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From Discovery to Practice: Translating and Transforming Work-Family Research for the Health of Families

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Running Head: Translating Work–Family Research

From Discovery to Practice: Translating and Transforming Work–Family Research for the Health of Families

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The aim of this paper is to examine the meaning of translational research in the work and family field. Specifically, we review findings from a longitudinal study of low-wage workers across the transition to parenthood and examine how this basic discovery research informs the next step in translational research, that of clinical practice. The authors describe three specific sets of findings that hold direct and immediate implications for interventions and policy that could support working families. The paper closes with a discussion of how both translational and transdisciplinary research have the potential to inform evidence-based practice, social policy, and effective social action to decrease physical and mental health disparities among low-income, working families.

Key Words: transdisciplinary research, transition to parenthood, translational research, work and family issues, working-class families

It is probably fair to say that most research scientists chose their specific professions with the aim of solving a problem. Those problems can range from finding a cure for depression, to discovering solutions to climate change, to decreasing health disparities among marginalized groups—all important and noble endeavors. Too often, however, after years of training and

specialization in their respective fields, researchers end up in intellectual silos, surrounded by like-minded scholars with similar training, all focused on solving a similar set of related problems. Within these intellectual bubbles, surrounded by colleagues with similar perspectives and specialties, it is easy to become lost in the narrowness of our work. As a result, the relevance and meaning of our research—especially as it relates to the greater good of society—becomes fuzzy, if not lost entirely.

In contrast to this myopic view that can develop within disciplinary bounds, family science stands out as a unique discipline, steeped in a long history of translational and interdisciplinary approaches. Human development and family science (HDFS) programs across the country developed out of the land grant mission of state universities to provide knowledge and practice to better the lives of individuals and families. HDFS programs are, by their very nature, interdisciplinary, drawing scholars from an array of backgrounds to study families. Furthermore, many of these programs have extension and outreach arms aimed explicitly at translating and applying research findings to better the lives of children and families. Only recently, however, has the National Institutes of Health (NIH) made translational research a national priority with the establishment of 24 Clinical and Translational Science Centers around the country (Woolf, 2008). In a similar vein, the National Science Foundation supports "partnerships for innovation" aimed at accelerating translational research. These new national science initiatives have the potential to not only highlight the way we have done and do business as family scientists, but also to enhance and extend the approaches that family scholars use in their engaged and translational research.

In this article, we briefly outline the basic definitions of both translational and transdisciplinary research that we will use because these terms often mean different things to

different people (Woolf, 2008). We then introduce the Work and Family Transitions Project (WFTP), a 10-year longitudinal study of the transition to parenthood among low-income, working families—a project that falls on the basic research or *basic science discovery* end of the translational science continuum (Dankwa-Mullan et al., 2010). Our longitudinal research provides one example of how to identify and study specific aspects of family life that could be subject to intervention for the promotion of family well-being. From a translational perspective, our research is in the discovery phase, where our aim is to examine the relationship between modifiable determinants of individual development and family well-being, specifically aspects of low-wage work, on parents' mental health and child development. Our longitudinal study of 360 families provides insight into how specific aspects of work and family life may be ripe for intervention and prevention efforts, a translational endeavor.

Translational Research and its Implications for Family Science

Put simply, *translational research* aims to streamline the movement of knowledge through the research pipeline from bench-to-bedside and bedside-to-community, with the aim of making basic research applicable in the real world. The NIH has made translational research a key priority, launching programs and funding initiatives to enhance translational studies. Examples put forward by NIH to showcase translational efforts are usually basic lab research studies aimed at enhancing drug protocols or treatments for health problems. The question of how nonmedical research can also be informed and enriched from a translational perspective is a critical issue for social scientists.

For family science scholars in particular, the question of how basic research can translate to psychosocial interventions, education, and policy is of paramount importance. As Lerner (2015) pointed out, the split between research and application or practice runs counter to decades

of research on human development. He boldly posited that "developmental science [and, we would argue, family science as well] can contribute to enhancing positive development among diverse individuals across the course of their lives and, as well, to promoting social justice in their communities, nations and regions" (p. 165). Moreover, Lerner made the important observation that not only should research inform practice, but practice must also inform research—thus, the process of translating research is inherently bidirectional.

Transdisciplinary Research and its Implications for Family Science

The definition of *transdisciplinary research* is complex and more nuanced than translational research. Specifically, unlike interdisciplinary or multidisciplinary approaches, in which scholars remain within their main disciplinary programs but connect with each other to varying degrees, transdisciplinary research requires team-based approaches with an aim of blending disciplines (Dankwa-Mullan et al., 2010; Rosenfield, 1992). So, for example, a group of scholars from a range of backgrounds may work together to study depression, obesity, or stress. The idea is that innovative, relevant, and impactful solutions to key social problems are most likely to come from the melding of multiple knowledge streams that will capture the complexity of the problem at hand. Through the collaboration of experts with varying viewpoints and knowledge bases, transdisciplinary research teams can generate new theory and methodology for addressing pressing health, social, and economic problems.

In our view, the field of family science has, in many ways, modeled interdisciplinary research and, to a lesser degree, transdisciplinary research. HDFS programs around the country comprise scholars trained in psychology, sociology, anthropology, statistics, economics, and education. Moreover, these groups of scholars are focused on research topics of relevance to the health and well-being of families; thus, interdisciplinary approaches to the study of topics such

as divorce, work–family conflict, obesity, or adolescent substance use are common and encouraged. The field of family science is ripe for transitioning to a transdisciplinary approach. We argue that supporting and incentivizing scholars from diverse disciplines to conduct problem-based research across disciplines is vital for addressing problems facing families in the 21st century and reflects a paradigm shift in how knowledge is created and applied.

In the following section, we describe our basic research study that spans 12 years. We highlight implications for practice derived from our findings that address on-the-ground prevention–intervention efforts as well as policy initiatives. In addition to uncovering some answers to our original research questions, answers that we believe can inform intervention efforts for low-income families, we also generated many more new research questions that we introduce. It is our contention that these new research directions will require the creative thinking of scholars and practitioners in business, medicine, psychology, economics, and sociology to adequately and fully address the issues. To be clear, we view our research as falling in the interdisciplinary camp of inquiry, as opposed to being transdisciplinary research. Specifically, co-investigators on our grants include scholars from psychology, family studies, social work, and sociology. We worked together to conceptualize the framework, measures, and analyses. Having multiple perspectives provided great insight as we crossed levels of analysis from the individual, to the family, to the broader culture in the study. As the field of work and family develops, however, transdisciplinary approaches that pull us out of our disciplines to reconceptualize issues will be critical for future progress. For example, there is potential in our study of concepts such as stress and resilience (conceptualized with input from biologists, neuroscientists, psychologists, sociologists, and anthropologists) to move toward a transdisciplinary approach focused on developing new, problem-based solutions.

The Work and Family Transitions Project: From Discovery to the Real World

The WFTP encompassed two distinct longitudinal studies. The first (Study 1) comprised long-term cohabiting (80% married) working-class couples ($N = 153$) followed across the first year of parenthood. The second (Study 2), a continuation project, followed up with the Study 1 sample 5 years later and added an additional 207 low-income families, comprising primarily single and cohabiting women, with a small subsample of married women. Parents in both studies were experiencing the transition to parenthood. The aim of the overall project, which began in 1998, was to understand how low-wage work conditions and workplace policies across the transition to parenthood affect family life. Specifically, we were interested in examining how the employment of both mothers and fathers, early in their infants' lives, predicted parents' mental health, the quality of parental relationships, and, ultimately, children's developmental outcomes. Importantly, we wanted to look past the simple question of whether both parents were employed; rather, we sought to examine specific conditions of parents' work, such as scheduling flexibility, income, shift work, autonomy, time stress, supervisor support, and coworker support as key factors influencing workers and their families. We focused exclusively on working-class and working-poor employees because much less is known about the unique challenges facing families with few economic and social supports than their more frequently studied middle-class counterparts.

Study 1

The first study was conducted between 1998 and 2003, and the sample comprised 78% Whites, 12% African Americans, 8% Latinos, and 2% multiracial participants. We restricted recruitment to those parents who were employed full-time in lower status occupations (e.g., truck driver, certified nursing assistant) and whose highest level of educational attainment was an associate

degree or less. To participate, mothers and fathers had to be planning on returning to full-time work soon after their baby's birth. Median annual household income was $39,870. Parents were interviewed five separate times across the first year of parenthood (i.e., from third trimester of pregnancy until the child's first birthday) and again as their oldest child entered the first grade. All interviews took place in participants' homes and typically lasted between 2 and 3 hours. Detailed data were collected on parents' mental health, work conditions, relationship quality, social support, and parenting experiences. Both quantitative and qualitative methods were used to capture parents' stories and experiences that were behind the numbers. Thus, interviews included structured survey instruments as well as open-ended, qualitative components. Original interviews were replicated in a sixth phase of the study as the target child was entering the first grade. In addition, interactions between (a) couples and (b) parents and children were videotaped during home visits, and teachers completed assessments of children's academic and social outcomes in the school setting.

Study 2

Between 2004 and 2009, we conducted a replication of Study 1, but with a more diverse sample in terms of family structure and race and ethnicity. The sample in Study 2 included 207 expectant mothers (47 African American, 75 Latino, 74 White, 10 multiracial, and 1 Asian mother). Ninety-six were single mothers, 80 were cohabiting, and 31 were married. All mothers were employed in low-income jobs (median annual income was $16,488) and worked a mean of 34 hours per week. The same data collection procedures were replicated in the second study. In addition, both mothers and fathers (when present) participated in parent–infant interactions when children were 3 and 12 months old, which were videotaped and coded for parenting sensitivity.

Research Rigor in the Face of Reality

Developing a research study requires addressing new, important, and as-yet-unexplored questions while building upon and extending good science. At the outset of any new project, the aim (unrealistic as it may be) is to develop and conduct a perfect study: a study that addresses an important social problem, that is elegantly designed, that asks the right questions, and that is based on a perfectly representative sample (and that has no attrition). The reality is that no study has been or ever will be perfect, and researchers conducting community-based research with living, breathing families quickly learn to embrace the messiness of this reality.

On the positive side, our project has many strengths. We collected longitudinal data from 360 expectant parents at five time points across the first year of the child's life and for a subsample extended data collection out to the child's entry into the first grade. We collected data from multiple family members, including mothers, fathers, and secondary caregivers, and as the child entered the first grade, we interviewed them and their teachers. We used multiple methods, including survey instruments, qualitative interviews, videotaped couple interactions, and child clinical assessments. Finally, we focused our analyses on an understudied subgroup of the U.S. population (low-income working families) and employed a within-group approach that allowed us to examine factors that influence why some parents and children flourish and others struggle across the transition to parenthood.

One of the greatest challenges in designing and implementing the original study arose during the recruitment of our sample. Despite exhaustive efforts to recruit a racially and ethnically diverse sample, the research team's efforts were unsuccessful and resulted in a predominantly White sample. We devoted considerable time and energy to trying to increase our enrollment of racial and ethnic minorities. We ensured that our interview team reflected the diversity of the families we wanted to recruit; we partnered with the Women, Infants, and

Children's Program (WIC) and with two prenatal clinics in ethnic minority communities in the area; and we developed long-term relationships with program directors and community leaders to better understand the strengths and challenges of the community. Nevertheless, our efforts to recruit a racially and ethnically diverse sample were not successful.

After numerous conversations with new mothers, community members, and program leaders, we came to realize that there was a flaw in the original study design that served to exclude non-White families from the project. Specifically, the recruitment criteria called for (a) married couples or couples living together for at least a year, (b) both spouses working full-time, (c) both spouses becoming first-time parents, and (d) both spouses planning on returning to work full-time within 6 months of the baby's birth. The study was designed around a life course sequence that included finishing school, getting a job, getting married, and having children—in that order. When designing the study, I (the first author) failed to recognize the ethnocentric (i.e., White, middle-class) bias in these inclusion criteria; I assumed this life course trajectory would apply to a majority of families, despite the demographic data of the region indicating that the majority of all births in the catchment area of our study were to single mothers. Specifically, the unwed mother birth rate by race and ethnicity was 86% of African American mothers, 69% of Hispanic mothers, and 57% of White mothers were single at the time of birth (U.S. Census Bureau, 2010). In addition, unmarried Latina and White low-income mothers were less likely to return to paid work after birth. Once these design flaws were recognized, we consulted with colleagues, community partners, and my program officer at NIH about how to best remedy the problem. We had a few options. We could recruit more minority families in which parents were attending school rather than working, could include families with more than one child, or could add a sample of single parents. However, changing the criteria for involvement would create

multiple differences across racial and ethnic groups that would inflate group differences. Moreover, sample changes would move us away from the initial goal of the study, which was to understand the transition to parenthood in the context of employment conditions. My decision was to keep the recruitment criteria the same, continue our efforts to target racial and ethnic minority families, and most importantly, design a new study that took into account life course and family structure differences across minority groups; thus, Study 2 (WFTP2) was formed.

We present this level of detail here because rarely do researchers discuss the mistakes, oversights, and flaws in their study designs—flaws that can dramatically influence our results, the representativeness of our samples, and the implications of our findings. Ironically, it is exactly this type of information that is necessary to know to whom our results are "translate-able." When our samples fail to represent the populations of our communities or reflect the life course transitions that characterize their lives, then our success in translating our findings into effective and sustainable interventions are likely to fail.

One of the most important lessons we learned over the years of conducting our studies was to pay more attention to the role of the researcher in the research process. Intellectually, we had read numerous articles and been involved in academic discussions on the issue of objectivity in science; we fully recognized that one's biases, perspectives, and personal histories inform the research process. Yet the process of reflecting on our own biases, as they directly and indirectly affected our work, was a difficult challenge. We had to become aware of the ways in which our biases shaped who we studied, what we studied, and the methods we used. It takes deep humility and self-awareness—which we now continually work on—to critically assess one's own research process. It is here where we believe that interdisciplinary and transdisciplinary endeavors can be extremely helpful. Working with others, especially those from other disciplines, challenges us to

continually question our assumptions and biases and forces us to entertain multiple perspectives. For example, in our own work, we have started to incorporate findings from the stress literature and neuroscience to consider how cortisol reactivity is linked to new mothers' and fathers' perinatal mental health and children's developmental outcomes. A colleague, who has expertise in assessing biological, behavioral, and psychological indices of stress and depression, and the first author of the present paper recently received a grant to explore how both psychosocial and biological indicators of stress and depression during the prenatal period hold implications for parents' postnatal mental health and infant health outcomes. This research endeavor could only happen through an interdisciplinary collaboration where the combination of each scholar's unique background and expertise provides the ingredients for a new cross-disciplinary perspective. The diversity inherent in interdisciplinary collaboration breeds new paradigms, which can lead to new research questions, designs, answers, and practices.

In the next section, we turn from the challenges of recruiting and retaining diverse samples in our studies, and the promise of interdisciplinary collaboration, to consider the implications of the findings from our research. Three examples are provided from our project that highlight how the answers to some of our most basic research questions informed the translation of our findings to improve the lives of low-income, working families.

From Research to Application

Example 1: Work Conditions and Mental Health

Decades of research has addressed questions examining how two of the most important spheres in humans' lives—work and family—intersect with and influence one another. An ecological perspective holds that social contexts can differentially shape the processes linking work and family as well as the outcomes of these processes (Bronfenbrenner & Crouter, 1982;

Bronfenbrenner & Morris, 2006). In addition, historical, social, and individual time trajectories can also influence work–family processes. In our study, we were interested in the ecological context of socioeconomic status (SES) or social class. Specifically, we wanted to know how conditions of work for low-wage, low-SES workers were related to workers' mental health. In addition, we wanted to examine these processes at a very specific time in the life course: the transition to parenthood. Much of the literature that has examined the relationships between parental work and children's lives has focused on middle-class professional, two-parent families, excluding the unique challenges facing low-wage workers (Perry-Jenkins, Newkirk, & Ghunney, 2013). Moreover, the focus on parents at an especially sensitive period in both their own and their child's lives, the transition to parenthood, raises work issues that have particular salience such as parental leave policies, health care, and schedule flexibility. Finally, this literature has tended to focus on maternal employment, as opposed to paternal employment, and more specifically, on mothers' work hours and schedules. Much less is known about how both parents' experiences in low-wage work affect their own mental health and relationships, and ultimately their child's development, during the sensitive period of new parenthood.

Research on job conditions and mental health often assumes that jobs at the lower end of the social class continuum have less autonomy and more urgency than jobs at the higher end of spectrum. *Job autonomy* refers to having a sense of control at work, having some say in daily operations, and having coworkers and supervisors who hear and respect your opinions. Research has shown that a sense of autonomy and control on the job positively predicts mental health outcomes (Bourbonnais, Comeau, & Vezina, 1999; Mausner-Dorsch & Eaton, 2000; O'Connor, O'Connor, White, & Bundred, 2001). *Job urgency*, in contrast, refers to having a sense of time pressure at work and feeling overworked. Our findings demonstrated that low-wage workers

have a range of experiences in their jobs; in fact, some employed parents in our study reported high levels of autonomy on the job. There were examples in which low-wage work was experienced as "good" work, in contrast to notions that all low-wage is "bad" work. There were also some workers experiencing high stress and time pressure at work, while others reported a fairly relaxed work pace. These findings not only point to the importance of assessing workers' perceptions of their job conditions, as opposed to the common methodological approach of statistically assigning values to job conditions based on job category; but, more importantly, they highlight the fact that it may be possible to create interventions that lead to more satisfactory job conditions for low-SES workers.

A dominant theory in the literature on work, the demand–control–support (DCS) model proposed by Karasek and Theorell (1990), posits that along with assessing conditions of work demands and urgency as well as autonomy and control, it is also important to assess sources of support received at work. In our study, we assessed supervisor support and coworker support as reported by the worker. We used a 10-item scale developed by Caplan, Cobb, and French (1975) that was designed to tap into feelings of both emotional support and instrumental support experienced by the worker on the job. An example of emotional support was "My supervisor can be relied on when things get tough." An example of instrumental support was "My supervisor goes out of his or her way to make my work life easier." We hypothesized that supervisor support would buffer the potential negative effects of low autonomy or high job urgency.

Before turning to our findings, it is important to highlight the value of using longitudinal data that allowed us to examine trajectories of change in mothers' and fathers' depression and anxiety. This is important for a number of reasons. First, it allowed us to look beyond levels of depressive symptoms to examine whether parents experience different trajectories of change in

mental health. For example, some might experience increases in depressive symptoms over time, recovery from symptoms, or no change at all. In fact, growth curve modeling revealed that mothers tended to have high levels of symptoms around the birth, had substantial declines in symptoms right after birth, then experienced an increase in symptoms upon the return to work. More importantly, there was great variability around this curve showing that while some mothers followed this path, some experienced low, stable levels of depression; some had high, stable levels of depression; and the level of depression among some decreased or increased in different ways. Our aim was to examine how work conditions predicted some of the changes in both mothers' and fathers' mental health trajectories. Our results demonstrated that, in fact, both job autonomy and job urgency predicted mothers' and fathers' mental health across the transition to parenthood, but in different ways (Perry-Jenkins, Goldberg, Smith, & Logan, 2011).

For fathers, increases in job autonomy over the first year of parenthood predicted fewer depressive symptoms at 1 year, and increases in job urgency over the same period predicted higher depressive symptoms at 1 year. These results replicate previous research (Miller, Schooler, Kohn, & Miller, 1979; O'Connor et al., 2001) linking job autonomy to enhanced mental health, but in this case for a homogenous group of men in lower status jobs. These results held up even when controlling for initial levels of depressive symptoms.

In addition, we found that for fathers, supportive work environments moderated the negative effects of low autonomy or high urgency. Analyses revealed that high job urgency coupled with low coworker support was related to higher levels of fathers' depressive symptoms, and high urgency coupled with high coworker support predicted fewer depressive symptoms. These results highlight the potentially valuable role of workplace interventions that focus on

supporting and enhancing coworker relations in an effort to diminish the negative effects of high stress jobs.

For mothers, supportive relationships at work played an important role in enhancing mental health; supportive coworkers served as a protective factor for well-being across the first year of parenthood. In addition, mothers reporting high job urgency coupled with low supervisor support reported higher depressive symptoms than all other groups, and less of a decline in depressive symptoms over the year. This finding supports Karasek's (1990) DCS model by indicating that the combination of stressful job tasks coupled with little support created the most toxic job conditions. For mothers in particular, the protective role of the supervisor played an important part in protecting well-being.

Taken together, our findings show that work conditions are related to both mothers' and fathers' mental health, highlighting key sites for future intervention. Our findings revealed different predictors for mothers and fathers, raising the issue of how much our interventions would have to be modified to support the unique needs of women and men. We concluded that interventions aimed at (a) enhancing job autonomy, (b) training supervisors to provide greater emotional and instrumental support to workers, and (c) providing methods for team building among coworkers are three avenues likely to support all workers while avoiding the complexity of tailoring interventions to target specific populations. Our findings showed that job urgency was only problematic in the face of low supervisor support, so an intervention targeting supervisors is likely to be protective for job urgency as well.

What does autonomy look like in low-wage work? For Kate, who worked in a candle-packing factory, autonomy came in the ability to modify her work and express herself while being supported by her supervisor. Her story provides a clear example of how work can provide

autonomy and support. Kate filled candle orders for customers; as she did her job she started noticing how some customers preferred certain scents or types of candles, so she started adding new samples to the orders with notes to the customers about how they might like these new products. Soon customers began to request that Kate fill their orders. Her supervisor was not only impressed with Kate's creative thinking but asked her to share with her coworkers her approach to working with "faceless" clientele. Her boss respected her innovation, recognized her contributions, and increased her responsibility; he ended up empowering an employee while increasing sales at the same time. It is here where the strengths of a mixed methods approach are most apparent: Our qualitative data provided insight into what autonomy and supervisor support actually "looked like" in a low-wage job.

Our data also suggest that supportive supervisors and coworkers can enhance mental health and buffer the effects of stressful work. In short, enhancing social relationships on the job ultimately benefits workers and the "bottom line" at the same time. Findings from the WFHN intervention studies (see Kelly et al., 2014) provide experimental evidence that enhancing supervisor support and modifying work practices can reduce work–family conflict, especially for the most vulnerable families with young children and the highest work demands.

In addition to direct implications for workplace interventions that could enhance worker well-being, our findings also raise a new set of research questions. In short, we wanted to know more about how specific types of jobs—for example, certified nursing assistant, truck driver, or factory worker—hold unique challenges for low-wage workers. Although a body of European research examines the impact of paid parental leave on parents and children, we know little about the impact of paid parental leave for low-wage workers in the United States (note that the Family and Medical Leave Act [FMLA] only provides unpaid parental leave). However, paid parental

leave is now a part of state policy in California, New Jersey, Rhode Island, and soon New York. The next steps necessary to translate our research to practice is to partner with companies that employ low-wage workers and conduct a pilot intervention aimed at enhancing supervisor support and worker autonomy. In fact, a colleague and the first author of the present paper were recently asked by hospital personnel to conduct an initial survey with two hospitals in Pennsylvania with the aim of identifying key factors predicting high employee turnover rates and developing an intervention to mitigate employee turnover. We identified a number of key factors reported by both housekeeping staff and cafeteria workers, such as a punitive point system, lack of control, rigid supervisors, and mandatory overtime, that predicted turnover rates. We were developing a worksite intervention for the company when, in a quick turn of events, the hospital was bought out and the new CEO expressed no interest in our project. Another example of the messiness of real-life research.

Example 2: Work, Parenting, and Child Development

The research cited thus far indicates that work conditions are related to parents' well-being. Our next question was how are parents' work conditions linked to children's developmental outcomes over time? Our findings suggest that both parenting quality and mental health are key factors linking parents' work conditions to children's social and emotional development.

Using our Study 1 data of long-term (mostly married) cohabiters, we examined how parents' experiences of job autonomy in the first year of the child's life was related to parenting style, and ultimately children's social skills and behavior problems in the first grade. Findings revealed that, for both mothers and fathers, reports of greater job autonomy across the child's first year of life predicted less overreactive parenting and more involved parenting that, in turn, predicted greater adaptive skills and fewer behavior problems for children. Consistent with the

work of Kohn (1977), Parcel and Menaghan (1994), and Yetis-Bayraktar, Budig, and Tomaskovic-Devey (2013), our data suggest that parents' workplace environment is related to parenting styles, which in turn affect children. Thus, working-class parents who have the opportunity to experience self-direction and autonomy on the job are more likely to transmit those same values to their children at home through more sensitive and involved parenting. It is of note that these results emerged in a sample of working-class parents who reported substantial variability regarding experiences of autonomy on the job, a finding that would have been lost had we simply attached job characteristics from the Dictionary of Occupational Titles (DOT) to participants' jobs. These results highlight the importance of assessing workers' experiences on the job as opposed to linking indicators of job quality from the DOT to job categories. We cannon draw conclusions about causality given that our data are correlational. Thus, a key area that is ripe for future research would be randomized control trials in which it would be possible to test the effectiveness of infusing low-wage work with greater self-direction and autonomy on the job.

Using data from Study 2 sample, comprising both single and cohabiting mothers, we were interested in understanding the ways in which aspects of work are related to parenting behaviors. Given that sensitive caregiving during infancy has been linked to numerous positive developmental outcomes for children (Belsky & Fearon, 2002; Moore et al., 2009), another goal of our research was to examine the relationships between low-wage work and early parent–child relationships and parenting quality. We were especially interested in exploring how the work conditions encountered by new, low-income parents' when they returned to paid employment related to parents' ability to be sensitive and attentive with their infants. Thus, we examined whether the day-to-day employment experiences that new mothers faced when they returned to

work predicted observed maternal sensitivity when babies were one year old. Specifically, we tested whether a variety of workplace variables (e.g., work hours, social supports at work, and self-direction over one's job) directly predicted future parenting quality at 1 year, or whether work conditions influenced parenting quality via mothers' psychological distress (i.e., mediated effect). We hypothesized that mothers who reported poorer job conditions would be less sensitive with their 1-year-old infants than their counterparts who reported better job conditions and that maternal anxiety and depression would mediate this relationship.

Data on mothers' work conditions and psychological distress (i.e., anxious and depressive symptoms) were collected during in-home interviews when mothers returned to paid employment, at approximately 4 months postpartum. Maternal sensitivity was assessed via a semistructured, 10-minute free play mother–infant interaction that was filmed in families' homes when infants were 1 year old. Work conditions and mental health data measured when mothers returned to work were used to predict parenting quality at 1-year postpartum. We controlled for mothers' baseline distress during pregnancy to provide a more rigorous test of the relationship between mothers' early work experiences and later caregiving quality.

In general, findings indicated that mothers who worked more hours per week were more sensitive with their infants at 1 year postpartum. Preliminary results also indicated that work preferences mattered for new mothers; mothers who reported a greater discrepancy between the number of hours they preferred to work and the number of hours they actually worked were less sensitive with their infants. This finding suggests that, over and above work hours, it may be the experience of violated expectations or lack of agency around work obligations that negatively influence mothers' parenting.

In addition, we found evidence suggesting that mothers' day-to-day experiences at work influenced maternal sensitivity via mothers' distress. Specifically, mothers who found their post-childbirth work experiences to be more stimulating and self-directed (i.e., reported higher levels of workplace autonomy) were less distressed and, in turn, engaged in more sensitive and responsive parenting with their infants. In contrast, increased time pressure at work (i.e., greater workplace urgency), which was predictive of greater distress, had a deleterious effect on future parenting quality. These results indicate that the relationship between maternal employment and parenting quality may depend on whether employment conditions enhance or interfere with mothers' psychological well-being.

One way to translate these basic research findings into programs that can support new parents is through the development of new interventions and preventative programs that support new mothers and fathers in their efforts to care for their infants while remaining financially secure. Our findings suggest that interventions that target the well-being of vulnerable, low-income parents and children should attend to the broader contextual and employment factors that have been shown to influence well-being and parenting, in addition to targeting maternal well-being directly. The next step in translating our research to practice will be to develop and test a new parenting program that involves an explicit focus on the unique issues and challenges facing low-wage parents, such as returning to work soon after childbirth, maintaining job stability, and negotiating leave time with employers. A colleague and the first author of the present paper are revising a parenting curriculum to directly address the role of employment in the lives of new parents. We will test the effectiveness of the revised curriculum by comparing the relative efficacy and acceptability of a standard prenatal class that focuses on child development and

parenting techniques with a prenatal class that includes a module that specifically focuses on helping new parents balance low-wage work and new parenthood.

Example 3: Parents' Work and Children's Gender-Role Development

Another example of how our findings from basic research can inform future intervention efforts and practice has centered on a specific aspect of child development: gender ideology. Research has shown that children's rigid adherence to stereotypical gender roles can restrain their educational and occupational aspirations, perceived academic competency, emotional expression, and social development (Liben, Bigler, & Krogh, 2002; Rainey & Rust, 1999). Thus, by fostering flexible rather than rigid notions of gender, parents can promote children's access to education, enhance their ability to pursue individual interests and passions, enrich children's social-emotional development, and reduce the negative impact of gender stereotypes and gender-based discrimination during a critical developmental period. This socialization starts at home; when parents adhere to traditional roles, children may lose out on the crucial role of parental modeling as a means of learning how to question socially prescribed gender norms. In contrast, when parents model egalitarian thinking and behavior, children are introduced to the notion of questioning gender stereotypes, and learn to engage critically with gendered assumptions they encounter outside the family context (Smith Leavell & Tamis-LeMonda, 2013). With these concepts in mind, we posed the question, *How do family processes shape children's understanding of what men and women do?* More specifically, for our sample of dual-earner, working-class mothers and fathers, we wondered how gender and social class intersect when parents teach their sons and daughters about the meaning of gender.

Attending to the intersection of social class and gender is a critical aspect of our approach. Our work builds on feminist theorizing, which holds that we must move past

examining social contexts, such as gender, race, and social class, as separate entities that independently influence our lives, to examine how the intersections of such contexts create unique social conditions that shape family processes (Marx Ferree & Hall, 1996). Specifically, in our data, the intersection of social class and gender as they relate to parents' gender ideology and behavior raised interesting questions, in part because much of the research in this area tends to compare middle-class women to working-class or poor women and finds that women of higher social status hold more egalitarian views of women's and men's responsibilities to work and family. The within-group approach that we used, however, which looks within a sample of working-class families, highlighted the great variability in mothers' and fathers' gendered beliefs and behaviors at home and at work.

In approaching this work, we once again found it necessary to examine how our experiences as educated, White women informed the questions we posed and our approach to generating answers. We considered the fact that working-class families may share our interest in promoting gender equality, while also bringing their unique needs and incentives to the table. Given that the wage gap affects families across social classes and that women are overrepresented in low-wage work (Morrison & Gallagher Robbins, 2015)—and furthermore, that men and women's roles as parents are differentially perceived and rewarded (or punished) in the workplace (Correll, Benard, & Paik, 2007)—we expected that parents (especially mothers) would have a vested interest in promoting gender equality for the benefit of the next generation. Indeed, our within-group analyses revealed that, overall, working-class mothers and fathers both tended to report egalitarian gender ideology, although mothers did so more than fathers (Halpern & Perry-Jenkins, 2016).

To address our questions related to gender socialization in the family context, we examined both direct paths (i.e., parents' modeling of specific behaviors) and indirect paths (via the transmission of parental beliefs) to parse apart the relative influence of parents' *explicit* and *implicit* messages about gender on children's gender ideology. To explore the role of parents' explicit messages about gender (i.e., gendered behavior that children could observe), we considered the following: (a) parents' weekly work hours, (b) how traditionally feminine or masculine each parent's job was (based on U.S. Bureau of Labor Statistics data regarding the percent of women holding a given job title), and (c) each parent's report of how the couple divided housework and childcare. In addition, we considered parents' implicit messages about gender, measured in terms of (a) global beliefs about women's and men's "rightful" roles in society and (b) the extent to which each parent preferred for mothers to work outside the home. These data were collected at multiple time points across the first year of parenthood and during a 6-year follow-up. At the final time point, children completed the Sex Roles Learning Inventory (SERLI; Edelbrock, & Sugawara, 1978), an interactive measure that assesses gender-role attitudes. Specifically, SERLI scores reflected children's knowledge of gendered stereotypes, as well as children's flexibility in applying this knowledge to their own behavior.

Overall, our findings reflect the saying "actions speak louder than words." Specifically, when it comes to children's gender ideology, parents' gendered behaviors were better predictors than parents' gender ideology (Halpern & Perry-Jenkins, 2016). Importantly, it appears that sons and daughters attend differently to the gendered messages they receive from mothers and fathers. Mothers who engaged in more traditionally feminine behavior tended to have daughters with more knowledge about feminine stereotypes. It seems that when girls see their mothers engaging in feminine tasks around the house, they interpret this behavior as women's work. We did not see

the same pattern emerge for mothers and sons; rather, boys tended to have *less* knowledge about masculine stereotypes when their mothers spent more time in traditionally feminine work. We posit that this finding can be explained by exposure: It is likely that in these more traditionally oriented families, fathers spend more time in the paid labor force and are thus less available for children to observe directly.

The exception to the rule that "actions speak louder than words" related to an entirely different finding regarding fathers and sons: Fathers who reported more traditional beliefs about gender when their sons were infants tended to have sons with more knowledge about feminine stereotypes at 6 years old. Conversely, when fathers reported more egalitarian views early on, their sons demonstrated less knowledge about feminine stereotypes. It seems, then, that fathers' gender ideology in the first year of children's lives carries unique implications for children's long-term development. Boys appear to be particularly attuned to their fathers' messages about what women and girls can do; thus, fathers may have a unique opportunity to empower women and promote gender equality by teaching their sons to develop an egalitarian view of gender roles.

These findings suggest several things about children's gender development in the family context. First, there is evidence that girls attend more to what mothers *do*, whereas boys attend more to what fathers *say* (and perhaps also to what fathers communicate nonverbally). Furthermore, girls in our study appeared to be more attuned to messages about their own gender, whereas boys' knowledge centered on the other gender. Put differently, feminine stereotypes seemed to be most salient for everyone, although children learned about these stereotypes from same-gendered parents.

How do these findings aid us in identifying and addressing aspects of family life that can be targeted through initiatives to promote family well-being? Ultimately, the take-away point is this: Parents are powerful agents in teaching children about how to be men and women. Noticing what we say and do as parents can help us start conversations with our children; for example, a parent might ask his or her child, "Who cooks dinner at our house? Can boys cook too?" In our view, families do not need to make drastic shifts in their daily lives to impart more egalitarian messages to their children; simply starting conversations may invite children to think critically about gender. The ability for parents to take small but crucial steps to promote children's abilities to think critically and flexibly about gender represents good news for families, especially those for whom demands on time and resources prohibit engagement in more elaborate interventions.

Importantly, translating these findings is all about empowerment. We hope to emphasize mothers' and fathers' unique opportunities to engage in modeling that is empowering for children. Ideally, this approach allows us to set forth a process of empowerment: By delivering our findings to the community in a manner that highlights a family's preexisting strengths, we stand a better chance of getting parents excited about implementing our recommendations. In sum, engaging in translational research means we are not done when the findings are published; simply producing research cannot generate the lasting social impact we hope to have. Our challenge is to deliver our findings back to those who stand to benefit from them in a manner that is accessible and as straightforward as possible.

With few models for how to accomplish these goals from an academic standpoint, we turn to social justice activists for guidance. For example, Zero Tolerance (2013) works to end men's violence against women through a number of projects, including through their Early Years program, aimed at promoting gender equality in early childhood. Their resource guide, *Just Like*

a Child, provides an excellent example of translating theoretical issues into palatable terms and practical guidance that parents can easily digest and use. A specific mode of delivering this information to families, inspired by the grassroots organization *Showing Up for Racial Justice,* is hosting a "Gender Justice" story time (Roberts-Phung, 2016) that invites parents and children to participate in critical conversations about gender stereotypes with a message about gender empowerment. Modeling how to initiate these conversations provides a powerful take-away message for parents: Parental actions and words speak volumes to children about how to be an individual, as opposed to a "boy" or a "girl."

From Discovery to Evidence-Based Practice and Policy

Our aim with this article was to provide examples of how basic research, in the discovery phase, can be parlayed into a translational process for testing applied interventions or informing policy. The results reported here suggest that the workplace may be a potent site for intervention strategies for working parents for three key reasons: (a) Parents spend a substantial amount of time at work, (b) work is a prominent site for adult socialization, and (c) parents' experiences at work influence their mental health, their parenting quality, and their children's development. The next steps in our program of research are to bring what we have learned about parents' work, especially for new parents in the formative first year of parenthood, to bear on intervention work with new parents.

In this final section, we consider how to apply our basic research findings at the first stage of translational research (T1; Rubio et al., 2010). At the same time, much could also be gained by considering how addressing the work–family challenges in the United States might best be addressed with a transdisciplinary approach where scholars from psychology, sociology,

business, organizational behavior, and economics collectively formulate a holistic view of the problem and potential solutions.

Turning first to moving our work into the applied arena, in our analysis of evidence-based intervention programs for new parents, we found that few address the very real challenges of returning to work within weeks of birth, managing nursing while working, finding affordable and high-quality child care, and managing the division of both paid and unpaid labor. Given the very short parental leave offered by the FMLA in the United States and the fact that the FMLA only provides unpaid leave, parents, especially low-income, employed parents, are forced to cope with work–family challenges quite soon after childbirth. Our research team is currently developing a pilot intervention that incorporates aspects of the Supporting Father Involvement (SFI) evidence-based intervention with new components including knowledge and support around work and new parenting. By comparing our adaptation to the original SFI curriculum, we can test whether focusing on work–family challenges is a useful component within the larger parent intervention program.

The applied intervention we hope to pilot test over the next year addresses only one small part of the work–family challenges faced by families in the United States due to mismatched needs of families and goals of employers. For example, "just-in-time" scheduling is a new business practice that has been used by companies to create work schedules that meet the demands of the consumer. Thus, employers track busy times, during weeks, months, and years, then develop scheduling practices where they only schedule the number of staff needed on any given day, and even send workers home on slow days. This practice has resulted in workers not only getting their work schedules on short notice (e.g., days ahead of time) but often results in a loss of hours and lack of full-time employment. Clearly, this is a complicated issue where

business interests, which focus primarily on profits, conflicts with worker and family needs of having a secure income and a fairly regular, or at least predictable, work schedule (e.g., so one can schedule child care and deal with other family responsibilities). The solution to this problem will require the perspectives afforded by multiple disciplines to work together to formulate holistic solutions that meet everyone's needs.

As Rubio and colleagues (2010) argued in their analysis of the contributions of translational research,

> The interaction of several disciplines is required to translate knowledge from one type of research to another (e.g., to move a basic science discovery to the bedside). Collaboration among disciplines through multidisciplinary teams facilitates the emergence of novel concepts and approaches to addressing important health issues. (p. 5)

To support working parents' mental health, especially in vulnerable low-income families, and, in turn, to enhance child development, requires solutions that address workplace policies, work conditions, affordable child care, and knowledge of mental health and parenting. Clearly, input from scholars from a range of disciplines, as well as employers and working families themselves, are needed to conceptualize the challenges, research the problems, and develop systemic change. The first author's recent experiences at the Work and Family Research Network conference, a relatively new group of interdisciplinary researchers who focus on work–family issues, have instilled hope that we can not only talk across disciplines but that we can start to consider and act on key social problems from multiple perspectives. For example, addressing the mental health of working parents as a social concern, an issue critical for the future mental health of workers, but also to the healthy development of the next generation, and will require a multipronged solution

that includes policy, business, family, mental health, and child development experts working together.

From Research to Application, and Back Again

Finally, as noted at the outset of this article, translating research into practice is necessarily a bidirectional process in which the process of bringing basic research into the applied realm is likely to raise as many new questions as it answers, which returns to the research realm. The findings that emerge from our carefully designed research endeavors often do not positively affect peoples' lives in the ways we might hope or plan. Issues of timing, sampling, measures, and methods must continually be reexamined and modified to better understand the salient factors when examining problems. For example, our research points to the prenatal period as critical time to consider the etiology of mental health issues for both parents and children. Other research has shown that high levels of stress, assessed through psychosocial indices and biological processes (e.g., cortisol, epinephrine), are especially toxic to fetal development in the early months of pregnancy. Yet most of our interventions for expectant parents begin in the third trimester or after the birth. Moreover, it appears that there are actually distinct trajectories of maternal depression, such that some women have chronic depression, others develop depressive symptoms postbirth, and others recover postbirth, and these trajectories are influenced by women's employment. Future research needs to address whether these different patterns of symptoms reflect distinct etiologies and require unique clinical solutions. Clearly, more research is needed to address this complex issue.

As another example, our research relies on parents' assessments of their work conditions, which are of clear importance; however, we need more data that assess objective conditions of

jobs and their links to employees' perceptions. Only then can we know what specific dimensions of the job should or could be modified.

The gap in our data between the first year of parenting and our findings 5 years later leaves many questions. What types of work and family transitions occurred during that time period? Are early work experiences more salient than parental work experiences once children are older, or do later experiences have a cumulative effect on early work–family patterns? What role does the availability, flexibility, and quality of child care play in affecting children's development as well as parental stress and well-being in the context of low-wage parental employment?

The inevitable bidirectionality of the translational research process will continually lead to new questions that call for a return to the discovery stage. However, translational perspectives encourage us to move more quickly to pilot interventions and evidence-based trials to test our findings to see what works and what does not work in the real world. Translational work challenges us to take our most informed guess as to what changes could have positive effects on the health and well-being of individuals and families and to then go out and try to change things for the better. As Kurt Lewin so wisely stated, "if you want to truly to understand something, try to change it" (Tolman, 1996, p. 31); it is in this process of translating our research that the benefits of knowledge for the real world is truly tested.

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