Long work hours: a social identity perspective on meta-analysis data

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Summary   The current study utilizes social identity theory to investigate employees' work hours. Specifically, we use meta-analysis to examine the relationships between hours worked and indicators of organizational identity (e.g., organizational support and tenure), occupational identity (e.g., human capital investments and work centrality), and family identity (e.g., family responsibilities and family satisfaction). The meta-analysis also allowed us to explore other important correlates of hours worked (e.g., situational demands, job performance, mental health, and physical health), moderating variables (e.g., age, gender, and job complexity), and curvilinear relationships of work hours to social identity indicators. Overall, we found that occupational factors and situational demands had the strongest relationships with hours worked, hours worked were negatively associated with measures of employee well-being, gender had several significant moderating effects, and there were curvilinear relationships between hours worked and well-being and work–family conflict variables. The article concludes with directions for future theoretical and empirical research. Copyright © 2008 John Wiley & Sons, Ltd.

Introduction

Employees in industrialized nations, particularly the United States, are working increasingly long hours (Brett & Stroh, 2003). For instance, the International Labor Office (2006) reported that the proportion of American employees working at least 40 hours per week has increased over the last decade (1996–2006) and that the US now has the second largest share of people working at least 40 hours per week (76.6 per cent) among developed economies. Further, Reynolds (2004) found that, compared to other developed countries, the United States has the greatest percentage of workers whose *preferred* number of work hours was greater than the number of hours they *actually* worked. There are several reasons why the topic of long work hours warrants further research attention.

First, the changing nature of careers is likely to contribute to even longer work hours in the years ahead (Reynolds, 2004). After several rounds of downsizing and consolidation, employees' workloads have increased, thereby creating greater demands for employees to work longer hours (Sullivan, 1999). The boundaries between work life and personal life have also become more blurred (Fletcher & Bailyn,

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1996). With advances in technology (e.g., internet and telecommunication), more employees are able to work outside the traditional office space and outside the traditional nine-to-five-workday (Cooper, 1998). These changes in the career landscape, too, have created new opportunities for employees to devote more time to work.

Second, how long employees work may directly affect organizational productivity. While long work hours may increase employees' output in the short run, long work hours may lower organizational productivity over the long haul, particularly in cases where employees' attention to detail and physical exertion are crucial to task success (Porter, 1996). Moreover, excessive dedication of time and energy to work activities may adversely affect employees' work–family balance and reduce their physical and mental health (Robinson, Flowers, & Carroll, 2001; Spence & Robbins, 1992). Thus, we need a better understanding of the conditions under which long work hours enhance productivity or hurt employee well-being.

Third, while several theoretical frameworks have been proposed to explain work motivation and commitment, there are few overarching theoretical frameworks which have integrated the myriad findings associated with long work hours. In this review, we use social identity theory (Stryker, 1980; Tajfel & Turner, 1985; Vignoles, Regalia, Manzi, Colledge, & Scabini, 2006) to understand how individuals' (sometimes conflicting) identities influence the number of hours employees put into their jobs. Social identity theory, then, might be helpful not only in integrating previous findings on the topic but also in providing a comprehensive theoretical perspective to guide future research.

The purpose of this study, then, is to understand the factors that contribute to longer work weeks and the relationships among hours worked, job performance, and employee well-being. In the following section, we define the core variable of interest, work hours, and briefly introduce the key tenets of an identity framework outlined by Meyer, Becker, and Van Dick (2006). Then, we use this framework to posit relationships between hours worked and factors primarily associated with organizational identity (e.g., organizational support and tenure), occupational identity (e.g., human capital investments and work centrality), and family identity (e.g., family responsibilities and family satisfaction). Next, we use meta-analysis to test those hypotheses, to examine some other important variables frequently investigated in this nomological network (e.g., situational demands and employee well-being), to consider potential moderating variables (age, gender, and job complexity), and to identify any curvilinear relationships involving long work hours. In the final section of the paper, we conclude by identifying major patterns of results and suggesting avenues for future research.

The Construct of Work Hours

Theoretical and empirical definitions

The core variable of interest in this study is hours worked each week, which we define as the number of hours employees devote to all work-related activities (e.g., customer service encounters, communicating with clients or colleagues through emailing, and attending team meetings). This core variable includes both hours put in at the place of business and hours put into work in other settings, such as the home. It is not surprising that most research to date has used self-reported measures of work hours, since individuals themselves are usually the only viable source of information about how much work takes place outside of the formal worksite and ''normal'' work hours.

Further, our definition of work hours here includes both non-discretionary hours (e.g., those demanded by contract or employment agreement) and discretionary hours (e.g., those put in by

employees to advance their own careers more quickly) for two reasons. First, it is typically the total *amount* of time dedicated to work that is of interest to researchers on work hours. For instance, long work hours (whether they are discretionary or non-discretionary) are believed to be a key cause of work–family conflict (Day & Chamberlain, 2006; Ng, Sorensen, & Feldman, 2007). More generally, the implicit concern among scholars and practitioners alike has been that *long* or *lengthening* work weeks are eroding the quality of individuals' lives. As such, most organizational studies that examine the relationships among work hours, employee well-being, and productivity use inclusive measures of work hours, and these studies form the major basis of the present meta-analysis.

Second, accurately measuring discretionary and non-discretionary hours is difficult in practice because different employees may have vastly different interpretations of what tasks are discretionary and non-discretionary (Morrison, 1994). For instance, some workers may perceive that working late is required and therefore non-discretionary, while other workers may believe that staying late goes beyond prescribed job duties and is therefore discretionary. In much of the work hours literature, there has been an implicit preference to focus on discretionary hours because the working assumption has been that the links between attitudes and behaviors are strongest when the behaviors being measured are discretionary in nature. Certainly in the identity literature we draw upon, the assumption has been that employees who strongly identify with their organizations are willing to dedicate more discretionary hours to work. In practice, though, it is hard to separate discretionary hours from non-discretionary hours in reliable ways.

We also want to emphasize here that we will be focusing on the total *quantity* of weekly work hours. This operationalization of work hours is the one most frequently used in this literature. *Quality* of work performed during those hours has typically been unmeasured in this literature, although the common assumption has been that longer work hours lead to higher productivity. Issues surrounding declines in work quality and productivity that might accompany long work hours have been most directly addressed in previous empirical studies and meta-analyses on job design, job stress, and burnout (e.g., Brown, 1996; Fried & Ferris, 1987; Wagner, Ferris, Fandt, & Wayne, 1987; Visweswaran, Sanchez, & Fisher, 1999).

Causality

In the present paper, we provide a synthesis of previous research on the relationships between work hours and the myriad factors with which it has been associated. Much of that previous research has been cross-sectional in nature and, as such, conclusions about causation cannot be made. Consequently, our goal in this regard is to place long work hours within its nomological network and to understand why non-zero relationships between the variables examined are likely to occur. For this reason, we have not referred to these correlates as either antecedents or consequences of hours worked.

Theory

Recently, Meyer et al. (2006) proposed an identity-commitment approach to studying organizational issues. Identity is the subjective concept an individual has of himself or herself as a person (Vignoles et al., 2006). Meyer et al. (2006) suggest that individuals develop identities based on their social roles or, more generally, on the basis of their group memberships (e.g., as a team member, an organizational member, as a professional accountant, as a parent, etc.).

Salient group identities emerge when group memberships are built upon shared values, mutual respect, and internalized beliefs (Hornsey & Hogg, 2000). Salient identities are long-lasting in duration

and have effects on a wider array of behaviors. Thus, for adults who strongly identify with their organizations because of deeply shared values, those organizational identities are salient and help shape virtually every decision they make in their lives, both professionally and personally.

Furthermore, a salient identity is likely to be associated with stronger commitment to a social group and stronger motivation to perform well for that social group. Meyer et al. (2006) suggest that this relationship occurs because those who are deeply committed to a group accept that group's values and perceive the group goals as ideals to be achieved, promoting greater willingness to exert effort on behalf of that social group. For instance, Brown (1996) observed in a meta-analysis that organizational commitment is strongly related to job involvement (0.50).

Meyer et al. further suggest that when identities are reinforcing, the resulting commitment to the relevant social groups—and the effort exerted on their behalf—will be especially high. For instance, when employees are highly committed to both their professions and organizations, individuals are likely to engage in more citizenship behaviors on behalf of both social groups. On the other hand, strong identification with one group can dilute identification with another group (Kreiner & Ashforth, 2004; Stryker & Serpe, 1982). For instance, an individual who has a salient identity as a union member is likely to feel less strongly identified with his/her employer and may be less willing to contribute to the organization beyond what the union contract requires.

This identity-commitment perspective proposed by Meyer et al. (2006) provides a theoretical foundation with which to examine the nomological network of work hours. Meyer et al.'s (2006) framework emphasizes that discretionary work behaviors will be strongly affected by both the intensity of employees' various social identities and their relative salience rather than by any single social identity *per se*. This perspective is also consistent with what sociologists have discovered about the behavioral consequences of salient identities in general, namely, that individuals are likely to spend more time on those activities that validate and reinforce their salient social identities the most (Burke & Reitzes, 1981; Callero, 1985; Leary, Wheelers, & Jenkins, 1986; Stryker & Serpe, 1982).

The present study focuses on *organizational identity*, *occupational identity*, and *family identity* in particular. We expect that those factors which increase the salience of organizational identity or occupational identity (relative to family identity) are likely to be associated with more hours spent at work. Conversely, those factors which increase the salience of family identity (relative to organizational and occupational identities) are likely to be associated with fewer hours spent at work. While we are not presenting a full test of Meyer et al.'s (2006) propositions here, we believe that their framework provides us with a fruitful, overarching theoretical perspective for examining the relationships of social identities to hours worked.

Hypotheses

Organizational identity

Identification with the organization is said to exist when individuals define themselves in terms of what they believe their organization represents (Kramer, 1993; Kreiner & Ashforth, 2004; Stryker & Burke, 2000). Consequently, we expect that individuals with a salient organizational identity are more likely to exert more effort and to work longer hours to help the organization attain its goals and to enhance its stature (Foreman & Whetten, 2002; Haslam, Eggins, & Reynolds, 2003; Riketta, 2005). Rousseau (1998) notes that two of the major ways in which firms evoke organizational identification are demonstrating care and support for employees and reinforcing the advantages of organizational membership.

Demonstrating care and support

Employees who perceive that they are valued and respected by their organizations are likely to reciprocate with greater emotional engagement and dedication of more time to ensure organizational goals are met (Blau, 1964; Wayne, Shore, & Liden, 1997). There are a variety of ways that organizations can demonstrate care and support for employees in order to build organizational identification. Here we examine the four that have been most frequently studied in the literature: *job security, general organizational support, job autonomy*, and *opportunities for learning*.

The first two variables (job security and organizational support) reinforce the salience of organizational identity by providing employees with more extrinsic rewards and tangible assistance, thereby increasing individuals' sense of obligation to reciprocate with harder work and longer work hours (Coyle-Shapiro & Neuman, 2004; Eisenberger, Huntington, Hutchison, & Sowa, 1986). For instance, Rhoades and Eisenberger (2002) found in their meta-analysis that organizational support was significantly related to job involvement. On the other hand, the second two variables (job autonomy and opportunities for learning) increase the salience of organizational identity by providing employees with more intrinsic rewards, thereby making the act of working longer on behalf of the organization more pleasurable (Fried & Ferris, 1987; Ng, Butts, Vandenberg, Dejoy, & Wilson, 2006; Vandenberg, Richardson, & Eastman, 1999).

> *Hypothesis 1*. Job security (H1a), organizational support (H1b), job autonomy (H1c), and opportunities for learning (H1d) are positively related to employees' hours worked.

Reinforcing perceived advantages of organizational membership

Firms can also enhance the salience of organizational identity by reinforcing employees' perceptions of the advantages of organizational membership (Meyer et al., 2006; Rousseau, 1998). Favorable perceptions of organizational membership emerge when individuals feel they have strong, common interests with the organization and share the same fate (Lipponen, Helkama, Olkkonen, & Juslin, 2005). Here, we suggest that *organizational tenure* and *job level* both enhance the salience of organizational identity and, in so doing, induce employees to work longer hours.

Long organizational tenure is a signal of dedication and loyalty to a company (Wagner et al., 1987). Furthermore, years of service bolster individuals' perceptions of the attractiveness of their current employers and, via cognitive dissonance and other memory distortions, the correctness of their earlier organizational choice decisions (Schacter, 2001). *Job level* is also likely to be associated with greater organizational identity salience because highly ranked managers may perceive themselves as more important stakeholders and more significant contributors to the firm (Cummings & ElSalmi, 1970). Further, individuals at higher job levels are likely to receive both more extrinsic rewards (e.g., pay) and more intrinsic rewards (e.g., job autonomy), thereby accentuating the advantages of organizational membership and enhancing incentives to work longer hours (Brown, 1996; Schor, 1992).

> *Hypothesis 2*. Organizational tenure (H2a) and job level (H2b) are positively related to employees' hours worked.

Occupational identity

Identification with the occupation is said to exist when the defining characteristics of a successful professional in a particular career path become the core defining characteristics of the self (Bird & Schnurman-Crook, 2005; London, 1984; Van Dick, Wagner, Stellmacher, & Christ, 2004). Because

both occupational and organizational identities are heavily rooted in work contexts, salient occupational identification is likely to reinforce salient organizational identification and *vice versa*.

Occupational identity, like organizational identity, has implications for discretionary work behaviors in general and for long work hours in particular. When individuals define their self-concepts based on the characteristics of professionals in their field, they become more motivated to behave in ways that mirror those similarities and advance their own careers (Lobel & St. Clair, 1992; London, 1984). That is, individuals with a salient occupational identity are more likely to go the extra mile to make sure that their work is done thoroughly and completed on time because it fulfills the role expectation of their profession, occupation, or trade. For instance, when students of business and economics are primed to focus their attention on the identities of ''managers'' or ''economists,'' they dedicate more effort to their respective identity-relevant tasks (Braun & Wicklund, 1988). Thus, we expect that factors which increase the salience of one's occupational identity will be related to longer work hours (Bird & Schnurman-Crook, 2005). Here we focus on three sets of factors that may especially reinforce the salience of occupational identity: *career success, career focus*, and *career investment*.

Career success

Salary and *number of promotions* are indicators of career success in terms of what Hall (1976) calls the ''external'' career (objective career achievements visible to others). In contrast, *career satisfaction* is an indicator of what Hall (1976) calls the ''internal'' career, namely, how individuals subjectively experience their career success. Both external career success and internal career success are evidence of individuals' accomplishments and, therefore, should lead people to define their self-concepts in terms of what they believe their occupations represent. In so doing, individuals who have achieved career success are likely to work longer hours to reinforce a salient occupational identity.

> *Hypothesis 3*. Current salary (H3a), number of promotions, (H3b), and career satisfaction (H3c) are positively related to employees' hours worked.

Career focus

The extent to which individuals focus on establishing their careers as a major life task is the second factor that may enhance the salience of occupational identity. Individuals who have been steadily and consistently developed their careers over time are more likely to have salient occupational identities because their career experiences have now become core, integral parts of their lives (Hansen & Sackett, 1993). For instance, Roberts and Friend (1998) found that those workers who experienced steady career growth also reported greater occupational identity.

To capture this factor, the current study examines *work centrality* and *career interruptions*. The belief that work is central to one's life (work centrality) provides substantial impetus for individuals to focus on career-building as a major life task (Noe, Noe, & Bachhuber, 1990). Consequently, we would expect that work centrality will be positively related to longer work hours, too. Conversely, career interruptions (i.e., dropping out of the workforce for extended periods of time) may inhibit the depth of career focus. Career interruptions (or what Kilty & Behling, 1985 call ''career disorderliness'') are likely to decrease the frequency and intensity of interactions individuals have with other professionals in their field and therefore decrease their level of attachment to that occupation (Hansen & Sackett, 1993).

> *Hypothesis 4*. Work centrality (H4a) is positively related to employees' hours worked. Career interruptions (H4b) are negatively related to employees' hours worked.

Career investment

Individuals who have invested more resources and energy into promoting their careers are likely to have more salient occupational identities because of escalation of commitment (Schacter, 2001). In part, that escalation is driven by a need to recoup earlier investments. For instance, London (1984) suggests that giving up something of value for one's career (e.g., time or educational expenses) is positively associated with stronger occupational identity. In addition, using a social construction of reality perspective, Young and Valach (2004) argue that goal-directed actions help individuals make sense of their past and future careers. That is, individuals look to their past behaviors to infer what their future work commitments should be (Greenhaus & Springob, 1980). Thus, high career investment in the past should be associated with employees' willingness to work more hours in the future.

The most typical form of career investment is in human capital (Becker, 1964), that is, the acquisition of knowledge and skills that are valued and rewarded in the labor market. *Education level* is the most obvious and straightforward indicator of human capital investment (Preuss, 2000). Amount of *general work experience* (Judge, Cable, Boudreau, & Bretz, 1995; Ng, Eby, Sorensen, & Feldman, 2005; Seibert, Kraimer, & Liden, 2001) is an indicator of the diversity of an individual's skills and knowledge; that diversity of experience is typically viewed as a benefit to higher-level managers and decision-makers (Podolny & Baron, 1997). Moreover, previous meta-analyses have shown that those with strong work experience are likely to have strong productivity (Quinones, Ford, & Teachout, 1995). Amount of *overseas work experience* may be particularly instrumental in building employees' human capital because it gives expatriate/repatriate employees specialized, cultural knowledge not readily available to other senior managers (Preuss, 2000).

Another factor we explore here is the impact of networking (via politicking and informal alliances) on hours worked. The literature on social capital (Podolny & Baron, 1997; Useem, 1984) suggests that these informal contacts help individuals gain access to more job opportunities and therefore enhance their career prospects. However, this networking activity also takes a much greater investment of time on the part of employees. Thus, individuals who actively network to build their social capital will likely end up dedicating more time to work.

Hypothesis 5. Educational level (H5a), general work experience (H5b), international work experience (H5c), and social networking (H5d) are positively related to employees' hours worked.

Family identity

A family identity is said to exist when individuals internalize the values or expectations associated with their family roles (e.g., being a spouse or parent) (Lobel & St. Clair, 1992). We suggest that salient family identity is likely to *reduce* one's motivation to work long hours. Social psychologists have observed that individuals with multiple salient identities often find it difficult to commit equally to all those identities simultaneously (Frone, Russell, & Barnes, 1996; Thoits, 1983). Simply put, then, given that individuals have limited time to allocate to different life domains, individuals with a salient family identity are likely to dedicate more time to family activities at the expense of work activities (Day & Chamberlain, 2006; Nuttbrock & Freudiger, 1991). There are at least two major categories of factors that may reinforce the salience of family identity at the expense of organizational and occupational identities. These are the amount of family responsibility and the amount of positive affect toward the family.

Family responsibilities

Researchers have suggested that increased role responsibilities increase the salience of a social identity (Bird & Schnurman-Crook, 2005; Lobel & St. Clair, 1992). The salience of family identity is likely to result in individuals' dedicating more resources (e.g., time and money) to family activities, with correspondingly less time devoted to work activities (Stets & Burke, 2000). Time that has to be devoted to family obligations and activities (e.g., attending family get-togethers or coaching children's sports teams), to relationships with spouses and/or children, to household chores, and to parental demands (e.g., childcare) serves to increase the salience of family identity and to decrease the number of hours that can be devoted to work.

> *Hypothesis 6.* Being married (H6a), having children (H6b), and having responsibility for household duties (H6c) are negatively related to employees' hours worked.

Favorability of family experiences

Another factor that contributes to increased salience of family identity is the favorability of family experiences. The premise here is that, when individuals have pleasurable experiences with family members, they are likely to commit themselves to additional family activities in the future. This positive reinforcing cycle simultaneously increases the salience of family identity over time and lowers the motivation to spend long hours at work (Hochschild, 1989, 1997).

Therefore, we expect that *marital satisfaction*, *family satisfaction*, and *family cohesion* will all be negatively related to hours worked, too. There is some evidence for reciprocal causality here. Edwards and Rothbard (1999) report a significant negative relationship between family satisfaction and work centrality, suggesting that employees who are unhappy at home may choose to work even more. Conversely, employees who choose to work more may experience more negative feedback from family members because they pay less attention to family matters (Hochschild, 1997).

> *Hypothesis 7.* Marital satisfaction (H7a), family satisfaction (H7b), and family cohesion (H7c) are negatively related to employees' hours worked.

Situational demands

In the preceding discussion, we focused on discretionary work hours. That is, we hypothesized that individuals with salient organizational or occupational identities (relative to family identity) are willing to work longer hours, while individuals who have a salient family identity (relative to organizational and occupational identities) are less willing to dedicate discretionary time to work. However, there are frequently occasions in which individuals operate under strong situational demands that make working more hours feel required rather than discretionary (Feldman, 2002). That is, the effects of these situational factors may be so strong that they constrain individuals from acting in identity-consistent ways. In this study, we examine two clusters of situational factors that lead individuals to perceive that working longer hours is a necessity rather than a choice driven by their chosen identities.

Organizational demands

Organizational pressures for performance, job demands, rigid work schedules, role overload, role ambiguity, and role conflict are all situational factors that require individuals to work longer hours. They impel individuals to dedicate much more energy and attention to their jobs than they desire to,

even if doing so requires them to work nights or weekends (Lochmann & Steger, 2002). When organizations expect individuals to consistently perform at high levels, when work schedules are inflexible, when individuals are required to play too many different roles at work, and when role expectations are unclear or conflicting, individuals have to work longer hours to complete their jobs.

> *Hypothesis 8.* Organizational pressures for performance (H8a), job demands (H8b), rigid work schedules (H8c), role overload (H8d), role ambiguity (H8e), and role conflict (H8f) are positively related to employees' hours worked.

Lack of social support

In much the same way, when employees lack support from coworkers and supervisors and do not receive much task assistance, there are negative consequences for the amount of time individuals have to work (Wayne, Shore, Bommer, & Tetrick, 2002). Lack of clear guidance means employees may not have specific enough goals to perform their jobs efficiently. As a result, individuals may have to spend more time ''muddling through'' their duties. The job stress literature (Ganster, Fusilier, & Mayes, 1986; Viswesvaran et al., 1999) has also shown that, when assistance from colleagues is not given, employees have to work longer hours to cope with work overload and work problems on their own. Furthermore, interpersonal conflict with colleagues and supervisors not only draws energy away from productive work, but also leaves fewer people whom an employee can rely on for help. Thus, high levels of interpersonal conflict with coworkers and supervisors are also likely to be associated with longer work hours.

> *Hypothesis 9.* Lack of supervisor support (H9a), lack of coworker support (H9b), and interpersonal conflict (H9c) are positively related to employees' hours worked.

Work hours, work behaviors, and work attitudes

Long work hours from employees may be beneficial for companies in the short run (Schor, 1992). Individuals who feel motivated or pressured to increase their work hours to get all their work done are less likely to be voluntarily *absent* from work. Assuming that workers are generally productive during those extra work hours, increased work hours can also be accompanied by greater *job performance*.

However, over an extended period of time, long work hours may be negatively associated with employee well-being, especially when individuals are forced to work longer hours by external situational constraints rather than by internally driven identities. Long work hours may deplete individuals' energy, resulting in more *job stress*, *mental strain*, and *physical health problems* (Golden & Wiens-Tuers, 2006; Tucker & Rutherford, 2005). The fatigue created as a result of long work hours may also increase the likelihood of *work injuries* (Duchon, Smith, Keran, & Koehler, 1997), since distractions and lack of focus can lead to careless mistakes. Similarly, long work hours—when coupled with high job stress—may result in *greater use of tobacco*, *alcohol*, *and drugs* on and off the job (Bachman, Safron, Rogala, & Schulenberg, 2003; Kawakami, Araki, Haratani, & Hemmi, 1993).

Too much dedication of time to work can also be negatively associated with other aspects of employees' lives, including greater work–non-work imbalance (Aziz & Zickar, 2006; Byron, 2005). For instance, work activities can negatively impinge upon family activities (*work-to-family conflict*) or family activities can negatively impinge upon work responsibilities (*family-to-work conflict*) (Edwards & Rothbard, 1999). Perceptions of work–non-work imbalance will be stronger when individuals feel

pressured to work longer hours by external demands rather than when they choose to work longer hours because of strong organizational and occupational identities.

> *Hypothesis 10.* Hours worked are negatively related to absence (H10a) and positively related to job performance (H10b).

> *Hypothesis 11.* Hours worked are positively related to job stress (H11a), mental strain (H11b), physical health problems (H11c), work injuries (H11d), and use of tobacco, alcohol, and drugs (H11e).

> *Hypothesis 12.* Hours worked are positively related to work-to-family conflict (H12a) and family-to-work conflict (H12b).

Exploratory Research Questions

Moderating effects of gender, age, and job complexity

In this meta-analysis, we also explore how gender, age, and job complexity might moderate the relationships between number of hours worked and the correlates we identified above. *Gender* is a major topic in the work hours literature because of mounting evidence that working women feel they are in a ''time bind'' at work and ''working a second shift'' at home (Hochschild, 1989, 1997). *Age* has also been investigated as a potential moderator in the work hours literature because older workers are often perceived as being less motivated by work and as preferring to spend more time with their families than at work (Lawrence, 1996). Finally, *job complexity* (or the extent to which a task requires complex skills) may also serve as a moderating variable. For instance, relationships between organizational identity factors and long work hours may be particularly strong in cases where the job skills required are complex. First, it usually takes employees more time to complete complex tasks than simple tasks. Second, complex tasks create more intrinsic motivation and entice employees to work longer hours on stimulating projects (Fried & Ferris, 1987).

   While it is not feasible to make predictions for all the specific relationships possible here, our general expectation is that the positive relationships of long work hours with factors associated with organizational and occupational identities will be stronger for men than for women (Erwins, Buffardi, Caspwer, & O'Brien, 2001; Gallos, 1989; Greenhaus & Beutell, 1985; Maume, 1999; Powell & Mainiero, 1992; Simon, 1992). At least historically, men as a group have focused more of their energy on career attainments than have women as a group; as a result, researchers have found that men are more likely to develop salient identities based on organizational and occupational membership (Biernat & Wortman, 1991; Kirchmeyer, 2002). On the other hand, we expect the negative relationships between family variables and hours worked will be stronger for older adults than for younger adults. As individuals age and enter mid- and late-career stages, they are more likely to view family relationships as a higher priority in their lives (Feldman, 2002; Wagner et al., 1987). Further, we expect that the relationships between organizational or occupational variables and work hours will be stronger for those individuals with highly complex jobs (Hochschild, 1989). Highly complex jobs tend to activate intrinsic motivation; that intrinsic motivation, in turn, often results in both greater sense of commitment to workplace identities and a greater time commitment to work (Wallace, 1997).

Curvilinear effects

Finally, we explore whether the relationships we have examined may be curvilinear in nature. Most of the prior research in this area has either assumed or has found empirical evidence to suggest that work hours are inversely related to various job attitudes and work behaviors. However, it is also possible that some of these relationships might be curvilinear rather than linear in nature (Ng et al., 2007). For instance, the relationship of work hours to individual work productivity may be positive up to some number of work hours (e.g., 40–50), but after ''hitting the wall'' at 60 hours per week, productivity might actually decline. This prediction can also be explained from an identity conflict perspective. When work hours hit very high levels, fragile accommodations between family members and work colleagues are harder to sustain. Conflicts which had been under the surface for a long time may escalate to a tipping point, where individuals are forced to make ''either–or'' choices among different identities. For this reason, we explore the possibility of curvilinear effects of work hours on individual attitudes in this study, too.

Methods

Literature search

We located relevant articles published in 2006 or before by searching for keywords (e.g., ''work hours,'' ''hours worked,'' ''job hours,'' ''work time,'' and ''hours employed'') in the *ABI INFORM* and *PsycINFO* databases. We also manually scanned through the articles published in the last 20 years in the following organizational science, applied psychology, and sociology journals: *Academy of Management Journal*, *Journal of Applied Psychology*, *Journal of Management*, *Journal of Occupational and Organizational Psychology*, *Journal of Organizational Behavior*, *Journal of Personality and Social Psychology*, *Journal of Vocational Behavior*, *Organizational Behavior and Human Decision Processes*, *Personnel Psychology*, and *Work and Stress*. We also identified and included seven unpublished studies by searching for relevant articles in the Dissertation Abstract International database. Finally, the reference lists of all the identified articles were examined carefully in order to locate any other relevant articles.

This search process yielded a total of 199 relevant articles, containing a total of 222 independent samples. The average age across all samples was 39 years, 48 per cent of subjects were female, 96 per cent of subjects were Caucasian, 92 per cent were non-management employees, and 93 per cent of the studies were conducted in the US. Only eight of the 222 studies involved students who also worked while in school.

Construct operationalizations

In all the studies we identified, authors measured number of work hours by self-reports. In these studies, number of work hours was almost invariably measured by asking employees to answer question: ''How many hours do you work on average each week?'' The average number of hours worked in a typical work week, as reported by employees across all the samples in the current meta-analysis, is 42.4 (SD is 10.2 hours). Admittedly, this measure does not have perfect reliability because what constitutes ''work'' can be interpreted quite widely across employees, organizations, and industries (Morrison,

1994). However, we necessarily follow the convention of previous research studies in the present meta-analysis. A list of other study constructs, along with their corresponding operationalizations, appears in Table 1.

Meta-analysis procedure

Hunter and Schmidt's (1990) random-effect meta-analysis technique was utilized in the present study. Hunter and Schmidt (2000) suggest that the assumptions in random-effects models fit the goals of meta-analyses more appropriately than fixed-effects models do.

The effect sizes of interest here are correlation coefficients. We first corrected the correlation coefficients associated with the measurement of psychological or attitudinal variables (e.g., job security) for unreliability by adopting the alpha values (α) reported in the study. Correlations corrected for unreliability were adjusted for measurement error to reflect purer effect sizes. In cases where no α value was reported for a particular scale in a study, an average α value calculated from the rest of the studies using the same scale was used as a substitute. It should be noted that self-reported work hours and other non-psychological measures (e.g., education level) are not typically disattenuated in meta-analyses because they are assumed to be measured with perfect reliability (Rhoades & Eisenberger, 2002; Sparks, Cooper, Fried, & Shirom, 1997). We followed that convention here, too.

For those studies that reported corrected correlations, no disattenuation was performed. For those studies in which authors used the same dataset and reported the same correlation for multiple studies, that correlation was recorded only once to avoid double-counting. For studies that contained multiple measurements of a variable (such as was the case in some longitudinal studies), we averaged the correlations associated with the same measure. Finally, to correct for sampling error, we calculated the sample size weighted corrected correlation. A corrected correlation was judged to be significant at $\alpha = .05$ when its 95 per cent confidence interval did not include the value of zero.

Moderator analyses

As noted earlier, we also wanted to examine how the proposed relationships might vary by gender, age, and job complexity. Like other researchers, we limited these moderator analyses to relationships that entailed 15 or more studies and included a description of gender composition, age composition, or job nature of the sample (Ng et al., 2005).

To test for the moderating role of gender, we took the percentage of females in each sample as a proxy independent variable to predict the Fisher–z-transformed correlation coefficient for the relationship of interest in a weighted least squares multiple regression (Ng et al., 2005). This technique of testing for moderators in meta-analyses has been found to be more robust than other methods available (Steel & Kammeyer-Mueller, 2002). If the percentage of females is a significant predictor, it suggests that the strength of the relationship between work hours and another variable is different for women than it is for men. The same technique was used to examine age (a continuous variable) and job complexity (high vs. low) as moderators.

While the coding of average age and proportion of females in a sample is self-explanatory, the coding for job complexity requires some further explanation. This coding process was guided by previous meta-analyses that also coded job complexity (e.g., Avolio & Waldman, 1990; Salgado et al., 2003; Wood, Mento, & Locke, 1987). Specifically, we classified each sample occupation into high and low job complexity according to the general intelligence, verbal ability, and numerical ability required to perform the job (Avolio & Waldman, 1990). The Dictionary of Occupational Titles (DOT) was used to

Table 1. Definitions and operationalizations of correlates of work hours

Correlates	Definition or operationalization
Organizational variables	
Job security	Self-reported perception of job security
General organizational support	Self-reported extent to which organization cares about employees' well-being and values their contributions
Job autonomy	Self-reported job/task autonomy or control
Opportunities for learning	Self-reported opportunities for learning or skill acquisition (e.g., training, workshops)
Organizational tenure	Years with the organization
Job level	Self-reported current job level; a higher score indicates a higher level
Occupational variables	
Salary	Annual earnings reported by self
Promotions in career	Number of promotions accumulated in careers
Career satisfaction	Self-reported satisfaction with career
Work centrality	Self-reported extent to which work is central to one's life
Career interruptions	Self-reported continuous vs. interrupted careers (yes or no)
Education level	Education level; a higher value indicates more education
General work experience	Years in the labor market
International work experience	Whether respondents have international work experiences (yes/no)
Social networking	Self-reported degree of engagement in social networking activities (e.g., social politics, networking, being socially active, etc.)
Family variables	
Being married	Married vs. not married
Having children	Having kids vs. no kids
Household demands	Self-reported hours given to household duties
Marital satisfaction	Self-reported satisfaction with marriage
Family satisfaction	Self-reported satisfaction with family
Family cohesion	Self-reported family or spouse support or overall family closeness
Situational demands	
Organizational pressure for performance	Self-reported extent to which they are expected or encouraged formally or informally to work for long hours
Job demands	Self-reported extent to which workload and required attention is high
Rigid work schedules	Self-reported extent to which one lacks control over work schedules. A higher score indicates less flexibility
Situational demands	
Role overload	Self-reported role overload, or the extent to which one plays too many work roles
Role ambiguity	Self-reported role ambiguity, or unclear expectations regarding work roles
Role conflict	Self-reported role conflict, or the extent to which work roles are incompatible with one another
Lack of supervisor support	Self-reported supervisor support. Self-reported quality of relationship with supervisors (e.g., leader–member exchange) was also included in this variable. A higher score indicates a lack of supervisor support
Lack of coworker support	Self-reported coworker or peer support received at work. A higher score indicates a lack of coworker support
Interpersonal conflict	Self-reported social conflict at work
Work behaviors and attitudes	
Absence	Self-reported or from company record
Job performance	Combining the following two types of measures: (a) Others-rated job performance, including performance rated by supervisors and objective performance measures

(*Continues*)

Table 1. (Continued)

Correlates	Definition or operationalization
	(b) Self-rated job performance
Job stress	Self-reported felt stress at work
Mental strain	Self-rated mental health; higher score indicates greater mental strain
Physical health problems	Combining the following two types of measures:
	(a) Subjective health: self-reported frequency of physical symptoms; higher score indicates more symptoms or worse physical health
	(b) Objective health indicator: clinical health measures such as blood pressure, heart rate change, stress hormone secretion. Higher score indicates worse physical health
Work injuries	Company-record or self-reported frequency of workplace injuries
Tobacco, alcohol, drug use	Self-reported frequency of use of tobacco, alcohol, or drugs
Work-to-family conflict	Self-reported extent to which work interferes with family
Family-to-work conflict	Self-reported extent to which family interferes with work

assist in this coding, too, since jobs in the DOT are coded and classified according to several dimensions (e.g., data, people, and things) that reflect job complexity (Avolio & Waldman, 1990; Salgado et al., 2003). Examples of ''high complexity'' jobs are researchers, accountants, doctors, psychiatrists, engineers, financial analysts, managers/executives, nurses, IT professionals, and teachers. ''Low complexity'' jobs include clerks, salespeople, highway maintenance workers, truck drivers, and receptionists.

Results

The first set of results includes the tests of all the specific hypotheses presented above. These results are presented and summarized in Table 2.

Linear relationships

Hypothesis 1 predicted that job security (H1a), general organizational support (H1b), job autonomy (H1c), and opportunities for learning (H1d) would be positively related to employees' hours worked. Consistent with this expectation, we found that work hours were positively related to job autonomy ($r_c = .09$) and opportunities for learning ($r_c = .14$). However, work hours were not significantly related to job security and general organizational support. Thus, variables that elicit organizational identity salience through providing employees with greater intrinsic rewards seem to be more highly related to long work hours.

Hypothesis 2 predicted that organizational tenure (H2a) and job level (H2b) would be positively related to employees' hours worked. We found that work hours were positively related to job level ($r_c = .22$) but unrelated to organizational tenure. Thus, Hypothesis 2 was partially supported.

Hypothesis 3 predicted that indicators of career success, including salary (H3a), promotions (H3b), and career satisfaction (H3c), would be positively related to employees' hours worked. Consistent with

Table 2. Correlates of hours worked

Correlates		N	k	r_c	SD_c	95% LCI	95% UCI
Organization variables							
H1a	Job security	4950	7	−.02	0.09	−0.11	0.08
H1b	General organizational support	23,680	14	−.04	0.13	−0.12	0.04
H1c	Job autonomy	29,922	33	.09*	0.11	0.04	0.13
H1d	Opportunities for learning	4076	8	.14*	0.15	0.01	0.28
H2a	Organizational tenure	35,732	20	.13	0.13	−0.07	0.07
H2b	Job level	14,154	24	.22*	0.14	0.15	0.28
Occupational variables							
H3a	Salary	27,902	46	.24*	0.18	0.18	0.29
H3b	Promotion	12,143	11	.15*	0.12	0.07	0.24
H3c	Career satisfaction	9191	15	.15*	0.10	0.09	0.21
H4a	Work centrality	17,846	38	.25*	0.15	0.20	0.30
H4b	Career interruptions	3497	7	−.10*	0.05	−0.17	−0.04
H5a	Education level	47,418	46	.07*	0.07	0.05	0.10
H5b	General work experience	10,095	21	.05*	0.11	0.00	0.11
H5c	International work experience	5616	4	.09*	0.04	0.01	0.16
H5d	Social networking	1496	5	.09*	0.05	0.00	0.17
Family variables							
H6a	Being married	49,915	51	.01	0.11	−0.02	0.05
H6b	Having children	44,631	55	−.04*	0.10	−0.07	−0.01
H6c	Housework demands	22,819	26	−.09*	0.08	−0.14	−0.05
H7a	Marital satisfaction	2824	8	−.05	0.06	−0.13	0.02
H7b	Family satisfaction	7920	10	−.05	0.07	−0.12	0.01
H7c	Family cohesion	5995	16	−.05	0.10	−0.12	0.02
Situational demands							
H8a	Organization pressures for performance	4849	6	.31*	0.19	0.10	0.52
H8b	Job demands	22,981	20	.41*	0.21	0.31	0.51
H8c	Rigid work schedules	18,403	16	.01	0.09	−0.06	0.04
H8d	Role overload	9870	24	.25*	0.12	0.20	0.30
H8e	Role ambiguity	5876	12	.02	0.11	−0.05	0.09
H8f	Role conflict	4982	14	.11*	0.07	0.06	0.17
H9a	Lack of supervisor support	6628	13	.05	0.08	−0.11	0.01
H9b	Lack of coworker support	12,495	15	−.02	0.05	−0.05	0.02
H9c	Interpersonal conflict	5092	4	.13*	0.07	0.01	0.26
Work behaviors and attitudes							
H10a	Absence	3617	6	−.07*	0.07	−0.16	−0.02
H10b	Job performance	5672	10	.02	0.28	−0.18	0.23
H11a	Job stress	16,268	23	.13*	0.11	0.07	0.18
H11b	Mental strain	21,280	38	.06*	0.09	0.02	0.09
H11c	Physical health problems	16,367	29	.00	0.06	−0.03	0.03
H11d	Work injuries	1719	7	.00	0.14	−0.15	0.16
H11e	Tobacco, alcohol, and drugs use	8187	9	.07	0.10	−0.02	0.16
H12a	Work-to-family conflict	30,827	51	.26*	0.11	0.23	0.30
H12b	Family-to-work conflict	14,918	28	.06	0.12	−0.00	0.10

Note: N = cumulative sample size; k = number of studies cumulated; r_c = sample-size weighted corrected correlation; SD_c = standard deviation of r_c; LCI = lower bound of confidence interval; UCI = upper bound of confidence interval.
*$p < .05$.

expectations, we found that salary ($r_c = .24$), promotions ($r_c = .15$), and career satisfaction ($r_c = .15$) were all positively related to work hours. Thus, Hypothesis 3 was fully supported.

Hypothesis 4 was also fully supported. We predicted that work centrality (H4a) would be positively related to hours worked, while career interruptions (H4b) would be negatively related to hours worked. We found that work centrality ($r_c = .25$) was positively related to work hours and that career interruptions were negatively related to work hours ($r_c = -.10$), as expected.

Hypothesis 5 predicted that career investments, including education level (H5a), general work experience (H5b), international work experience (H5c), and social networking (H5d), would be positively related to hours worked. We found that educational level ($r_c = .07$), general work experience ($r_c = .05$), international work experience ($r_c = .09$), and social networking ($r_c = .09$) were, in fact, all positively related to work hours, although the effects were not strong.

Hypotheses 6 and 7 both looked at the relationships between work hours and family variables. Hypothesis 6 predicted that being married (H6a), having children (H6b), and having household responsibilities (H6c) would be negatively related to employees' hours worked. We found that having children ($r_c = -.04$) and household responsibilities ($r_c = -.09$) were the only two significant predictors here. Hypothesis 7 predicted that marital satisfaction (H7a), family satisfaction (H7b), and family cohesion (H7c) would be negatively related to employees' hours worked. We found that none of these variables was significantly associated with hours worked. Thus, support for the predicted relationships between family variables and work hours was generally weak.

Hypothesis 8 predicted that organizational pressures for performance (H8a), job demands (H8b), rigid work schedules (H8c), role overload (H8d), role ambiguity (H8e), and role conflict (H8f) would be positively related to employees' hours worked. We found that organizational pressures for performance ($r_c = .31$), job demands ($r_c = .41$), role overload ($r_c = .25$), and role conflict ($r_c = .11$) were all positively related to work hours. On the other hand, rigid work schedules and role ambiguity were not related to work hours. Thus, we obtained some (but not complete) support for the hypothesis that situational demands are related to longer work hours.

Hypothesis 9 predicted that lack of supervisor support (H9a), lack of coworker support (H9b), and interpersonal conflict (H9c) would be positively related to employees' hours worked. We found that lack of supervisor support and lack of coworker support were unrelated to hours worked, but that interpersonal conflict ($r_c = .13$) was positively related to hours worked. Thus, our hypothesis that lack of assistance from others is related to longer work hours received partial support here.

Hypothesis 10 predicted that hours worked would be negatively related to absence and positively related to job performance. We found that work hours were negatively related to absence, but with a weak effect size ($r_c = -.07$). Hours worked was unrelated to job performance.

Hypothesis 11 predicted that hours worked would be positively related to job stress, mental strain, physical health problems, work injuries, and use of tobacco, alcohol, and drugs. We found that work hours were positively related to job stress ($r_c = .13$) and mental strain ($r_c = .06$) only.

Finally, *Hypothesis 12* predicted that hours worked would be related to work–family stress. Supporting this hypothesis, we found that hours worked were positively related to work-to-family conflict ($r_c = .26$). On the other hand, work hours were unrelated to family-to-work conflict. Thus, Hypothesis 12 received partial support.

Moderating effects of age, gender, and job complexity

Gender
In Table 3, we present the results of the moderating effects of gender. In terms of the organizational and occupational variables, we expected that the relationships with work hours would be stronger for men

Table 3. Results of the moderating role of gender

Relationships	k	β	Regression F-value
Organizational variables			
Job autonomy–work hours	28	.02	0.05
Job level–work hours	22	.21	0.92
Organizational tenure–work hours	18	−.62	10.07**
Occupational variables			
Salary–work hours	41	−.10	0.40
Career satisfaction–work hours	15	.67	10.73**
Work centrality–work hours	36	−.14	0.67
Education level–work hours	40	.46	10.20**
General work experience–work hours	17	−.49	4.63*
Family variables			
Being married–work hours	75	−.18	2.51
Having children–work hours	51	−.22	2.45
Situational demands			
Job demands–work hours	20	−.28	1.55
Role overload–work hours	23	−.03	0.01
Work behaviors and attitudes			
Work hours–job stress	22	−.08	0.13
Work hours–mental strain	34	−.38	5.44*
Work hours–physical health problems	26	−.37	3.90*
Work hours–work-to-family conflict	49	.14	0.91
Work hours–family-to-work conflict	27	−.26	1.84

Note: $k =$ number of studies cumulated; $\beta =$ standardized beta weight for gender, coded as the per cent of women in each study.
*$p < .05$; **$p < .01$.

than for women. We did find a significant moderating effect for gender in the relationship between organizational tenure and work hours in the predicted direction. Also consistent with our expectations, the relationship between amount of general work experience and hours worked was more positive for men than for women. However, contrary to our expectations, career satisfaction and educational level were more strongly related to work hours for women than for men.

There were no theoretical reasons to expect gender differences in the strength of the relationships between situational constraints and work hours. However, for sake of completeness, we examined these relationships in an exploratory fashion. Not surprisingly, we found that gender did not moderate these relationships.

We found that the relationship between work hours and mental strain and the relationship between work hours and physical health were both more positive for men than for women. These findings are consistent with our expectation that men would be more concerned about their work careers and therefore more vulnerable to workplace stressors.

Age

By and large, we found just limited support for the moderating effects of age. There were only two relationships that age significantly moderated: (1) between organizational tenure and work hours, and (2) between physical health and work hours. In both cases, the relationships were less positive for older workers than for younger workers. These findings provide some modest support for our expectation that salient organizational identity has a weaker relationship with work hours for older workers than it has for younger workers.

Table 4. Results of the moderating role of job complexity

Relationships	k	β	Regression F-value
Work experience–work hours	17	−.13	0.25
Job autonomy–work hours	18	−.59	8.74**
Role overload–work hours	16	.54	5.68*
Work hours–mental health	25	−.19	0.85
Work hours–physical health	18	−.32	1.77

Note: k = number of studies cumulated; β = standardized beta weight for job complexity, coded as 1 for high complexity industries and as 0 for low complexity industries.
*$p < .05$; **$p < .01$.

Job complexity

In Table 4, we present results for the relationships that had sufficient studies to test for the moderating effects of job complexity. We found that the job autonomy–work hours relationship was more positive for individuals in low complexity jobs. In contrast, the role overload–work hours relationship is more positive for people in high complexity jobs.

Curvilinear relationships

We conducted some exploratory analyses to investigate the possibility of curvilinear relationships using the same technique that we employed for testing moderating effects. That is, we used the average work hours associated with a sample as an independent variable to predict the Fisher–z-transformed correlation coefficient of work hours with another variable in a weighted least squares multiple regression (Sturman, 2003). In essence, this procedure tests whether the *squared term* of average work hours is related to another variable of interest. If this squared term is found to be a significant predictor, it suggests that number of work hours is curvilinearly related to that variable of interest. The results are presented in Table 5.

Although there was no reason ex ante to expect any particular curvilinear relationships, we did find four significant ones. The first two involved the relationships between work hours and work–family

Table 5. Curvilinear relationships

Relationships	k	β	Regression F-value
Work behaviors and attitudes			
Work hours–job stress	15	.09	0.11
Work hours–mental strain	25	−.53	9.12**
Work hours–physical health problems	20	−.53	7.19*
Work hours–work-to-family conflict	43	.48	12.06**
Work hours–family-to-work conflict	26	.39	4.24*

Note: k = number of studies cumulated; β = standardized beta weight for hours worked, coded as average hours worked in each study. In essence, this statistical procedure tests whether the *squared term* of average work hours is related to another variable of interest.
*$p < .05$; **$p < .01$.

conflict. Specifically, the slopes of the relationships of work hours with work-to-family conflict and with family-to-work conflict became *more positive* as work hours increased. The second two involved the relationships between work hours and stress symptoms. Specifically, the slopes of the relationships of work hours with mental strain and with physical health problems became *less positive* as average work hours increased.

Discussion

Using Meyer et al.'s (2006) identity-commitment framework as a theoretical guide, we examined the relationships between factors promoting salient social identities (as a member of an occupation, an organization, and/or a family) and hours worked. Below, we discuss the implications of our results for theory development and future research.

Implications for theory

Among the various clusters of variables examined in this study, which theoretical group of variables had the strongest relationship with hours worked? In general, it seems to be the variables affecting occupational identity. It appears that salience of occupational identity provides the greatest motivation for individuals to dedicate more time and energy to their work (London, 1984). This finding is consistent with recent research which suggests that individuals are taking increasing personal responsibility for managing their own careers (King, 2004; Sullivan, Carden, & Martin, 1998). On the other hand, the family variables, as a group, demonstrated the weakest relationships with work hours. In contrast to more qualitative studies suggesting strong links between family identity and work hours (e.g., Hochschild, 1989, 1997), the results of this meta-analysis suggest that family identity is not the major driver in decisions to invest more (or less) time at work.

However, it should be noted that we limited our focus in this paper to the non-work identities on which there has been considerable previous research, namely, spouse and parent. There are other non-work social identities, though, that may also govern individuals' motivation to work for more or fewer hours, such as student, partner, and child (Super, 1987). The inclusion of these social roles in future studies of work hours may reveal relationships with stronger (or different) effect sizes. Another possible explanation for the weak effects of family identity salience is that situational demands may overpower personal preferences to work fewer hours. The large effect sizes of the situational demands variables here give at least some credence to this possibility.

A third possible explanation for the weak effects of family identity is that some individuals with high family identity may feel *greater* motivation to work longer hours to support their families. As noted earlier, most of the literature in this area has assumed that individuals with high family identity will work fewer hours (Valcour, 2007). However, it is possible that some individuals with high family identity will work longer hours because they are committed to providing a higher standard of living for their spouses and children (or extended family members). Thus, these two countervailing forces of family identity on long work hours may result in negligible-sized effects.

Another possibility is that family variables have more influence on individuals' behaviors in collectivist cultures than in individualistic cultures. Collectivist cultures may add power to the effects of family identities on individual behaviors and attitudes. Most of the existing empirical studies on this

topic, though, has utilized Caucasian Americans from a highly individualistic culture (Hofstede, 1997; Schwartz, 1994), and so the effects of cultural differences remain to be tested in future research.

As discussed earlier, there have been two conflicting views in the literature regarding the relationship of work hours to organizational productivity. On the other hand, long work hours could be associated with higher individual productivity; on the other hand, long work hours could be associated with burnout and performance problems associated with persistently high levels of stress and exhaustion. With some exceptions, the results here provide some support for the position that working long hours is negatively associated with work effectiveness and work attitudes. Long work hours were associated with greater reported job stress, mental strain, and imbalance of work–non-work commitments. However, because so little research has been done on the relationship between work hours and performance longitudinally, it is not clear whether the relationship of work hours to productivity is worse in the long run than in the short run. The identity approach we have adopted here may be particularly useful for understanding the complex relationship among work hours, well-being, and productivity in the long run. For instance, lengthening work hours driven by salient social identities (instead of situational demands) may be less likely to cause mental strain.

The present research also highlights the existence of moderating relationships in the nomological network of work hours. For instance, we expected that the relationships of work hours with organizational and occupational variables would be more positive for men than for women, whereas the relationships of family variables with work hours would be more positive for women than for men (Bird & Schnurman-Crook, 2005; Day & Chamberlain, 2006). While there were a few significant moderating effects of gender in the predicted direction, the lack of widespread moderating effects for gender may indicate that the size of gender effects in the work–family conflict arena have diminished over time (e.g., Baruch-Feldman, Brondolo, Ben-Dayan, & Schwartz, 2002; Frieze, Parsons, Johnsons, Ruble, & Zellman, 1978).

It is important to note that there were a few cases in which our results were significant in a direction contrary to our predictions. For example, we found that the relationships between occupational variables (e.g., career satisfaction and educational level) and long work hours were stronger for women than for men. One possible explanation may be that men have a higher baseline level of occupational identity due to their early socialization towards achievement and accomplishment. Consequently, increases in career satisfaction and education may more likely evoke greater salience in occupational identity among women than among men.

At this juncture, the weight of the evidence is that age, in and of itself, is not a powerful or widespread moderator. One possible explanation is that age has different impacts across different occupational contexts (Astin, 1984; Fletcher & Bailyn, 1996; Gorman, 2000; Melamed, 1996; Powell & Mainiero, 1992). In particular, the effectiveness of ''fluid'' and ''crystallized'' intelligence changes over the life course (Schacter, 2001). If older workers have jobs in which they are required to learn new facts quickly and to make complex decisions with uncertain data, they may indeed have to put in longer hours to complete their work. On the other hand, if older workers are mainly required to perform routine or well-rehearsed tasks, there is no reason to expect older individuals will need additional time to complete their work.

In addition, we found some empirical evidence that the strength of the relationships of work hours to other variables may vary by job complexity. Specifically, we found that the job autonomy–work hours relationship is more positive for individuals in low complexity jobs. One possible reason for this finding is that employees in low complexity jobs typically have less autonomy in doing their jobs and, therefore, opportunities for high job autonomy may particularly motivate these employees to devote more discretionary time to work. On the other hand, we found that the role overload–work hours relationship is more positive for individuals in high complexity jobs. This finding perhaps reflects the fact that it is much more difficult for employees in complex jobs to resolve overload

issues in any other way but working longer hours, since delegation to less-skilled subordinates is not a viable option.

The current study was able to extend existing research by examining curvilinear relationships in an exploratory fashion. For example, our results suggest that, at already intense levels of mental/physical strain, the addition of more work hours creates hardly any more stress. In other words, once a very high state of stress is reached, each new hour work creates marginally less additional stress. On the other hand, the negative spillover effects between work hours and work–family conflict become especially serious at very high levels of work hours. That is, one additional work hour in an already jammed week may exponentially increase work–family conflict. While the current state of the literature did not allow testing for a wide array of curvilinear relationships, the significant results we found here suggest these relationships warrant much more attention in future theory development.

Directions for empirical research

While we found some strong effect sizes (e.g., the strong relationship of situational demands to work hours), we also observed some modest effect sizes as well (e.g., the weak relationship of absence to work hours). Given the large number of variables that have been studied as correlates of long work hours, it is perhaps not surprising that some of the effect sizes are small. However, in our review of the research on long work hours, we observed that few attempts have been made to study how various correlates interact with each other to predict work hours. From our perspective, then, the next logical step in this research stream is to investigate such interaction effects more thoroughly. For instance, the relationship of social networking and work hours may be stronger when situational demands are low. In these cases, individuals would have more time to dedicate to social networking "on the clock."

Another reason why a wide range of effect sizes may have been observed is that number of work hours did not adequately measure the *quality* of work produced. As noted earlier, many investigators have assumed that, by measuring the quantity of work hours, the effects of longer work weeks on employee productivity can be fully understood. On the other hand, it is equally possible that employees may be physically present at work for longer periods of time yet perform their tasks more poorly as the day or week goes by (e.g., daydreaming, procrastinating, or doing personal things during work time). Thus, it would be particularly useful for future researchers to explore the effects of longer work hours on work quality. For instance, the explanatory mechanisms for understanding downturns in productivity over time could include decreases in attention, loss of motivation, greater boredom, or passive aggressiveness towards supervisors.

In order to investigate the differences between quantity and quality of work hours, psychometrically acceptable measurements for both constructs are needed. Unfortunately, our review of the literature indicates that quality of work hours is seldom measured. Therefore, we encourage researchers to more fully conceptualize the construct of quality of work hours, develop a solid operationalization of it, and include it in future theoretical and empirical research. We believe that current behavioral measures of job performance cannot be substitute measures for the quality of work hours because they are not measured relative to the number of work hours. Ideal measures of quality of work hours should capture the quality of work output *relative to the time input*.

Quantity of work hours is measured regularly, but with single-item measures from single sources that vary from study to study. Such measures might be affected by common method bias (Mathieu & Zajac, 1990; Rhoades & Eisenberger, 2002). Thus, existing measures of quantity of work hours are in need of improvement, too. Nonetheless, we do not believe the problem of common method bias is overwhelming in this study for two reasons. First, although some of the measures are self-reported (like number of promotions), they are not all attitudinal in nature. Second, previous researchers have argued

that employees themselves are the ones best able to provide accurate assessments of how long they work, since employers do not typically keep track of the total hours worked by "exempt" employees or hours worked outside the main workplace.

In general, then, more multi-source measurements, multi-item scales, and longitudinal designs are needed to improve the methodological rigor in this field of research. For instance, collecting more objective measures of work hours (e.g., from personnel records or supervisors) may help validate self-report measures. If self-report measures must be used, we recommend researchers craft measurement items that clearly articulate the time frames respondents should use when reporting hours worked. As an example, Greenhaus, Collins, and Shaw (2003) measured hours worked with three items: (a) hours worked per week during the busy season; (b) hours worked per week during the off-season; and (c) the number of weeks in the busy season. This information was then used to calculate the total number of hours worked during the year; the authors then divided that total number by 52 to obtain average hours worked per week. More carefully designed scale items of work hours that take into consideration the study context, like those in the Greenhaus et al. (2003) study, are therefore needed.

More work is also needed to assess the reliability levels of existing measures of work hours. Most studies use single items to assess hours worked. In one of the few exceptions we found, Valcour (2007) measured hours worked with two items but did not report the correlation between them. Besides using multiple items, another possibility is obtaining the correlation between objective and self-report sources of work hours. This correlation may give researchers a rough idea about the level of reliability of these measures. (We emphasize that it is only a "rough" idea because ideally the reliability estimate should be obtained from correlating two conceptually equivalent measures.) Finally, longitudinal studies would allow researchers to assess test–retest reliability. For instance, in one of the very few studies that reported test–retest correlations between measures of work hours, Rode (2004) found that the correlation between time 1 and time 2 measure (3 years apart) was .52. Overall, greater attention to the measurement issues discussed above is needed before more robust conclusions about the nomological network of work hours can be drawn.

In advancing research in this area, another variable which certainly warrants fuller attention is union membership. While we expect that identification with the union may be inversely related to the number of discretionary work hours put into the job, the mediating process through which this relationship unfolds needs further explanation. For instance, do workers who identify with the union believe that putting in longer hours undermines employment opportunities for other workers? Do those who identify with their unions believe that working longer hours decreases the negotiating power of the union when members give in to management pressure to put in time beyond what the contract requires? Or, is the reluctance of strong pro-union workers to put in long hours the result of fear of ostracism for lack of social solidarity with other union members?

While we were able to test for the bivariate and moderator relationships we proposed, we were unable to infer causation due to lack of sufficient longitudinal research in previous studies. Thus, future research is needed to examine the dynamics of reciprocal causation. For instance, the observation that work hours were not significantly related to organizational support here may indicate the presence of two countervailing forces operating simultaneously. Perceptions of organizational support can serve as motivation to work longer hours; alternatively, longer work hours may cause individuals to become angry and emotionally detached from their organizations. As another example, the zero relationship observed between hours worked and job performance may indicate either that long work hours increase job performance or that superior job performance may lower employees' perceived needs to work long hours. These are only two examples of the complexity of the relationships of work hours with other correlates for which longitudinal designs are needed to provide definitive answers.

Meta-analysis is useful for integrating a wide array of past research results, but presents some limitations as well. We were unable to directly measure social identities or their relative salience here due to lack of direct measures of these constructs in previous published studies. A related limitation is that the mediating effects of identity formation and salience could not be tested statistically. Consequently, our findings about social identities are only suggestive until more direct measures of social identities can be obtained. Moreover, the samples and data collection techniques adopted in studies of work hours have been rather homogenous in nature. That is, most studies involved non-management, Caucasian workers employed in the United States in studies where work hours were measured via self-report survey data. As such, there was not enough variability in methodology to allow us to examine how various research design features impact the pattern of results. More variety in methodology, therefore, is important in extending our insights about the impact of long work weeks. In addition, as in other meta-analyses, we assumed that some of the variables we used here (e.g., the number of work hours and education level) are measured with perfect reliability (Sparks et al., 1997). This assumption, while reasonable, needs to be assessed more rigorously.

Conclusion

There has been considerable public concern about the ways in which long work hours are corroding the quality of family life. Implicit in the public dialogue on this topic has been the assumption that organizations purposefully encourage longer work weeks and that long work hours are almost invariably good for organizational productivity. However, the results of this study suggest that long work hours and family identification are generally only weakly related and that long hours do not necessarily yield significant gains in productivity. Moreover, employees' decisions to work longer hours are not invariably made at the behest of organizations, but rather are often made to promote their own careers or simply because the nature of the work itself is enticing and rewarding (Brett & Stroh, 2003; Feldman, 2002; Schor, 1992).

As Hochschild (1997: 248) observes: "...A movement to reform work time should not limit itself to encouraging companies to offer policies allowing shorter or more flexible hours... Such policies may serve as little more than fig leaves concealing long-hour cultures... A time (reform) movement would also need to challenge the premises of that work culture." As the current study suggests, though, individuals' dedication of more time to work is influenced not only by the culture of the workplace but also by the salience of one's identification with an occupation, identification with the family unit, and situational demands. Thus, to get a full picture of individuals' motivation to work long hours, we need to understand both the professional and situational contexts in which this dedication of time is made.

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