |

2. Overall, being a parent (now or in the future) has a big effect on how I feel about myself. (OR Overall, my career at BPA has a big effect on how I feel about myself.)

| | | | | | |
|----------|----------|----------|----------|-------|----------|
| Strongly | Disagree | Somewhat | Somewhat | Agree | Strongly |
| Disagree | | Disagree | Agree | | Agree |

Appendix I: Work Engagement Scale, Life Satisfaction, Spousal Support, Chore Responsibility

Work Engagement (Dedication subscale)

From:

Schaufeli, W. B., Bakker, A., & Salanova, M. (2006). The measurement of work engagement with a short questionnaire: A cross-national study. *Educational and Psychological Measurement*, 66, 701–716.

Please respond to the following items using the scale below, according to how you feel about your career at BPA **right now**.

| 1 | 2 | 3 | 4 |
|------------|----------|----------|--------------|
| Not at all | Not very | Somewhat | Very much so |

1. I am enthusiastic about my job.
2. My job inspires me.
3. I am proud of the work that I do.

Job Involvement

From: Reeve, C. L., & Smith, C. S. (2001). Refining Lodahl and Kejner's job involvement scale with a convergent evidence approach: Applying multiple methods to multiple samples, *Organizational Research Methods*, 4, 91 – 111.

Please indicate the extent to which you agree with each of the statements below feel about your career at BPA **right now**.

| 1 | 2 | 4 | 6 | 7 |
|-------------------|----------|----------------------------|-------|----------------|
| Strongly Disagree | Disagree | Neither Agree nor Disagree | Agree | Strongly Agree |

1. The major satisfaction in my life comes from my job.
2. The most important things that happen to me involve my work.
3. I live, eat, and breathe my job.
4. I am very much personally involved in my work.

Life Satisfaction (by role)

Worded similarly to:

Uebelacker, L. A., & Whisman, M. A. (2006). Moderators of the association between relationship discord and major depression in a national population-based sample. *Journal of Family Psychology*, 20, 40 – 46.

Before each separate life scale, participants will be asked to consider that particular aspect of their life for a few moments before answering the questions about each.

Please respond to each of the following items using the scale below. To begin, please think about your life in general for a few minutes. How satisfied or dissatisfied are you with your life at the present time and why. Press the button below to continue when you are ready once it becomes active.

| | | | | |
|-------------------|----------|----------------------------|-------|----------------|
| 1 | 2 | 4 | 6 | 7 |
| Strongly Disagree | Disagree | Neither Agree nor Disagree | Agree | Strongly Agree |

Career Life:

Please think about your work life at BPA for a few minutes. How satisfied or dissatisfied are you with your work life at BPA at the present time and why. Press the button below to continue when you are ready once it becomes active.

1. On the whole, I am satisfied with my work life.
2. I feel that so far in my work life I have been successful.
3. Thinking about my work life generates anxiety.
4. In general, I feel that my work life is rewarding.

Parent Life: (these questions will take two forms. For participants who are not parents, they will take the form of satisfaction with current parental status as not a parent. For participants who are parents they will read as follows.

Yes Parent:

Please think about your life as a parent for a few minutes. How satisfied or dissatisfied are you with your parental life at the present time and why.

1. On the whole, I am satisfied with the parent aspect of my life.
2. I feel that so far in my life as a parent I have been successful.
3. Thinking about my life as a parent generates anxiety.
4. In general, I feel that my life as a parent is rewarding.

No Parent:

Please think about your life as not a parent at the current time for a few minutes. How satisfied or dissatisfied are you with not being a parent at the present time and why.

1. On the whole, I am satisfied with not being a parent at the present time in my life.
2. I feel that so far in my life not being a parent is a positive thing.
3. In general, I feel that not being a parent at this time in my life generates anxiety.
4. In general, I feel that not being a parent at this time in my life is rewarding.

Marriage/Significant other relationship:

Please think about your marriage/significant other aspect of your life for a few minutes. How satisfied or dissatisfied are you with your marriage/significant other aspect of your life at the present time and why (this can include being single; the question then is how satisfied or dissatisfied you are with being single).

1. On the whole, I am satisfied with the marriage/significant other aspect of my life.
2. I feel that so far the marriage/significant other aspect of my life has been successful.
3. Thinking about my marriage/significant other aspect of my life generates anxiety.
4. In general, I feel that the marriage/significant other aspect of my life is rewarding.

Spousal support for work

Adapted from: Gudmunson, C.G., Danes, S. M., Werbel, J. D., Teik-Cheok Loy, J. (2009). Spousal support and work family balance in launching a business. *Journal of Family Issues*, 30, 1098 – 1121.

| 1 | 2 | 4 | 6 | 7 |
|-------------------|----------|----------------------------|-------|----------------|
| Strongly Disagree | Disagree | Neither Agree nor Disagree | Agree | Strongly Agree |

1. My spouse gives me the moral support I need to succeed in my career.
2. I could go to my spouse if I were feeling down about my career.”

Chore Responsibility

We are interested in people's perceptions of how much responsibility they have for various household chores. For each item below, you will be asked to estimate approximately what proportion of each chore you take care of, and how much your significant other takes care of (if applicable), and how much others take care of (e.g., hired cleaning services, other family members, etc.) Please make sure that your estimates **total 100%**.

| | YOU | SPOUSE/ SIGNIFICANT OTHER | OTHER RESPONSIBLE PERSON/PEOPLE |
|--|---------|---------------------------------|---------------------------------------|
| Housecleaning (dishes, vacuum, dusting, etc.) | _____ % | _____ % | _____ % |
| Childcare (including transportation, arranging for childcare, doctor appointments; if you are not a parent you may put "0" in each box) | _____ % | _____ % | _____ % |
| Household Finances (including doing taxes, paying bills, budgeting) | _____ % | _____ % | _____ % |
| Meal Preparation (including cooking, grocery shopping, etc.) | _____ % | _____ % | _____ % |

Appendix J: Training Module/Debriefing

Participants completed this section directly following the research portion of Study 2, via the web. Their quiz answers were checked against the correct answers before allowing them to move on to the next section, but they were not recorded.

(1)

Implicit Knowledge

Implicit knowledge is critical to successfully comprehending and navigating our world. For example, read the passage below. Can you figure out what it is about? How well could you remember the passage if asked recall it?

The procedure is actually quite simple. First, you arrange things into different groups. Of course, one pile may be sufficient, depending on how much there is to do. If you have to go somewhere else due to lack of facilities, that is the next step; otherwise you are pretty well set. It is important not to overdo things. That is, it is better to do too few things at once than too many. In the short run this may not seem important but complications can easily arise. A mistake can be expensive as well. At first the whole procedure will seem complicated. Soon, however, it will become just another facet of life. It is difficult to foresee any end to the necessity for this task in the immediate future, but then one never can tell. After the procedure is completed one arranges the materials into different groups again. Then they can be put into their appropriate places. Eventually they will be used once more and the whole cycle will then have to be repeated. However, that is part of life.

(2)

Now, reread the passage, but this time with the title included.

How To Do Laundry

The procedure is actually quite simple. First, you arrange things into different groups. Of course, one pile may be sufficient, depending on how much there is to do. If you have to go somewhere else due to lack of facilities, that is the next step; otherwise you are pretty well set. It is important not to overdo things. That is, it is better to do too few things at once than too many. In the short run this may not seem important but complications can easily arise. A mistake can be expensive as well. At first the whole procedure will seem complicated. Soon, however, it will become just another facet of life. It is difficult to foresee any end to the necessity for this task in the immediate future, but then one never can tell. After the procedure is completed one arranges the materials into different groups again. Then they can be put into their appropriate places. Eventually they will be used once more and the whole cycle will then have to be repeated. However, that is part of life.

Hopefully the passage was easier to comprehend and make sense of the second time you read it.

This is an example of the constructive purposes implicit knowledge serves. Once we know the organizing theme for the passage (doing the laundry) we can fill in the specific description with all sorts of unstated details that make the passage easy to understand. We use a whole host of implicit knowledge, information that we have acquired over a lifetime about how the world works, in order to make sense of the passage. Navigating our world would be a much more time consuming and mentally taxing endeavor without that implicit knowledge.

(3)

Psychologists talk about the automaticity of much implicit knowledge. By this they mean that implicit knowledge is often automatically activated and used. Automatic mental processes have three signature characteristics:

(1) Operates without awareness.

In the laundry example, had you simply read the passage with the title, you likely would be unaware of all the background knowledge you brought to mind to help you understand the passage. It is only when you try to comprehend it without the title that it becomes clear how much other shared cultural knowledge you need in order to make sense of the passage.

(2) Requires little or no mental effort.

Because this implicit knowledge is so well learned and integrated into our knowledge of the world, it takes little or no effort to activate and use it. The title, "How To Do Laundry" activated all sorts of information in your brain but because it is so well practiced and accessible it should not have interfered with a simultaneous cognitive task such as remembering a phone number someone just gave you.

(3) Operates without intention.

Bringing to mind all that implicit knowledge about how to do the laundry once you had the title occurred without you having to willfully decide, "Oh, I better activate all I've learned about doing laundry." Rather that information sort of just pops into your head whether you intend it to or not.

(4) Section 1 Quiz

When do people use implicit knowledge?

- **Every day, in all sorts of tasks.**
- Usually only when there is no other information available.
- Only when they are children.

Which one of the following statements is TRUE?

- Trying to do other sorts of mental tasks while using implicit knowledge is difficult.
- People know whether or not they use implicit knowledge while making decisions.
- **Implicit knowledge can be activated in the mind as a result of things around us, and does not have to be "turned on" on purpose.**

(5)

Implicit Knowledge of Social Groups

We have associations about all sorts of aspects of our lives.

- One particular class of associations that psychologists worry about is associations regarding various social groups; that is, stereotypes.
- Just as we learn through our culture about the process of doing laundry and store all sorts of implicit knowledge regarding this task in memory, we also learn through our culture about typical characteristics or behaviors associated with social groups.

- Like other implicit knowledge, these associations can be helpful with respect to comprehending and understanding our world. But they also have the potential to do damage by affecting our expectations and perceptions of our social world, often without any awareness or intention of their doing so.

(6)

Explicit forms of discriminatory behavior on the basis of social category membership are clearly frowned upon by our society, and in most cases illegal in a work place setting. So deciding not to hire someone or to promote someone because you believe their group is somehow inferior clearly violates the law.

These forms of explicit discrimination can be difficult to prove because they require a demonstration of intention to discriminate. Some more recent cases have argued that discrimination was caused by the unintentional operation of implicit knowledge (i.e., stereotypes) and that this is as detrimental to workers in terms of outcomes as the intentional use of explicit stereotypes.

(7)

The goal of this training exercise is to demonstrate the existence of these sorts of implicit associations that may very well operate in a work setting and affect perceptions and expectations regarding workers **even when there is no intention whatsoever** to have them do so.

(8) Section 2 Quiz

What effect might implicit knowledge have as we interact with others?

- It might affect how much we like someone we meet, but we have to choose to activate implicit knowledge in order for it to do so.
- **Implicit knowledge might influence the expectations we have about the behavior of others.**
- Implicit knowledge will not have an effect on our interactions; it only contains associations about laundry.

Where do researchers believe implicit associations about social categories come from?

- **From repeated exposure to cultural associations.**
- They are passed on genetically.
- From textbooks.

(9)

Why is understanding implicit knowledge important?

Implicit associations operate in a number of areas, especially in interactions between people. Some important types of interactions where implicit associations might operate are those involving social categories such as race, gender and social class. Knowing that implicit associations operate across all of these types of interactions gives us an additional lens through which to examine existing sociological trends.

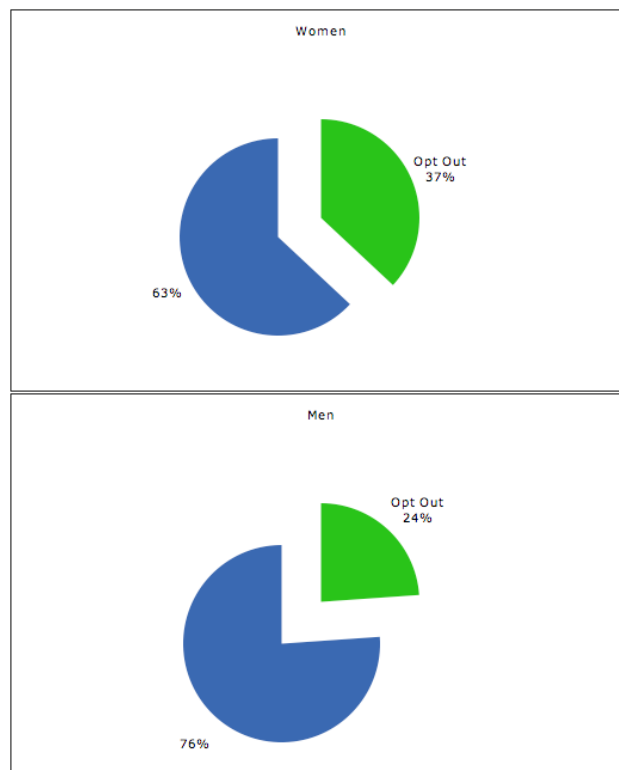
One area of particular interest in the workplace is the difference between men and women in how they experience professional life. As we will see, the operation of implicit associations pairing women with childcare and men with the professional work world may contribute this difference.

To understand how implicit associations might play into this phenomenon, let's first take a look at what the current state of affairs is.

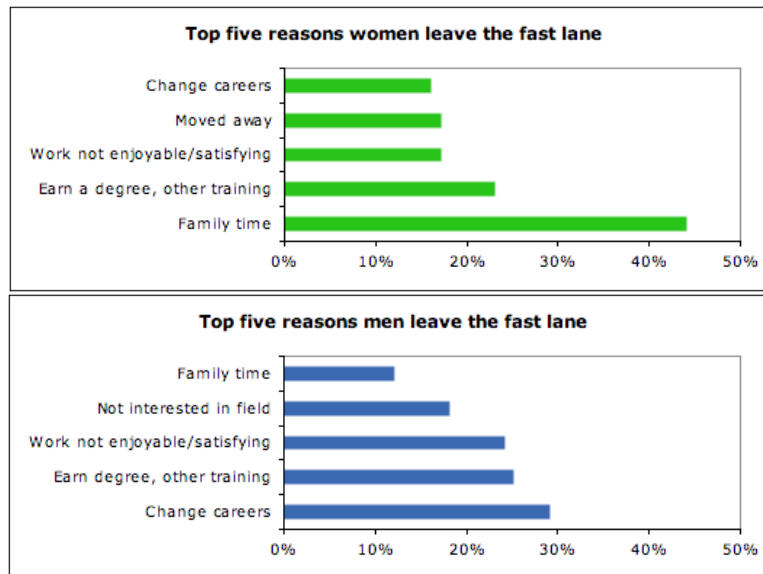
(10)

It turns out that although participation by women in the labor force has increased dramatically, women still leave or take time out at rates much higher than men and they often cite childcare responsibilities as a primary reason for doing so. Take a look at the graphs below to see the differences between men and women in their experience along the "career fast track".

A nationally representative survey of 2,443 "highly qualified women" (i.e., women who have either a graduate degree, a professional degree or a high-honors undergraduate degree) and 653 men asked: Have you ever taken a voluntary time out from work? 37% of the women had, compared with only 24% of men. As reported in: Hewlett, S. A., & Luce, C. B. (2005). Off-ramps and on-ramps: keeping talented women on the road to success. *Harvard Business Review*, 83, 43-54.



Of those who had taken time off, the top reason for women to do so was in order to have more family time, whereas men took time off most often for career reasons.



Moreover, among the women who stay, there appears to be some pressure to choose between work and family. The number of children for these women is often much lower, and they are less likely to be married than men or women who take time out.

(11) Section 3 Quiz

Which of the following statements is TRUE?

- Men leave their careers at a higher rate than women.
- **The number one reason highly qualified women cite for leaving their careers is "Family Time".**
- Men do not leave their careers as a result of needing "Family Time".

Based on the results of the study reported on the previous page, choose the statement that is FALSE.

- **Men never have to choose between work and family.**
- Women who remain in their careers are less likely to be married or have children than those who opt out of their careers.
- Women and men have some of the same reasons for leaving the "fast track".

(12)

How Do Implicit Associations Operate?

Before examining how implicit associations help us understand trends like this, it helps to get a sense for how implicit associations are measured.

In the study you completed before, you completed a GO/No-GO task. This type of task has been used to measure implicit associations across a variety of domains. Let's take a look at how this task can help us measure implicit associations and understand how they operate.

- Implicit associations are measured by how easily two categories "go together" in the mind. For example, people generally pair *flowers* with *good*, whereas *insects* are generally paired with *bad*.
- The GO/No-GO Task allows measurement of exactly how easily pairs of categories go together by examining how many errors are made to a given pairing.
- The more strongly a pair of categories is implicitly associated with other (that is, to the extent that implicit knowledge indicates *insects* go with *bad* and *flowers* go with *good*) the task should be easier and people should make fewer errors.
- When two categories do not go together very well in terms of *implicit associations* (for example, *insects* do not go with *good*), the task will be harder and a larger number of errors will be made.

So, to understand the different experiences of men and women in the workplace for example, we first need to know whether implicit associations exist that could serve as a driving factor in this phenomenon.

(13)

Research using the GO/No-GO Task has shown:

- *mom* went more strongly with *parent* than *dad* did
- *dad* went more strongly with *professional* than *mom* did
- *mom* went more strongly with *parent* than with *professional*
- *dad* went more strongly with *professional* than with *parent*

This latter finding is particularly striking given that by definition, a dad is a parent, and yet thinking about the category *dad* more easily brings to mind *professional* associations than childcare associations.

(14)

In addition, we also examined how likely the roles of *mom* and *dad* were to come to mind respectively when thinking about *women* or *men*.

- *Women* was strongly associated with *mom*
- This pairing was stronger than the association between *men* and *dad*

Thus, the role of mom seems to be more inherently tied to being a woman than the role of dad is to being a man. When people think about women, they are more likely to also think *mom*, compared to how likely they are to think *dad* when considering men.

(15)

Finally, we examined implicit associations pairing men and women with the roles of *parent* and *professional*. As you might expect by now:

- *women* were more strongly associated with *parent* than *men* were
- *men* were more strongly associated with *professional* than *women* were.

These results have implications for other types of interactions in the workplace beyond gender relations.

- For example, implicit associations can be found in areas that workforce diversity programs typically deal with (such as religious diversity or race relations).
- Additionally, they could also apply to the understanding of assumptions that people make about the typical traits that relate to certain careers. Think about how you would describe the "typical" engineer or accountant -- do you think your description would be similar to those of others? These descriptions are likely driven in part by implicit associations.

(16) Section 4 Quiz

Based on the research we told you about in the last section, what categories seem to be strongly associated?

- **Women and Childcare**
- Childcare and Work
- Men and Women

What does the GO/No-GO Task measure?

- Sexism
- Ability to play video games
- **Implicit Associations between different pairs of categories**

(17)

Do Implicit Associations have an impact on decisions? A case study

That such implicit associations exist and come easily to mind suggests that these have the potential to affect our perceptions of how the world "ought" to work both when considering expectations for others as well as ourselves.

Our research has found that when people are asked to make judgments about how men versus women should handle a conflict between work and family, the strength of their implicit associations between *women* and *childcare* and *men* and *work* predicted the decisions they made.

- When the main character in the scenario was a woman, those with strong implicit associations suggested that she could best resolve the conflict by putting family first (e.g., leaving to pick up the sick child).
- But when the main character was male, these participants suggested he could best resolve the conflict by putting work first (e.g., either have the child wait until after the presentation or find someone else to pick her up).

(18)

Do Implicit Associations affect how people think of themselves?

With respect to self-perceptions, in a GO/No-GO task similar to the one you performed, we found that:

- Women experience greater shifts in their self-perceptions as they move from thinking about themselves in the parent versus work domain. It is as if they have to construct a different sense of self in one domain versus the other.
- For men, their self-associations remain more stable as they move back and forth between the two domains.

(19) Section 5 Quiz

How are the self-associations of women different from those of men?

- **Women have less stable self-associations than men**
- Men have no self-associations for work

- They are not different; self-associations of women and men for the roles of parent and work are the same.

Can implicit associations affect the expectations that we have of how people "ought" to behave?

- No, never.
- **Yes, they might influence how we judge the choices people make or the behavior that they engage in.**
- Maybe, but research has not yet revealed any evidence that they do.

(20)

Implicit Associations at Work

- In sum, implicit knowledge or implicit associations guide our thinking and ability to make sense of the world.
- They may also act as filters in ways we would deem less than optimal.
- They might affect perceptions of others in the workplace. For example, implicit associations might influence decisions about who should be assigned a job that involves a lot of travel. (Are women expected to be able to travel less due to their family responsibilities?) Or, implicit associations could affect judgments of how committed a given worker is to his or her job.
- In addition, they may affect our self-perceptions and expectations for ourselves.

(21)

Implicit Associations at Bonneville

Where might implicit associations show up in Bonneville?

- Implicit associations can affect interactions between two people on the same level (such as conversations you have with a coworker).
- Implicit associations can affect interactions across power levels (such as negotiations an employee has with a supervisor).
- Implicit associations can affect interactions between a supervisor and his or her team.
- Importantly, implicit associations can affect decisions that are made about workplace policy and procedure.

The fact that implicit associations have this wide-ranging influence is not necessarily a bad thing. Think back to the laundry example -- an organization would probably grind to a halt without the use of implicit knowledge. However, it is important that people are aware of the effects implicit associations can have so that they can avoid biased outcomes. We will consider how to avoid such outcomes in the next section.

(22) Section 6 Quiz

Are implicit associations always bad?

- Yes, because they always lead to biased decision-making
- Yes, because they make people unable to be objective.
- **No, just because implicit associations are all around us does not mean that they always have negative consequences.**

How might implicit associations operate negatively in the workplace.

- They could affect hiring and promotion decisions.
- They could be unintentionally built into workplace policy.

- **Both of the above options.**

(23)

How can we guard against bias?

Things you can do as an individual

In terms of how the information in this tutorial might be used in your immediate workplace: in part just knowing that implicit associations exist and affect social perception will be helpful. In addition, if you find yourself wondering whether your reaction to a co-worker might be influenced by implicit associations between the genders and the roles of parent and work, you can try a mental simulation where you switch the gender and/or the parental status of that co-worker. Say you find yourself wondering whether "Michelle" is up for a demanding assignment. So if you change "Michelle" to "Michael" with all of Michelle's abilities, and now ask whether "Michael" would be up for the assignment -- does the conclusion change? If so, there is good cause to worry that implicit associations are affecting your judgments.

Things you can do through process design

These mental simulations are not always easy for individual people to do. So in addition, making sure that day-to-day processes are set up in a standardized manner at the workplace can help ensure that any implicit biases are less likely to have an impact on decision-making. For example, it's easier to avoid implicit associations affecting your decision about who to promote if the process is structured and consistent such that it does not rely on the "gut" feelings of personnel.

Things you can do as an organization

The organization as a whole has many opportunities to examine itself for possible bias and the negative effects of implicit associations. Tracking diversity statistics and trends can reveal biases in the selection and promotion processes, as well as retention problems that may indicate cultural bias. In addition, policies should be analyzed for unintended consequences, particularly if they were developed some time ago when norms and culture may have been different. Finally, understanding workplace culture generally can help to identify and eliminate any possible biases that it may encourage.

(24) Section 7 Quiz

What does merely knowing about implicit knowledge do to help avoid its negative effects?

- Nothing, knowing about implicit knowledge does nothing to counteract its effects.
- **Merely knowing about it helps one become aware of all the influences on his or her decisions.**
- Merely knowing about it makes people unbiased.

What sorts of processes help people avoid using implicit biases in their decisions?

- Processes based on "gut feelings".
- **Structured, standardized processes.**
- Those where only one person is in charge.

(25) Debriefing

You are done and your name has been recorded for 1 hour of Diversity Training credit! You should receive an email confirmation shortly.

In the tasks you performed we are interested in whether men and women use these two domains (work versus family) in different ways to help them deal with a failure in order to repair their sense of "self", with the possibility that this may eventually lead to a distancing of the self from the work or parent domain.

Some people were asked to think about failing at a task and others were asked to think about succeeding. We then asked you to think about why one of the two roles (parent or work roles) was important to you. This sort of task has been used in the past to help people feel better about themselves following a failure experience. We then measured your strength of association with the two roles, and also measured your sense of self-efficacy (your sense of your ability to master your world).

Of interest is whether thinking about the parent role following a failure experience for women leads them to more strongly associate themselves with that role, and to disassociate with the work role, whereas men are less likely to do this. Also, this stronger association with the parent role may serve to make women feel better (or score better on the self-efficacy questions) than thinking about the work role.

Finally, although we would like very much for you to encourage your colleagues to sign up for this study, please refrain from discussing specifics with them as it is important for people to come into the study knowing only what it is generally about, so as not to bias their responses.